Local Electronic Government

Advances in information and communication technologies have made a significant contribution to the modernization of public administration. This book investigates how the Internet is being used as a tool for comprehensively modernizing local government, providing a comprehensive understanding of one of the most important organizational innovations of our time.

Local Electronic Government is one of two volumes presenting a comparative study of the implementation of electronic government. This particular volume compares and assesses attempts to create efficient and user-friendly electronic government at a local, municipal, level, analyzing, among other things, the strategies and technologies applied, and the applications realized in order to do so. It investigates both how to implement successful e-government and the potentials and limits of transferring best practice to under-performing cities.

This book includes new empirical research on e-government within the USA, the UK, Finland, France, Germany, the Netherlands and Japan. It will appeal to students and researchers of electronic government and public administration in general. Readers of this book may also be interested in its companion volume, National Electronic Government.

Helmut Drüke is Senior Consultant with Capgemini Germany and has worked as a researcher on a number of communication and e-government related projects.
Routledge research in information technology and society

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A comparative study
Edited by Helmut Drüke
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Abbreviations

ACV  Anneau Citoyen Valenciennois
AD   Active Directory service
ADSL Asymmetric Digital Subscriber Line
ASP  Application Service Provider
ATM  Asynchronous Transfer Mode
BMWi Bundesministerium für Wirtschaft und Technologie
BMWA Bundesministerium für Wirtschaft und Arbeit (Federal Ministry of Economics and Labor, Germany)
BOS  Bremen Online Service
BOT  Buy, Operate and Transfer
BSC  Balanced Scorecard
BZK  Ministry of the Interior and Kingdom Relations (the Netherlands)
C2G  Citizen-to-Government
CATV Cable Television
CBT  Computer-based Training
CdC  Caisse des Dépots et Consignations
CDS  Community Development System
CDU  Christian Democratic Party, Germany
CEO  Chief Executive Officer
CIO  Chief Information Officer
CNET Centre National d’Études des Télécommunications
CPA  Comprehensive Performance Assessment
CRM  Customer Relation Management
CSTI Conseil supérieur pour les technologies d’information
CTO  Chief Technology Officer
DB   Database
D21  Initiative Deutschland 21
eBBS Electronic Bulletin Board System
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>EdF</td>
<td>Electricité de France</td>
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<tr>
<td>ESD</td>
<td>Electronic Service Delivery</td>
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<td>EZReg</td>
<td>Easy Registration</td>
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<td>FAZ-Net</td>
<td>Online newsletter of the German newspaper <em>Frankfurter Allgemeine Zeitung</em></td>
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<td>FDDI</td>
<td>Fiber Distributed Data Interface</td>
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<tr>
<td>FHG-ISI</td>
<td>Fraunhofer-Institut für Systemtechnik und Innovationsforschung (Fraunhofer Institute for Systems and Innovative Research)</td>
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<tr>
<td>FTE</td>
<td>Full-time Equivalent (employees)</td>
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<td>FY</td>
<td>Fiscal Year</td>
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<tr>
<td>G2B</td>
<td>Government-to-Business</td>
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<td>G2C</td>
<td>Government-to-Citizen</td>
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<tr>
<td>G2E</td>
<td>Government-to-Employee</td>
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<td>Gb</td>
<td>Gigabyte</td>
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<td>GBA</td>
<td>Gemeentelijke Basisadministratie (Municipal Public Records Database), the Netherlands</td>
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<td>GEMNET</td>
<td>Association of Local Authorities (the Netherlands)</td>
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<td>GIS</td>
<td>Geographic Information System</td>
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<td>GSM</td>
<td>Global System for Mobile Communication</td>
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<td>HBCI</td>
<td>Home Banking Computer Interface</td>
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<tr>
<td>HTML</td>
<td>Hyper Text Markup Language</td>
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<td>HFC</td>
<td>Hybrid Fiber Coax</td>
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<tr>
<td>I&amp;DeA</td>
<td>Improvement and Development Agency</td>
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<td>ICMA</td>
<td>International City/County Managers Association</td>
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<td>ICTs</td>
<td>Information and Communication Technologies</td>
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<td>IE</td>
<td>Internet Explorer</td>
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<td>IEG</td>
<td>Implementing e-Government</td>
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<td>ISMS</td>
<td>Information Security Management System</td>
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<tr>
<td>IS</td>
<td>Information Systems; also Information Society</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>JUHTA</td>
<td>Julkisen hallinnon tietohallinnon neuvottelukunta (Association of Finnish Local and Regional Authorities and the Advisory Board for Information Management in Public Administration)</td>
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<tr>
<td>JUNA</td>
<td>Julkisen verkkosiointin neuvottelukunta (Finnish Development Project for e-Government)</td>
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<tr>
<td>KGSt</td>
<td>Kommunale Gemeinschaftsstelle zur Verwaltungsvereinfachung (Joint Communal Association)</td>
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<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>LAN</td>
<td>Local Area Networks</td>
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<td>LDAP</td>
<td>Lightweight Directory Access Protocol</td>
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<td>LGWAN</td>
<td>Local Government Wide Area Network</td>
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<tr>
<td>Mb</td>
<td>Megabyte</td>
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<tr>
<td>METI</td>
<td>Ministry of Economic Trade and Industry (Japan)</td>
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<td>MMDS</td>
<td>Metropolitan Media Delivery Service</td>
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<tr>
<td>MPHPT</td>
<td>Ministry of Public Management, Home Affairs, Post and Telecommunications (Japan)</td>
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<tr>
<td>NICT</td>
<td>New Information and Communication Technologies</td>
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<td>NPM</td>
<td>New Public Management</td>
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<td>NPO</td>
<td>Non-profit Organizations</td>
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<td>NT</td>
<td>New Technology (Windows)</td>
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<td>OA</td>
<td>Outdoor Action</td>
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<tr>
<td>OL2000</td>
<td>Overheidsloket 2000</td>
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<tr>
<td>OSCI</td>
<td>Online Services Computer Interface</td>
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<tr>
<td>PC</td>
<td>Personal Computer</td>
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<tr>
<td>PDF</td>
<td>Portable Document Format</td>
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<td>PPP</td>
<td>Public-Private Partnership</td>
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<td>PS</td>
<td>Parti Socialiste</td>
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<td>PTT</td>
<td>Post Telephone Telegraph</td>
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<tr>
<td>PWR</td>
<td>Pressurized Water Reactor (nuclear power station)</td>
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<td>Q&amp;A</td>
<td>Questions and Answers</td>
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<td>RPR</td>
<td>Rassemblement pour la République</td>
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<td>SIG</td>
<td>SmartCities Interest Group</td>
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<td>SMS</td>
<td>Short Message Service</td>
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<tr>
<td>Socitm</td>
<td>Society of Information Technology Management</td>
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<td>SOHO</td>
<td>Small Office Home Office</td>
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<tr>
<td>SSL</td>
<td>Secure Sockets Layer</td>
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<tr>
<td>SWOT</td>
<td>Strengths-Weaknesses-Opportunities-Threats</td>
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<tr>
<td>TCO</td>
<td>Total Costs of Ownership</td>
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<tr>
<td>TCP/IP</td>
<td>Transmission Control Protocol/Internet Protocol</td>
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<tr>
<td>UDF</td>
<td>Union pour la Démocratie Française</td>
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<td>UMP</td>
<td>Union pour la Majorité Présidentielle (UMP)</td>
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<td>USB</td>
<td>Universal Serial Bus</td>
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<td>VIPNet</td>
<td>Virginia Information Providers Network</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>VLAN</td>
<td>Virtual Local Area Network</td>
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<td>VNG</td>
<td>Dutch Association of Local Authorities</td>
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<td>VP</td>
<td>Virtual Private (network)</td>
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<td>WAN</td>
<td>Wide Area Network</td>
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<td>WAP</td>
<td>Wireless Application Protocol</td>
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<tr>
<td>Wi-Fi</td>
<td>Wireless Fidelity</td>
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<tr>
<td>XML</td>
<td>eXtended Markup Language</td>
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Country abbreviations

<table>
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<td>Fin</td>
<td>Finland</td>
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<tr>
<td>Fr</td>
<td>France</td>
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<td>G</td>
<td>Germany</td>
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<tr>
<td>NL</td>
<td>the Netherlands</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
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<td>Jap</td>
<td>Japan</td>
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<td>USA</td>
<td>United States of America</td>
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1
Introduction

Helmut Drüke

The need for substantial knowledge in local e-government

At the start of the new century at the latest, it became a high priority global challenge for the various active participants in politics, business and society to develop e-government across the range of applications and through all levels of the state from the central government to rural areas, i.e. to provide information technology support in governing and administration (public policy formation, decision-making, creation and provision of services, participation) (cf. West 2001; United Nations 2002).

To achieve this high goal, a broad range of innovation has been started in a large number of countries throughout the world to introduce a highly demanding reorganization program in a comparatively short time—and in many areas this reorganization has already been implemented. Countries as different as France, New Zealand, Japan, Austria, Germany and the USA have set the year 2005 as the implementation date for the online provision of suitable services, Canada plans to reach this stage one year earlier. In some countries considerable funds have been made available for this purpose. The Ministry of Local Government in the UK made an overall total of £675 million (i.e. approx. EUR 1 billion) available to local communities up to 2005–06 to enable local e-government to be implemented throughout the country in the next few years.

The countries of Eastern Europe and the developing countries in Asia, especially China, are also making great efforts to modernize their public administration with the aid of e-government. The extraordinary challenge here is to achieve a double leap in the development. In most of these countries, the modernization of the public sector must be implemented parallel to the progressive democratization of public life. E-government is an important tool in this process, for example as a way of limiting the corruption which in some cases still permeates the state institutions, because the use of the Internet for state services means that a new level of transparency can be achieved in the activities of the state.

This book is published at a time of transition. As the country reports for 2002 show, the focus was on providing users in the local communities with an information service, communication facilities in the form of chats and forums, email links to public authorities and council members or the less complex transactions. From this year, the developed
countries are focusing on a new generation of local e-government, the substance of the virtual town hall and the ability to handle transactions of higher complexity, which are sometimes very individual in character, without discontinuity of media and in a legally binding and secure manner.

This report deals solely with e-government at the level of towns, cities and local communities. The term “virtual town hall” is also used to denote this. The strategies, administrative structures, and political programs in these countries in the field of e-government are compared in the first volume of this publication (Eifert 2004). Knowledge of the differences between the countries with regard to these determining factors for the shape of e-government at the local level is essential to understand the current situation in the seven countries which are presented in this book.

The general challenges facing local e-government in the near future include:

1 the question of the critical mass of services offered to refinance the prior investments by the state and private businesses;
2 the associated problem of a financially viable demand by the users; this is reflected in questions which seem completely unrelated, such as the digital divide, charges, etc.;
3 the problem of security and the legally binding character of the transactions;
4 the implementation of e-government as a comprehensive modernization project, not just a distribution channel for local community services.

The challenges on the threshold of the new generation of local e-government are complex, and there is a great need for an exchange of experience. In view of the enormous problems at the local community level, with a widening gap between the areas where action is needed (growing unemployment, increase in social welfare payments, etc.) and the reduced scope for such action due to the loss of income, decision-makers are faced with a precarious dilemma. On the one hand they see the possibilities that e-government offers to relativize the pressure of their problems, but on the other hand they are faced with the necessity of approving and implementing a modernization project which will initially involve higher costs and will only bring a return on investment in the medium term, i.e. about three to five years after it is introduced. If the pressure to act in other areas of local politics becomes too great, for example modernizing the infrastructure or maintaining welfare facilities, this can easily push the priority of e-government into the background. This risk is especially great if the local communities have a lot of ground to make up in their public facilities in areas such as motorways, public transport, schools or kindergartens. This applies to the more underdeveloped areas in Western Europe and to large parts of Eastern Europe, where the problem of creating an awareness of e-government is felt to be especially great.

In this situation, practical assistance from the academic world is necessary. Knowledge must be presented in such a way that local communities will no longer try to reinvent the wheel and adopt roundabout approaches which they cannot afford, in view of the pressure of the problems, if the e-government project is not to suffer great damage.

In its “Communication” of 26 September 2003 on “The Role of E-government for Europe’s Future” (European Union 2003) the Commission of the European Communities stresses the huge benefit of initiating an exchange of good practice.
Best practices encompass technological, organizational, legal and training elements, they require long-term commitment of all key actors involved, and they illustrate tangible benefits and results. Exchange of experience and replication of best practices can bring cost-savings in moving to broad take-up. It also prepares for future interoperability and interworking between administrations.

(European Commission 2003:21)

Actors and experts throughout the world agree that learning from, and transfer of, good practices internationally can contribute to the goal of global co-operation in e-government, which is a priority of the World Summit on the Information Society. In its Action Plan the participants of the World Summit defined as an important action to “support international cooperation initiatives in the field of e-government, in order to enhance transparency, accountability and efficiency at all levels of government” (WSIS 2003).

This book aims to contribute to this exchange of knowledge and experience. On the basis of analysis from seven countries it presents solutions, prospects, procedures, experiences, blind alleys, detours—all in all an analysis of real-life implementation of local e-government which can help each local community to examine its own activities in the light of international experience and, if necessary, to reorganize them.

Following this introductory section, the second section of this chapter presents the main research questions, whereas in the third section the research partners in the international team are presented. The fourth section discusses other studies on local e-government. The theoretical concept of the research is explained in the fifth section. The final section of this introduction presents the structure of the book.

Modernization of public administration with e-government

The modernization potential of e-government at the local community level

In local e-government the secular developments of the last few decades are drawn together, for example the rapid progress of information and communication technology (Garson 1999; Grönlund 2000), globalization (Carnoeiro 2000, Valenzuela et al. 2001), the declining importance of ideologies\(^1\) (OECD 2000), new opinions on the reasons for efficiency in organizations (Daft and Lewin 1993; Harrison 1994; Kogut and Bowman 1995; Baldwin and Clark 1997) and a changed understanding of the relationship between the state and society (Carnoeiro 2000; United Nations 2001).\(^2\) The lowest level of the state hierarchy is where most administrative contacts between citizens and business companies take place. Here it is decided to what extent the state presents itself to its customers as a service-provider, not just an authoritative body. As the OECD phrases it, the main effect of e-government is

simply better government by enabling better policy outcomes, higher quality services, greater engagement with citizens and by improving other
key outputs identified. Governments and public administrations will, and should, continue to be judged against these established criteria for success.

(OECD 2003:12)

The demand for greater efficiency in state action includes the “proactive approach” to anticipate the future needs of the target groups for state action. And this understanding of the state includes public participation in the decision-making process, especially at the local community level.

E-government has a high global priority. The subject is regarded as a central national task: programs, strategies and institutions are being established or adapted. This high awareness in itself encourages the development of local e-government. In a sense, e-government creates a second chance for administrative reform. This is partly because some of the same subjects are on the agenda and partly because the establishment of the virtual town hall, if it is done systematically, also involves modernizing the administration.

Strictly speaking, e-government even goes a step further, because it aims to restructure the internal processes from the customer’s perspective to a far greater extent than was planned in the administrative reform. According to Hill (2002), e-government also goes beyond the previous administrative reform in its greater focus on services, for example its life episode approach with integrated services, process improvement by e-government and a “reinvention” of administrative action with new organizational forms and new methods of service to the public.

The use of information and communication technology lends great support to the administration in all reform processes. As a result, it will be possible to put the goals of administrative reform back on the agenda—goals such as increasing the effectiveness and efficiency of the administration, citizen and customer orientation, a greater service quality and an increase in the transparency of the tasks, improved working conditions for the administrative staff, reminding staff of the goal of pooling subject and resource responsibility in a coherent e-government project and transforming this into fresh motivational impetus and renewed activity.

**The problem of the concepts of modernization and best practice**

In the current discussion about the best way for local communities to develop toward e-government, familiar thought patterns from discussions about the prospects of the industrial society in the 1980s or the forms of New Public Management in the 1990s are apparent.

There is often an impression that there can be a generally valid concept of modernization with goals that are defined by a best-practice model, and that this model is the final goal of the development of the public administration from a Weber-type administration—characterized by increased effectiveness due to distribution of competence, a highly formal division of labor, a strict hierarchical structure, impartiality, specific control mechanisms or the lifelong staff remuneration principle—to a flexible organization similar to an economic enterprise with customer orientation, holistic forms of work, performance-oriented remuneration and career patterns and shallow hierarchies.
According to the convergence theory, an increasingly trans-national development model for the public sector can be expected in the distant future. Then, the local communities would be under enormous pressure to act, but at the same time without any clear idea of what action is appropriate, so local decision-makers would look to the best-practice models and imitate their solutions, thus gaining respite in their complex decision-making situation. Best-practice models would then form the reference point for their own decisions on the shape of e-government.

From a theoretical point of view, there are several questions about such a convergence theory. First of all, the fundamental question of when a solution is considered best practice must be addressed. Obviously, a high degree of abstraction is needed to award existing solutions the epithet of the one best way. The abstraction must transcend the distinctly national specific differences in culture, tradition, state structure, language, attitudes, economic structure, etc. The significance of all of these factors for the structure of society and the state has been discussed in the theories of the national innovation system (Dosi et al. 1989) and new institutional economics (Soskice 1994).

Moreover, best practice is a moving target. Possible solutions which are emulated by a latecomer may already be out of date. Best practices certainly evolve over time, as was impressively shown in the analysis of the development of the governance structures of the US economy (Hollingsworth and Streeck 1994).

This leads to questions which are very relevant to practical applications. If a solution has been identified as a best practice, can it be copied? What role is played by path dependency, i.e. conditioning by the structure that has grown historically? Classifying solutions as best practice thus often has an ahistorical component, and this can make them devoid of life and soul in face of the historical development of structures and solutions. And the two concepts, modernization and best practice, are isolated from the different political, economic and cultural structures in which they are firmly embedded.

This relativization of the central concepts in the present discussion, modernization and best practice, should be borne in mind in the following case studies on local e-government in seven countries. This publication can help to carry forward the question of convergence or divergence in the development of the public sector, but it cannot give a final and conclusive answer. It merely gives a snapshot of the process of establishing e-government in local communities. To enable a comparison to be made which takes the respective national characteristics into account, a uniform survey concept is used, which is presented as the “methodical approach of the international comparative study.”

Research field and research team

Starting point: the funding program for local e-government

The international comparative study on the forms of local e-government is a sub-project in the social science research accompanying the MEDIA@Komm programs of the Federal Ministry of Economics and Labor (BMWA) in Germany.

With a total subsidy volume of DM 45 million (plus about DM 70 million from private sponsors and municipalities) in three prize-winning municipalities, the Federal Ministry of Economics and Labor aimed to promote local e-government in selected local
communities with a clear priority on testing secure, legally binding and confidential business and legal transactions between the public administration and its customers.

Monitoring foreign examples and strategies in the area of e-government is intended to go beyond mere benchmarking and to learn from good practice in the selected countries—especially by identifying

**Table 1.1 Overall goals of the German MEDIA@Komm Funding Program**

<table>
<thead>
<tr>
<th>Goal</th>
<th>Description</th>
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<tbody>
<tr>
<td>Improvement of working and living conditions for citizens and customers (&quot;C&quot;) in the urban context</td>
<td>Efficiency, transparency and user orientation of local government/administration (&quot;G&quot;) by electronic services</td>
</tr>
<tr>
<td>Efficiency, transparency and user orientation of local government/administration (&quot;G&quot;) by electronic services</td>
<td>Flexibility and productivity in G2C and G2B contexts</td>
</tr>
<tr>
<td>Flexibility and productivity in G2C and G2B contexts</td>
<td>Legally binding, trustworthy e-services and e-transactions with e-signatures, e-payment and e-infrastructure</td>
</tr>
<tr>
<td>Legally binding, trustworthy e-services and e-transactions with e-signatures, e-payment and e-infrastructure</td>
<td>Technical synergies between e-government and e-commerce</td>
</tr>
<tr>
<td>Technical synergies between e-government and e-commerce</td>
<td>Pilot projects as models—initiating further solutions</td>
</tr>
</tbody>
</table>

Source: Own analysis.

what cases and solutions have been found and what strategies have been planned in proposed international applications, and how these could promote the development of the information society in the cases sponsored by MEDIA@Komm and in German local communities, towns and cities in general. This includes an examination of the special opportunities and limitations for the transferability of good examples. This interest in an exchange of experience and a search for good practices applied in the same way to the authors involved in the project.

The institutes which investigated the monitoring of international e-government worked with a theme-based division of labor. The Hans Bredow Institute in Hamburg investigated the structure of national strategies and general institutional arrangements in the selected countries, and the German Institute of Urban Affairs (Difu) analyzed the local community applications. The results of the scientific work done by the Hans-Bredow Institute (HBI) are laid down in the first volume of this publication (Eifert 2004).

The team from Difu and HBI based its selection of countries on a set of criteria, i.e. the differences in the state structures, the interaction between the levels of the administration and between the clientele and the administration in various countries and the specific progress made by the countries in the introduction and implementation of e-government.

The sample considered in the study therefore includes centralist and unitary countries such as France and the UK and, at the same time, federalist or decentralized countries such as Finland, Germany, Japan and the USA. Because in the study on local e-government a research team could not be set up in Australia, the Netherlands has been selected as an example of a country with a relatively strong local community structure.
Methodical approach of the international comparative study

The methodical approach is mainly focused on case studies. This means that local e-government projects are studied as a coherent whole across a broad range of issues.

The international team worked with a questionnaire which was agreed between the participants and orientated toward nine critical factors for success (Grabow et al. 2002). In their empirical work, the researchers collected information which would enable the major elements of the project history to be reconstructed, for example the initial impetus, the reasons and goals at the start of the e-government project in the local communities. They also asked whether the strategic orientation of the project was systematically top-down or a more incremental bottom-up approach.

The second block collected data to determine the current status and the profile of the e-government project under the success factors presented on page 14. Specifically, answers to the following questions were collected:

• To what extent and in what way is e-government implemented in the overall city politics?
  Subjects: combination with administrative reform, re-engineering of the structural and procedural organization with links between the front and back ends, marketing and creation of internal acceptance.

• What applications have been realized and what infrastructure has been implemented?
  Subjects: implementation and state of the planning for the online services, portal type, legal form for co-operation, one-stop shops, use of electronic signatures, methods of payment, access, citizen participation, computer hardware and software, technologies.

• How are the main resources of the project set up?
  Subjects: project funding; e-skilling for the management, employees and users of the administration.

• How are the staff and management of the administration prepared for e-government in terms of skills, acceptance and integration?
  Subjects: systematic training and instruction, early integration and cooperation, measures to promote acceptance.

• What hindrances or obstacles had to be surmounted, and what misgivings have/had to be cleared up in the e-government process?
  Subjects: Obstacles on the national, regional and/or local level, motivational hindrances, lack of awareness.

The collection of data about these factors served to determine the respective profile of the local e-government in the selected municipalities.
Research team

Researchers from seven countries took part in the study (see country selection). The international team was coordinated by Helmut Drüke (Difu). It was agreed to implement the studies, or process empirical studies that had only recently been carried out, during 2002. A more severe restriction of the time of the study to achieve better comparability was not feasible because of the natural differences in the time available and the other workload of the researchers. Table 1.2 presents the members of the teams (European countries first, then the overseas countries).

At this point I would like to thank warmly the members of the international teams for their commitment, their suggestions in all phases of the project, and their forbearance when they were asked to revise their reports.

Research in the field of local e-government

In the next section the theoretical concept of the study is developed in several steps. First of all, international comparative studies are presented with the aim of giving a general overview of the development of local e-government and placing our own study into a clearer methodical context. After that, our own theoretical approach is introduced.

Table 1.2 Members of the International Research Team

<table>
<thead>
<tr>
<th>Country</th>
<th>Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>Prof. Ari-Veikko Anttiroiko, University of Tampere, Department of Local Government Studies.</td>
</tr>
<tr>
<td>France</td>
<td>Prof. Jean Pierre Chamoux, Université Paris, V. Institut Universitaire de Technologie, Département Techniques de Commercialisation.</td>
</tr>
<tr>
<td>Germany</td>
<td>Helmut Drüke, PhD in Political Sciences, 2000–2003 Researcher at the German Institute for Urban Affairs, now Senior Consultant with Capgemini Germany Assistant Professor in Political Sciences, E-Government Adviser, Berlin.</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>Dr Ronald Leenes, Assistant Professor in Law, IT and Government at Tilburg University, Center for Law, Public Administration and Centrum voor Recht. Dr Jörgen Svensson, Assistant Professor in Sociology and Informatization, Department of Sociology, School of Business, Public Administration and Technology at the University of Twente.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Martin Ferguson, Senior Fellow in Information Management at the Institute of Local Government Studies. E-Government Advisor of I&amp;DeA, the Improvement and Development Agency in Great Britain.</td>
</tr>
<tr>
<td>Japan</td>
<td>Prof. Masahiro Fujita, Otemae University, Takahiro Izawa and Hiroki Ishibashí, Research Fellows at the Kansai Institute of Information Systems and Industrial Renovation (KIIS) in Osaka.</td>
</tr>
<tr>
<td>United States of America</td>
<td>Maria Maureen Brown, PhD, Associate Professor of Public Administration University of North Carolina at Chapel Hill. Shannon Howle Schelin, E-Government Research Associate at the University of North Carolina, School of Government.</td>
</tr>
</tbody>
</table>
The following presentation makes no claim to completeness; it merely presents typical or influential studies on the state of development of local e-government.3

**E-government in a narrow view of online services and e-democracy**

The study by the business consulting company Cap Gemini Ernst & Young on commission for the European Commission is primarily focused on determining the online capability in the countries of the EU. “This measurement is a benchmark study for the 15 member states…which determines the percentage of fundamental public sector services which are available online.” The study thus aims to determine “progress in the area of e-government and a comparison of the services provided” (Cap Gemini Ernst & Young 2002:3).

The first question is what percentage of services can be handled via the Internet. Then a comparison of target and actual figures is used to calculate a percentage figure for the online services. The percentages determined for the individual countries are then compared. This comparison of percentages leads to a cardinal structured ranking, i.e. the gap between the countries can be measured with exact values. The result is stated as follows:

The average European online capability has now…reached 55 per cent. This means that more than half of the transactions between citizens and the state throughout Europe can be handled or at least supported online…The average in Germany up to now is about 48 per cent.

(FAZ-Net of 1 July 2002).

In a study of January 2001 the business consulting company Accenture examined “virtual town halls under the magnifying glass.” The focus was on the “functionality and sophistication of the services,” in other words the question of how many services are available online and in what quality (Accenture 2001). The study included analysis of the service quality of the services provided and the “specific orientation of the services to the respective user” (Accenture 2001:17).

Here, too, further-reaching conclusions are drawn about the reasons for the differences between individual cities in a national and global context, although this is not logically possible with this restricted perspective on e-government. Against this methodical background, summaries such as the following are largely unsubstantiated: “The research has identified the following primary problems: lack of finance, legal obstacles, technical and structural deficiencies, political obstacles.”4

The project KEeLAN (Key Elements for Electronic Local Authorities’ Networks) within the EU program on information society also examines the web services of a number of cities and local communities for their quality, their range for the users and the integration of online services. The aim of the KEeLAN project is to establish suitable methods and principles for forward-looking action in local community and regional administrations. To this end, 700 local community and regional Internet portals within the 15 European member states were examined and evaluated for their level of interactivity. A total of nine different service areas were taken into account (e.g. politics, environment, building, culture). As a result, 50 best-practice examples for successful local e-
government were selected as a basis for Europe-wide benchmarking. These benchmarks derived from empirical studies were then used to develop “road maps” with recommendations for local community action and strategy.

The empirical basis for the desired goal is impressively broad, but the theoretical concept for the recommendations for action and strategy appears to be too narrow. Local communities cannot improve their web services simply from a presentation of best-practice solutions. The basic requirements for best-practice solutions hardly take account of the different situations of the respective municipalities.

A recent study claims to be “the first research effort to evaluate digital governance in municipalities throughout the world” (Holzer and Kim 2003:10). The project was conducted jointly by the E-governance-Institute of Rutgers University-Newark and the Global e-Policy e-Government Institute of Sungkyunkwan University, Korea. The team evaluated the official websites of “the largest city in each of 98 countries with the highest percentage of Internet users” (Holzer and Kim 2003:6). Such a survey based on an analysis of websites can only claim to a limited extent “to evaluate digital governance in municipalities.” There is no logical reason why e-government is considered to be equal to a website. The website merely illuminates the shop window of the virtual town hall; the underlying issues such as the organization of the transaction processes, project organization, co-operation structures, etc. are systematically excluded. Such a survey can provide information about the marketing of e-government but it certainly does not do justice to the virtual town hall in its complexity.

The approach of the e-government team of the Bertelsmann foundation is more complex. The aim is to develop a system of key indicators because “the use of resources for the continued development of e-government in the local community context is highly relevant to control systems” (Bertelsmann 2002). The basic principle is similar to the original by Kaplan and Norton (199?) and is based on the four factors of “economic effectiveness,” “employee satisfaction,” “customer satisfaction” and “task fulfillment.”

However, this concept reflects a narrow understanding of government as mere business and legal transactions. This definition of e-government, which goes back to the commercially dominated discussion of new control models in the 1980s and 1990s, arbitrarily separates the genuinely political processes of policy formation and participation (governance) from the task of governing (government). This leads to a lack of differentiation in the outcome variables, i.e. the definition of successful e-government. Here, again, a best-practice model is established which measures all e-government projects according to a one-size-fits-all approach.

**Local e-government in a management perspective**

The project of the British research group from the organizations Socitm and I&DeA on the state of development and the development paths for local e-government in an international perspective regards the phenomenon of the “virtual town hall” especially from a management perspective (Socitm and I&DeA 2002). The main focus is on the question of what has been achieved internationally and what remains to be done. Research teams from the participating 14 countries contribute best-practices examples or typical cases. The study by the country teams and the evaluation by the British team of
authors were oriented toward an analysis concept which expresses a comprehensive conceptual approach (see Table 1.3).

Such an approach based on the complexity of e-government projects is necessary to grasp the respective phenomenon with its specific characteristics, and the only possibility to adopt the consistent maxim for action:

For the majority, life on the local e-government train will be rather chaotic; identifying opportunities and following them through where they occur, and remaining in step with the rhythm and life-blood of the local communities and their politicians.

(Socitm and I&DeA 2002:36)

This is an appropriate maxim for action instead of analyzing the state of development of e-government to determine where more and better online services are offered.

Table 1.3 Local Government Now “Template”

<table>
<thead>
<tr>
<th>Vision</th>
<th>Leadership</th>
<th>Management</th>
<th>Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear goals</td>
<td>Fast decisions</td>
<td>Projects</td>
<td>Funding</td>
</tr>
<tr>
<td>Shared values</td>
<td>Strategic planning</td>
<td>Risks</td>
<td>Technology</td>
</tr>
<tr>
<td>Commitment to change</td>
<td>Open to experimentation</td>
<td>Contracts</td>
<td>Security</td>
</tr>
<tr>
<td>Consultation</td>
<td>Communication</td>
<td>Services</td>
<td>Skills</td>
</tr>
<tr>
<td>Collaboration</td>
<td>ICT governance</td>
<td>Information</td>
<td>Learning</td>
</tr>
</tbody>
</table>


Theoretical concept: the set of critical success factors

The basis for the “model for success in local e-government” developed in the accompanying research of MEDIA@Komm (http://www.mediakomm.net/) is a comprehensive understanding of e-government. This includes all aspects of government and administration (determining public opinion, decision-making, creation and provision of services, public participation) insofar as they can be supported and enhanced by the use of information and communication technology.

The long-term success of local e-government is determined in the last resort by far more factors than are often assumed. Online applications and their benefits are only one aspect. One of the main insights of Administrative Science on the subject of e-government is that the technology or the applications on their own are not the key to successful e-government. In fact, there is a whole range of factors such as organizational measures, strategic procedures, qualifications, communication, partnerships, obtaining resources and much more.

To underline the complexity of these factors, a model has been developed by the research team of the Difu, in cooperation with the other institutes of the accompanying research, science experts and representatives of the municipalities, which draws together...
ten factors for success, with more than 50 individual sub-factors, which must be taken into account in the design of virtual town halls (see Table 1.4). The conceptual components of the model have already been tested for their effectiveness in practice in the framework of the accompanying research for MEDIA@Komm.

The factors for success can be sub-divided into five categories:

- The first category draws together the foundations of the virtual town hall, on the one hand a vision, strategy and goals and on the other hand the specific project management (factors one and two).
- The second category (factors three and four) relates to the content of the information and communication services and the business and legal transactions in virtual town halls, i.e. the applications, and their evaluation as a benefit for the interested participants, i.e. citizens, business companies, administration and politics.
- The third category (factors five, six and nine) relates to the technical, personnel and financial infrastructure of the virtual town hall.
- The fourth category (seven and eight) focuses on the factor of internal and external communication and the external relationships of the project in the form of partnerships for projects (including joint projects) and networks for the exchange of experience.
- The fifth category covers the factor of legality.6

The success of local e-government can be measured by the extent to which these goals are achieved. Even though their weighting varies from

### Table 1.4 Success factors for local e-government

<table>
<thead>
<tr>
<th>Success factor</th>
<th>Sub-factors</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Guiding principles and strategy</td>
<td>• Guiding principles for e-government</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>• Overall strategy “virtual town hall”</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>• Integration of the guiding principles and strategy into wider guiding principles and strategies</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>• Dealt with by the top leadership</td>
<td>AA</td>
</tr>
<tr>
<td></td>
<td>• Political support</td>
<td>AA</td>
</tr>
<tr>
<td></td>
<td>• Priorities and long-term planning for the project “virtual town hall”</td>
<td>A</td>
</tr>
<tr>
<td>2 Organization, project and change management</td>
<td>• Project organization</td>
<td>AA</td>
</tr>
<tr>
<td></td>
<td>• Combination with administrative reform</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>• Re-engineering of the procedural organization, transaction process analysis and optimization</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>• Re-engineering of the structural organization</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>• Organization of co-operation</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>• Evaluation and monitoring of results</td>
<td>A</td>
</tr>
</tbody>
</table>
### 3 Applications
- Information
- Communication
- Transactions
- Integration
- Participation

### 4 Benefits and costs
- Citizens
- Business companies
- Guests
- Administration
- Politics

### 5 The right technology and organization of the use of technology
- Workplace design
- IT networking—hardware
- Network-based software solutions
- Core services and infrastructure
- Electronic signatures
- Technical platform
- Access
- Standards
- Security

### 6 Competence, motivation and qualifications
- Staff
- Management
- Council/senior administrative staff
- Users

### 7 Creation of acceptance, marketing
- Internal communication
- External communication

<table>
<thead>
<tr>
<th>Success factor</th>
<th>Sub-factors</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Co-operation and partnerships</td>
<td>Co-operation with other public authorities</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Partnership with business companies</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Co-operation with associations and initiatives</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Exchange with science and research</td>
<td>C</td>
</tr>
<tr>
<td>9 Sustainable resources</td>
<td>Financing</td>
<td>AA</td>
</tr>
<tr>
<td></td>
<td>Personnel</td>
<td>A</td>
</tr>
</tbody>
</table>
one municipality to another, they are the main guiding and evaluating success factors—in
spite of the individual characteristics they may assume in the respective locations.

The priorities assigned to these success factors and sub-factors (see the overview) aim
to ensure that all of the goals described are achieved to an equal extent. All factors
without exception are important for the implementation of local e-government. But their
respective significance, especially in relation to each other, differs. Experience shows that
A factors (factors with the highest priority—AA—or high priority—A) are indispensable,
B factors (medium priority) are necessary, but they can only develop their effectiveness
in their interaction with other factors. C factors (low priority) are not absolutely
necessary, but they are generally very helpful.

This theoretical concept treats local e-government as an all-round modernization
project, which reflects the way it is designed in the MEDIA@Komm program. This
concept of local e-government is the basis on which national applications are monitored.

Structure of the book

This introduction, which explains the issues, theoretical concepts, methods and working
structures of the international comparative, is followed by seven country reports
presenting the results of case studies in selected local communities.

The reports begin with the five European countries and subsequently deal with the
non-European countries. The authors are responsible for the presentation in their
respective country. As there is a separate volume on questions of the state structure and
the strategies for e-government (Eifert 2004), the authors did not generally offer a
detailed presentation of the respective national framework. There are only explanations in
this area where they are necessary to understand the comments on local e-government.

The country reports are then followed by concluding remarks, which have two
objectives. First, they aim to summarize the country reports against the background of the
issues defined at the beginning of the international comparative project on the methods
and solutions of local e-government. Thereby, national specifics are outlined whereas other factors of variance such as town dimension are neglected.

Second, the concluding remarks aim to reflect on the consequences of the analysis. The main question is: to what degree and under what preconditions is it feasible to organize a transfer of knowledge and experiences from one country to another? To this end, the basic elements of a theory of transfer and adoption of good practices have been compiled.

Notes
1 “The collapse of ideology no longer allows governments to use stock ideological responses to society’s problems. Instead, governments should learn to manage flows of present and past perceptions” (OECD 2000:36).
2 “There is growing discomfort with existing arrangements of government. Citizens demand greater democracy and transparency. Communities seek more autonomy. Business leaders point an accusing finger at the lazy pace of governments. Interest groups are prodigious in showing displeasure with the way governments resolve their disputes and issues. The media are eager to report dissent and nurture mistrust. Lack of effective governance ranks high on the list of major societal concerns” (Carnoeiro 2000:93).
3 Relevant studies such as Malkia et al. (2004) are therefore not discussed here.
4 “45 areas of service were investigated to determine at what level services are offered, or what options for action are available to the user as a result” (Accenture 2001:15).
5 The German Institute for Urban Affairs (Difu) contributed case studies on the three MEDIA@Komm municipalities.
6 However, the factor of legality was not examined in an international comparison because it was integrated into the concept at a later date.

Bibliography


Urban e-government in Finland

Ari-Veikko Anttiroiko

Local government in Finland

Along with the other Nordic countries, Finland ranks among the leading information societies. Since the mid-1990s it has committed itself to information society policy along with measures aimed at improving competitiveness, streamlining public administration and preventing the increase of public expenditure.

Finland is a country in which the role of local government has for a long time been essential to the functioning of society. There are 444 local authorities with considerable political and economic autonomy. In addition, there are some 300 joint municipal authorities.

To show the importance of local government in Finland, suffice it to say that it accounts for nearly two-thirds of all public expenditure, and employs over 410,000 people, which is about 20 per cent of the employed workforce. The local authorities have wide responsibilities in Finnish society, including education, social welfare, health care, and the maintenance of technical infrastructure and services. They also take the main responsibility for local and regional development.

Methodology and selection of cases

In this country description the starting point is that, as we live in a transitional phase of e-government with huge variations among municipalities, the selection of cases cannot meaningfully represent the whole local government. There are a lot of small local authorities that have hardly any activities in this area, whereas some leading cities have already introduced a rather broad set of advanced e-services. Thus, it is a priori clear that most of the small local authorities are not mature enough to be studied.

The detailed case descriptions of this chapter concern larger cities that are also known as the growth centres of the country and also as the most advanced urban e-governments. This group includes the cities of Tampere, Espoo, Helsinki and Oulu. Both Turku and Vantaa could also be included in this category, but the above-mentioned four cases are enough to reveal most of the basic features of the leading big cities. The second category of middle-sized cities will be discussed briefly, for they are not that advanced in terms of
local e-government. These include the cities of Joensuu, Kotka, Lappeenranta and Pori. In Table 2.1 there is a brief introduction to the overall starting points of e-government in case cities, including the maturity of their e-services and e-participation as reported in Ruusula (2001).

**General description and findings**

**Finnish local e-government at a glance**

In 2004 practically all local authorities in Finland had their own home pages. There are only a few small local authorities with only a few hundred inhabitants in the whole country that have not set up their own home pages (Socitm and I&DeA 2002).

The workstation penetration has reached 100 per cent among the staff involved in administrative work and the use of email is practically at the same level. Most of the computers used by employees are connected to the Internet. As to the cost issue, on average ICT (Information and Communication Technology) costs amount to 0.7–1.5 per cent of the total municipal budget.

Agendas and minutes of the highest decision-making bodies, those of the municipal council and municipal board, are available on the Internet in some 60 per cent of municipalities. Also bank transactions between municipalities and banks are handled electronically in all municipalities. On the other hand, there are areas that are not so well developed in local government. For instance, only 3 per cent of municipalities provided services with electronic signature and/or digital certificate in early 2002.

In 2001 a qualitative evaluation of municipalities’ websites was carried out in the JUNA Project. The results were published in the report *Does the Web Serve the Citizen?* (Ruusula 2001). The evaluation showed that the ‘service quality’ of municipal websites was only fair. The best cases were large and medium-sized cities, but there were also some smaller municipalities such as Kiuruvesi or Halikko, both with about 10,000 inhabitants, that were among the best websites. The evaluation showed that the ‘participation quality’ was even lower than that of service quality. In this respect, large cities got the best scores (Ruusula 2001).

**Leading urban e-governments**

It goes without saying that the leading local e-governments can be found in the growth centres and biggest cities of the country. The cities of Helsinki, Espoo, Tampere and Oulu represent these well. The features of the different e-government approaches and models of the leading Finnish cities are summarized in Table 2.2.
Table 2.1 Local authorities discussed in Finland’s case studies

<table>
<thead>
<tr>
<th>Criteria municipality</th>
<th>Population in 2002</th>
<th>Staff 2001 (staff per 1,000 inhabitants)</th>
<th>Annual expenditure (billion euro) 2001</th>
<th>Maturity of e-services in 2001: rank (points)</th>
<th>Maturity of e-participation in 2001: rank (points)</th>
<th>Overall e-government reputation (from + to + + + + +)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helsinki</td>
<td>560,000</td>
<td>37,264 (67)</td>
<td>3.40</td>
<td>1. (7.55)</td>
<td>4. (6.36)</td>
<td>+ + +</td>
</tr>
<tr>
<td>Espoo</td>
<td>217,000</td>
<td>11,872 (55)</td>
<td>0.90</td>
<td>4. (7.41)</td>
<td>5. (6.28)</td>
<td>++++++</td>
</tr>
<tr>
<td>Tampere</td>
<td>200,000</td>
<td>13,617 (69)</td>
<td>1.00</td>
<td>5. (7.32)</td>
<td>1. (6.39)</td>
<td>++++++</td>
</tr>
<tr>
<td>Oulu</td>
<td>123,000</td>
<td>7,674 (62)</td>
<td>0.50</td>
<td>14. (6.96)</td>
<td>1. (6.39)</td>
<td>+++</td>
</tr>
<tr>
<td>Pori</td>
<td>76,000</td>
<td>5,911 (78)</td>
<td>0.40</td>
<td>19. (6.89)</td>
<td>47. (5.50)</td>
<td>+</td>
</tr>
<tr>
<td>Lappeenranta</td>
<td>58,000</td>
<td>3,679 (63)</td>
<td>0.27</td>
<td>30. (6.71)</td>
<td>47. (5.50)</td>
<td>+</td>
</tr>
<tr>
<td>Kotka</td>
<td>56,000</td>
<td>3,665 (67)</td>
<td>0.25</td>
<td>7. (7.25)</td>
<td>47. (5.50)</td>
<td>+ +</td>
</tr>
<tr>
<td>Joensuu</td>
<td>51,000</td>
<td>3,055 (59)</td>
<td>0.21</td>
<td>6. (7.31)</td>
<td>41. (5.61)</td>
<td>+</td>
</tr>
</tbody>
</table>


Table 2.2 Approaches to e-government in leading Finnish high-tech cities

<table>
<thead>
<tr>
<th>Factor</th>
<th>Helsinki</th>
<th>Espo</th>
<th>Tampere</th>
<th>Oulu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus and objectives</td>
<td>Productivity and quality of service</td>
<td>Service and process development</td>
<td>Reorganization and the quality of public service</td>
<td>Easy access to multichannel e-service</td>
</tr>
</tbody>
</table>
The leading Finnish cases of local e-government provide a comprehensive palette of e-services and are rapidly increasing their advanced electronic interactions and transactions. In the early 2000s all the advanced applications were rather new and few in number. The number of users of these services is still rather low, compared with those who use online general information services, library services or transport information services. Service and participatory aspects are presented in Table 2.3.

In the leading Finnish cities both administrative and service processes are still based on more or less conventional work patterns and procedures, even though the introduction of ICTs is gradually transforming their organizations. These changes are visible in such areas as document management, internal communication, and administrative procedures. Service processes are also changing slightly due to the adoption of new applications and channels. In the area of e-democracy Finnish cities have not yet achieved any profound transformation. Yet, such applications as feedback systems, citizen consultations, direct access to administration via email, discussion forums and activities of community and residential area networks indicate that a silent revolution may be on its way.

**Middle-sized cities of Finland**

In most of the Finnish middle-sized cities, approaches to e-government have been based on a low-profile policy. One of the reasons has been the severe economic situation since the early 1990s, which has forced cities to tighten budgetary control and streamline both services and organizations.

Even though the ICTs have been utilized in administration for decades, strategic views on e-government have been taken since the year 2000. At this stage of development the objectives of e-government activities, when explicated, are of a rather general nature. In general, most of the middle-sized cities—such as Joensuu, Kotka, Lappeenranta, and Pori—have a

**Table 2.3 PCs, IT costs and IT staff in large cities in Finland**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Helsinki</th>
<th>Espoo</th>
<th>Tampere</th>
<th>Oulu</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCs/staff (approx.)</td>
<td>16,000 PCs (+10,000 in schools)/ 40,000 employees (40%)</td>
<td>5,500 PCs (excl. schools)/ 13,000 employees (42%)</td>
<td>3,000 PCs (excl. schools)/ 12,000 employees (25%)</td>
<td>2,500 PCs (excl. schools)/ 8,500 employees (29%)</td>
</tr>
<tr>
<td>Overall IT costs (approx.), million euro</td>
<td>60</td>
<td>33</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>IT staff (approx.)</td>
<td>300</td>
<td>110</td>
<td>150</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: own presentation.
more or less practical and incremental orientation towards the development of e-government.

These cities provide a kind of basic package of e-government services, of which the information services of various kinds are the most important, including basic information, contact information, agendas, minutes, etc. As in the case of larger cities, also libraries, maps, event calendars and other conventional e-services are rather popular, but variations between cities are significant.

Case study on Finnish local e-government

Points of departure on developing local e-government

Finnish municipalities have been influenced basically by similar kinds of dynamics and institutional environments, but for understandable reasons their responses to the challenge of the information society have varied considerably. In any case, a need for reorganizing public administration due to such contextual changes as the information society development is widely shared. It took roughly ten years to achieve a full web presence in local government. Awareness started to increase dramatically from the mid-1990s. The golden year of comprehensive e-government strategies seemed to be the turn of the century, i.e. the year 2000, when municipalities published or started to prepare their broader e-government strategies or related policies.

Tampere

Tampere started to develop e-government on the basis of global, European, national and local impulses. In general, information society was a dominant discourse in Finland in the latter half of the 1990s, and the national government launched many ambitious policy lines and measures. These all affected Tampere in various ways.

Steps that led to concrete development actions in the area of e-government were taken in the mid-1990s. The city established its first website on the Internet in 1995 (a test version was set up in 1994). These activities were developed within the Service Information System Project, which lasted from 1994 until 1998. At a political and strategic level this development was continued in the city strategy of 1997 entitled Information is the Key to the Future (Tampereen tulevaisuus on tiedossa). The next and so far most important step was the launch of the eTampere program for 2001–05.

The philosophy of the city of Tampere is to achieve improvements in the quality of public services, which means that the main goal of e-government activities is not to reduce costs but to guarantee quality service. The overall idea is that in this transitional phase costs may be high, but in the long run, due to reorganization and increased use of e-services, these efforts will bring about efficiency and cost savings.

Espoo

Even though the city of Espoo has for years been in the forefront of local information society development, it formulated its first comprehensive information society strategy
only in 1999. Since then electronic public services and e-government have been a strategic part of the development agenda of the city. Another sign of this new phase of development was that in 2000 the city’s information management strategy was updated. On this basis a city-wide strategic Espoo E-service Project for 2001–2003 was initiated. The CEO signed the document establishing the project in May 2000.

At the same time the city government started to search for a strategic partner with whom to develop e-services and e-government. As a result of a tender at the end of 2000 this strategic partner came to be TietoEnator Corporation. The first phase of the project at the turn of 2000–01 was an e-service strategy designed to frame the development actions of the city. This strategy was integrated in 2002 into the general strategy of the city with annual objective areas.

The activities of the city are based on a vision with the four-fold objective areas of service development, networking, civic participation, and governance. Espoo has committed itself to specific values that revolve around customer-centricity. Another characteristic feature of Espoo’s style in developing e-government is that special attention is paid to product and service development. This reveals a professional, proactive and business-oriented approach within the city government to e-government issues.

The city of Espoo has a number of ongoing e-government projects in various service sectors. From the viewpoint of the e-Service project, the top projects include e-procurement, e-recruitment, e-learning, and interactive planning projects.

**Helsinki**

The development of e-government in the city of Helsinki dates back to the 1950s, but the turning point in this field took place in Helsinki as well as in other major cities of developed countries in the 1990s after the development of open networks and services based on www technologies. In this respect the first generation of electronic services provided by the city of Helsinki emerged around 1995 and 1996 in the form of www sites providing basic information about the activities of the city. From the beginning the contact information of the chief editor (or webmaster) was available, which made it possible for users to give feedback on the functionality of the web pages, content of the information and the activities of the city. It must be borne in mind that the number of users was very low at that time.

The second phase in the development of e-government in Helsinki, which gathered momentum in the last years of the 1990s, was characterized by the development of the information technology infrastructure with a view to electronic service provision and interaction with citizens. Moreover, the new websites of various departments and units of the city were established and the number of e-government projects grew.

The third phase of e-government development in Helsinki became a reality around 2001–02, which is the period when the role of ICTs in streamlining and reorganizing administrative, service and democratic processes became the core of the e-government agenda. In the next, forth-coming, development phase these internal systems and all the electronic service processes in which the city administration interacts with citizens, customers and stakeholders will be integrated.
In the present state of development electronic services are understood to provide supplementary channels for service delivery and in some cases to replace the traditional service systems.

Oulu

The Internet revolution came early to Oulu. In 1994 it was national news that the city of Oulu was the first city in Finland to set up its own server and own www sites connected to the Internet in August-September. Around the same time the cities of Tampere, Helsinki and Turku and some smaller cities also created their own websites.

The first e-strategy of the city of Oulu was drafted as a pilot project within the nationally coordinated Development Project for e-Government 1999–2001 (abbreviated to JUNA). It was based on the BSC method and approved by the city council in 2001. At the same time an overall vision and strategy for the city was formulated along the same lines. These two strategies are mutually supportive. The latest umbrella projects include an EU project known as the Information Society City Oulu program (Tietoyhteiskuntakaupunki Oulu) for 2002–04, which aims at promoting and coordinating the IS development within the city of Oulu, and also the Oulu Growth Agreement 2006, which is an ambitious high-tech development program. In the field of e-government a major project is the Net Services Development Project for 2002–04.

In developing its e-services the city of Oulu has piloted various electronic forms using different user identification systems and utilizing existing back office systems in both customer service processes and in further processing of information. The city concentrates on those services in which volumes are high and the benefits of rationalization are expected to be most significant. In each pilot case, accurate process descriptions of both existing and reorganized e-service processes are produced. An important area in which the city is active is the mobile services which are developed in collaboration with Nokia, Oulun Puhelin (‘Oulu Telephone’, a local teleoperator), the University of Oulu and Oulu Polytechnic.

Middle-sized cities

Even though some of the middle-sized cities set up their first websites around the mid-1990s, their strategic views on e-government have become recognized mostly since the year 2000. For example, this development started very early in the city of Joensuu, in the first half of 1990s, when the minutes started to be published on the web. Yet, these actions were more like individual experiments that were taken without a broader strategic view of how ICTs could help in reshaping local government.

As in most of the other cities, Kotka has developed its IT-based practices for years. Yet, a separate project for developing electronic services was set up only in 2000. The basic motive behind this project was to improve customer service, to increase efficiency in administration and to gain cost savings from more cost-effective uses of man power. The result of a working group on the development of electronic services was published in March 2002 with the title ‘Verkkopalvelu’ (Web Service—A report on promoting electronic transaction in the administration and service provision of the City of Kotka, March 21, 2002). It is suggested in this Web Service report that the city needs to draft a
separate web service and information security strategy as a part of its information
administration strategy.

In Lappeenranta, e-government emerged as an important development area in the city
strategy for the year 2000. The City Strategy 2000 says that the city of Lappeenranta aims
to utilize as efficiently as possibly the opportunities of the information society and to
meet the challenges brought by it. The city needs to take a leading role in South Karelia
in the development of electronic services for citizens. At the moment the actual
development is directed to the development of websites.

The city of Pori opened its home page in 1995. This was mainly because ‘dynamic’
cities were expected to introduce the latest technological tools and utilize them in taking
care of their basic functions. In early 1996 the municipal board decided to deliver its
agenda in advance to the local media which expanded to other representative bodies as
well, the city council included. Also local regulations and other information were
published on the web as soon as the capabilities of the city improved. In 1997–98 the
websites of the city were renewed, and feedback systems were developed. At that time
also a kind of ‘marketplace for questions’ (Kysymystori) was introduced. The city had
also a discussion forum in 2000, but as it served only the rather closed discussions of a
very few active citizens; it was terminated and, in fact, moved to the website of the local
radio.

The development in Pori was initially based on the idea that the Internet as a new tool
can be used to disseminate information on municipal matters. The idea of e-government
was included in the city strategy of Pori for 1997 and later in the one for 2001. It is also
mentioned in the sectoral strategies of the city administration. Objectives operate at a
rather general level in all these documents, though. In line with this, there are no special
‘spearhead projects’ on e-government. Rather, in Pori, e-government is developed in a
practical way and on the basis of real needs taking at the same time both resources and
efficiency into account.

Profiles of the local e-government projects

Visions and strategies

Visions and strategies on urban e-government are rather recent phenomena and they
operate at a rather general level. Thus, their actual usability in guiding concrete actions
remains to be seen. Yet, in many cases, strategy processes have been good learning
processes and they have also helped to integrate e-government activities into broader
urban development policies, as has been the case in Oulu. E-government strategy
processes are a chance for networking and partnerships (e.g. Tampere and Espoo),
integrating strategies and recognizing the need for change (e.g. Oulu) and identifying
bottlenecks (e.g. Helsinki). In most of the smaller cities, e-government strategies are to be
determined in the future. Also the lack of resources has forced them to keep a lower
profile and to adapt a more pragmatic approach.
**Tampere**

Tampere’s development policies are guided by both the eTampere program for 2001–05 and the general city strategy *Working Towards Excellence* launched in October 2001. They formed the overall framework for the development activities of the city for the 2000s. One of the core objectives combining both city strategy and the eTampere program is to develop Tampere as the leading developer and applier of the information society. It contains six independently operating sub-programs, of which the Infocity has the closest connection to e-government. Such sub-programs as the Information Society Institute (ISI), the Research and Evaluation Laboratory (RELab) and the e-Business Research Center (eBRC) also deal with issues related to e-government.

The eTampere program is a kind of ‘mega project’ or umbrella project that provides a general framework for the e-government development activities. Other key projects of the city of Tampere include official electronic transaction, e-participation, multi-purpose smart card, and e-library services.

E-government has been among the cornerstones of the city strategies and IS development activities from the very beginning. This is due to the fact that the range of services provided by the city is huge, and as the volumes are high, e-government may bring real benefits in the form of improved quality and increased efficiency, and in the long run also that of cost savings. Even if the reorganization and restructuring are not systematically planned and scheduled, they are seen as the inherent long-term goal of the entire e-government development process. In 2001 the city established a new Service Procurement Committee to take new service delivery systems, including e-government, under consideration.

**Espoo**

Unlike many other city-led e-government development projects, the Espoo e-service project is not based on any strategic or functional employment or educational policies and goals (cf. eTampere). These policies have their place in the Espoo e-service project, of course, but the activities of the city are based on a vision with the following four-fold objective areas:

1. developing the services and products provided by the city
2. networking
3. citizen participation
4. developing internal steering and governance.

Espoo has committed itself to specific *values* which underlie its visions and objective areas. The core values of the city revolve around customer-centricity.

The e-Service strategy has been integrated into the general strategy process and also into the general service strategy of the city. Yet, at the same time, the special role reserved for e-services and e-government is needed in the early phase of the development in order to be open to new ways of thinking and to make way for innovation.

Work in this field has been designed to help to reorganize municipal service delivery and work processes. None of the e-processes has been redesigned by merely adding the
new electronic media to the existing processes, but rather every function has been adjusted to a new channel and evaluated on the basis of the opportunities of the new ICTs. For example, in 2002 there were 25 separate e-service projects, in which all the administrative, support and service processes were assessed and developed. For this purpose the city with its strategic partner TietoEnator has built up a model for streamlining the service and production processes. As a part of this process in 2002 e-procurement, e-recruitment, and e-learning processes were scrutinized—also without the ‘e’ aspect—and analysed systematically, with the help of simulation among other methods, with a view to developing these processes thoroughly.

Helsinki

In September 2003 the city of Helsinki finalized its e-service strategy The Framework Program for the Development of Web Services of the City of Helsinki 2003–2006 with a view to integrating e-services into all municipal activities. Key areas in this task include education, health care and influencing and following decision-making. In line with this, special attention has been paid to developing the information infrastructure and basic systems, and improving the performance of educational, social welfare and health care services. The city aims to digitize the internal administration so that all administrative tasks can be performed in the information network.

The vision of the city of Helsinki emphasizes an increase in productivity and improvements in services with the help of ICTs. It includes the following overall objectives.

• Helsinki is in the forefront of European information society in the diversity and quality of services, productivity of operations, know-how of citizens and the city government and electronic democracy.
• A customer may get the services via a digital channel more easily, with higher quality and with lower costs.
• ICTs have a strategic role in developing and delivering services and also as a means for the interaction between the city administration, political representatives, citizens and collaborators. The objectives of increasing productivity mean continuous and simultaneous development of the ways of working, organizational structures, administrative and governance processes and technologies.
• It is important to keep the city’s capacity at a level that matches the requirements of the present developments, which is seen to pose special challenges to managerial capabilities, know-how of the staff, reliability of information systems and achieving adequate data security.

Oulu

The first e-strategy for the city of Oulu was approved by the city council in 2001. At the same time an overall vision and strategy for the city was formulated. According to Oulu’s strategy the city aims at being an engine in creating new administrative and service culture nationally and in Northern Finland in particular. The web service vision of the city of Oulu highlights the following points.
1 Oulu is a pioneer in implementing and utilizing customer-centric, innovative and network-based web services.
2 Web services are to strengthen the competitiveness of Northern Finland.
3 Web service users form interactive communities which promote know-how and affect the development of services and the city.
4 Political decision-makers, top managers and staff commit themselves to the change of work and administrative culture.

In the strategic view to e-government the development of services and service processes are emphasized, which aim at good customer service and high organizational capacity, efficiency in the use of resources and societal effectiveness (Ojala 2002).

**Middle-sized cities**

Most of the middle-sized cities have developed e-government on a rather practical basis. However, their understanding of the relevance of e-government has increased and since 2000 many of them are in the process of producing visions and strategies for e-government. In the case of middle-sized cities, the city of Kotka has been the only one of selected cases that has produced a policy document that contains the vision for the city. The aim of Kotka’s involvement in developing e-government, as documented in its ‘Web Service’ report, is to fully utilize the potential of ICTs. The organization needs to have prerequisites for taking care of all transactions and communication electronically and also to get the whole urban community wired. The central objective of e-services is to increase the quality of customer service and, simultaneously, to increase the efficiency and cost-effectiveness of city administration and service provision. Another important goal is to increase self-service in the use of municipal services, even though traditional face-to-face and paper-based modes of transactions will be maintained.

**Organization and political support**

Finnish municipalities are multi-purpose organizations. This affects the development of e-government. In most cases the responsibility in developing e-government is entrusted to the units of the line organization, which then extend their activities by utilizing project management tools. Political and key allocation decisions are taken by the city council and in some cases by the city board, whereas managerial and administrative functions are taken care of by administrative machinery led by a Municipal Manager (or a CEO).

As to the largest cities, they have a huge administrative machinery that can take care of ‘internal’ large-scale projects. Helsinki relies strongly on a conventional line organization with some large-scale projects and partnerships. Tampere has developed a kind of mix of line and project organizations in the case of eTampere, which is coordinated by the city and based on management by contract. This is slightly different from the basic model applied in Espoo, which tries to utilize the best possible expertise and achieve considerable transformation within a few years. Espoo’s model is a contractual partnership model characterized by a professional project management approach.
Tampere

The developments in Tampere are the results of various institutional actors, such as the city of Tampere, the regional council, the universities and other educational institutions, various research centres, leading IT firms, etc. As the role of the city government has been decisive in this whole process, there is a need to emphasize the role of the City Manager, Jarmo Rantanen, who has succeeded in ensuring that key ideas have become integral parts of city strategy and in committing both the political elite and administrative machinery to these development efforts. The eTampere office is led by Professor Jarmo Viteli, and the Infocity program is led by the Communications Director, Jari Seppälä.

Political leadership is vested in the city council, but in practical matters the city board, City Manager and each committee have their roles in managing e-government. In general, politicians have committed to the eTampere program and e-government development, which guarantees predictability, continuation and availability of necessary financial resources.

General administrative responsibility in the e-government activities of the city is in the Communications Unit with a full-time Internet chief editor. The Management Group of Information Management follows the development and ties online services to back office operations while the Information Technology Center takes care of the implementation of certain solutions when ordered by the organs of the city government. In the various service branches there are five secretaries for Internet communications. They work in central administration, the municipal enterprise unit and the departments of education, social and health care and technical services. Organization of e-government activities of the city of Tampere is outlined in Figure 2.1.

The city of Tampere takes care of service provision and development activities increasingly along with other local actors. Especially in the area of citizen participation and involvement, mention should be made of the University of Tampere and a network of communities known as Mansetori. In individual projects, and development and service areas, the city has cooperated with such local and regional actors as Tampere University of Technology, VTT Automation (local branch of the VTT Technical Research Center of Finland), Technology Center Hermia, the Council for Tampere Region, and the hospital district of the Tampere region. In the corporate sector, teleoperators (such as Soon Communications and Sonera) and especially a public-private partnership-based Media Tampere Ltd are worth mentioning. At national level key partners have been the
As to motivational and related obstacles at local level, in spite of the commitment to local information society strategy, political leaders and top management have been afraid of the increase in costs of e-government activities. In addition, politicians may also have reservations concerning applying new forms of direct democracy, as they may fear losing some of their political power. As to the staff in general, new developments in e-government are expected to increase workload and cause ample and uncontrolled communications and interactions.
Espoo

The e-projects are based on the strategic guidelines approved by the highest political bodies of the city. Political leaders actively follow the development of the process. All the main service sectors and municipal corporations are involved in the process. Yet, the management of e-government activities is streamlined, for the e-projects of the city are managed and coordinated by the e-Service project with a full-time project manager, Simo Reipas, plus four other full-time employees. Managerial responsibility rests with the Management Group, chaired by the chief of city administration, Helena Elkala. Moreover, the strategic partnership between the city and TietoEnator is steered by the Cooperation Group, chaired by Marketta Kokkonen, the CEO of the city, and having members such as the leading sector managers of the city and the CEO of TietoEnator. The project drafts a report for the city council and the city board four times a year regarding achievements and realization of objectives.

In the city itself both political leaders and administrative managers are committed to local e-government. Differences in knowledge and competence among managers may pose challenges, but do not cause a real problem. Instead, problems may arise among the staff in that the average age of employees is rather high, and some of them may be apprehensive regarding e-enabled changes. Basic skills and competencies and the level of knowledge also vary greatly. However, in general, the staff understand the necessity to adjust to the e-government trend.

Helsinki

Political leaders and line management are organized according to the conventional municipal organization. Decisions about the main policy lines and strategic actions come from the political representatives in the city council and city board. Within the administrative organization, key actors are the departments and various units each having their own line management and communications and information management units/persons in charge. A special role is vested in the central government of the city, and the IT department and communications department in particular. There is also an IT Strategy Management Group, which steers these activities at city level. Most of the development activities are organized as joint projects and their management is based on project organizations.

Oulu

At the highest political level the city council decides about the e-government development strategies and policy lines. As an executive body the city board approves the individual project plans. As a rule e-government activities are organized so that each project has a separate project organization. All relevant service sectors and/or departments of the city administration are represented in these organizations. Overall responsibility for e-government projects resides in the planning service unit of the central office of the city. A key coordinating role is played by the Development Manager, Katriina Puhakka.
In spite of the progressive and innovative approach of the city of Oulu, there are also problems that must be surmounted when developing e-government. They include: the fragmentary nature of information systems within the city; rules of play at municipal level, which are not always clear enough; and the high costs of development of e-government.

On the positive side of the e-government process is that the city government is firmly committed and highly motivated as well as competent in creating strategies, but at the same time at the practical level these development processes are very laborious and time-consuming and also require a lot of resources.

**Middle-sized cities**

As to the organization of e-government activities, middle-sized cities rely strongly on a city’s line organization. The key role is often vested in the management group of top managers and in such units as the central office and IT department.

In Kotka the development of electronic services is organized within the city’s line organization. The actual work is organized within the Management Group of Information Management, with representatives from all service sectors. The top administrative management of the city is very committed to this development process.

In Lappeenranta the managerial group of top managers is committed to developing e-government. The central office of the city is responsible for coordinating the e-government development activities. The service branches have their decentralized responsibilities in developing and maintaining their own services. This represents a conventional organization of e-government activities in middle-sized cities in Finland.

In the city of Pori there is full support from both political and administrative top management. Overall policy lines have been stated in strategies at different administrative levels, and in introducing individual projects detailed decisions are taken if needed. The IT manager has fairly wide authority to decide about basic policy lines. Matters are presented to the municipal board when necessary, such as when renewing the city’s websites or when there are changes in the ways agendas and minutes of the municipal bodies are presented on the web. The Department of Information Management has centralized responsibility for securing the technical preconditions and feeds administrations with information concerning alternatives in programs and applications. The central administrative office of the city and the IT department, together with the departments of different service sectors, provide sufficient information system services to the city administrations.

**E-service and e-participation applications**

Popular e-services in larger cities include e-library services, e-maps, transportation (schedules in particular), event calendar and certain information services (bulletins, service directories, etc.). Larger cities have also piloted various advanced e-services. Middle-sized cities have a more modest range of e-services and they stick mainly to conventional information and interactive services. Reorganization, which is one of the future challenges of local e-government solutions, is to a large extent non-existent. There are some ambitious reorganization processes in the making, as in the case of Espoo, and
some special areas in which e-tools are utilized, such as streamlined customer services (Tampere), the impact of the use of emails on work processes (Kotka) and reorganized and rationalized purchasing activities (Pori). What seems obvious is that the potential for reorganizing local government with the help of ICTs seems to be only modestly utilized.

**Tampere**

The most popular electronic services provided by the city of Tampere are those that are closely connected to everyday life of citizens. These services include:

- library transaction services
- bus schedule information
- maps and city planning
- event calendar (tourism, culture, etc.)
- agendas and minutes of meetings of municipal bodies.

Genuine electronic transactional services include library services, certain services of Tampere Power Utility (energy supply), house hunting, making and following initiatives, course registrations and premises reservations. To some extent the e-Citizen Booth with interactive Q&A service can also be included in this group of services.

E-government has improved access to information and services. It has also provided new opportunities to increase self-service as well as the speed of administrative processes. In certain service areas, service processes have become more streamlined, and because of self-service and electronic communication, service processes have become faster (see Anttiroiko 2004).

Public access to electronic services is organized via public access points which the city puts at citizens’ disposal free of charge. There is also access via the SMS of mobile phones, WAP services and prerecorded telephone services.

In addition to the conventional offices there are various one-stop solutions that provide services to the citizens. They include:

- a City Information Point at the city hall, where a wide range of information is available and where a networked computer is at citizens’ disposal
- technical and environmental services in Frenckell Service Point (its virtual counterpart is the WWW Service Point of Technical and Environmental Affairs)
- a cultural service information point and tourist service point at the city centre
- the Vuoltsu Information and Service Center for the Young (in the same complex there is the net café Vuoltsu, open to anyone needing to use networked computers)
- a special joint service point for the long-term unemployed, established by the city of Tampere, the National Pensions Institute and the local employment office at the Tullintori commercial centre
- the Refugee Reception Center also serves as a public information centre and provides web connections free of charge.

The city has concentrated on developing a comprehensive and well-functioning website, which serves as the local portal for municipal services.

Digital signature is in use in Tampere. It is based on the national electronic identification card (known in Finland as HST-kortti). The construction of this new system
of personal identification took some two years and it started to operate in early 2002. This system makes it possible to send initiatives, complaints, job applications or other documents to the city administration, officially signed, and to monitor their processing electronically. The main practical problem in introducing this system is the small number of electronic identity cards and card readers.

Espoo

Among information services, the city’s announcements and bulletins are popular. They are available on the website, and can also be ordered directly from the Internet. In the area of communication services the electronic feedback channel in the city’s home page is an important application: the number of feedback contacts concerning the operations of the city is as high as some 300 per month. The city has created a Service Charter according to which it tries to answer inquiries and questions within seven days. As to interaction and transaction services, among the most popular applications are online medical appointments. This system is in use only in the area of the health care centre of Kalajärvi. Another well-developed service is the electronic reservation of moorings for boats.

Electronic tools are utilized effectively in the management of the city. Document management and related procedures have been online since 1999. The steering and follow-up of the strategic projects of the city take place on the net with the help of a so-called project portfolio application. The city management has an intranet at its disposal. It provides financial and other reports and analyses, and activity reports for operative management. The city is also constructing a centralized CRM solution and has established a knowledge management project.

In addition to basic workstations and public access points there are info kiosks and some special equipment for special groups, such as visually impaired people.

There is also a joint call centre for social and health care services. It is planned to be extended to cover all municipal services.

The city has a city-wide intranet, extranet service for members of the political bodies, separate extranet for teachers and another extranet on tourism for service providers and customers. An extranet will also be set up for local residential associations and for state local administrations (administrative court and police). E-procurement will also have its own extranet. These all have a common platform, whereas their logical infrastructures are differentiated.

Digital signature is not in use in the city of Espoo. Yet, even at the present time, it is possible for everyone to initiate proceedings with the city without a digital signature.

E-invoice is in use in the city of Espoo. E-payment was introduced at the end of 2002 to be applied in paying rents for premises and real estate services, people’s college courses, private boat-mooring reservations, etc. Fines of the joint municipal library system of the capital region can also be paid electronically.
**Helsinki**

The most important electronic services of the city of Helsinki are the following:

- library services
- map applications
- schedules of city transport
- service directory
- event calendar
- services for the young.

ICTs have an increasing role in helping the reorganization and streamlining of municipal activities. The internal processes of the city organization (e.g. document administration) have become more efficient. Internal efficiency in service processes has increased owing to internal information systems, which are widely used, especially in social welfare and health care. The quality and efficiency of library services and city transport have also increased since the introduction of web-based information and service systems.

The municipal e-services can be accessed through various channels:

- public workstations are available free of charge in public libraries
- a service directory is also accessible by GSM/WAP phone
- one-time use tickets for public transport can be paid for by mobile phone
- customer terminals are available in city customer service points
- contact centres are in the making.

Portal solutions for the city include conventional city portal and www sites at http://www.hel.fi/ and a joint portal together with the University of Helsinki at http://www.helsinki.fi/. Services are offered for specific service groups, e.g. the young, senior citizens, disabled people and immigrants.

Digital signature is not in use in the electronic services of the city of Helsinki. However, this digital certification system will be introduced in due course in those services in which it is expected to be beneficial and to bring true added value for electronic transactions.

**Oulu**

The most popular electronic services are various information services provided on the city’s web page. The city provides services in different service sectors, such as library services, transport and maps, culture and leisure and many others. It also provides some advanced transaction services and various discussion forums.

There are two one-stop shops or joint service points in Oulu. In one of them, the Neuvokas of the Technical Department, smart-card services are also available. Oulu introduced a city card in 2000, which is a multipurpose smart card for citizens. Its services include meal services, exercise services, library services and transportation services for the handicapped. The card also includes a mass transportation application, which has been in place since 2002.
Public access terminals are available at joint service points, in libraries, in community centres and in youth club premises.

There are no genuine portal services available, but city websites and the site of the city library in particular provide a wide range of services, including mobile services.

Oulu Energy and Oulu Water have online services for providing information about energy and water consumption. Oulu Energy, a company owned by the city, has developed a service for handling payments online.

In service processes, electronic signature is not in use. There have been various pilots on electronic signature, email encryption, protection of www sites, log-in to the Internet and online services.

Middle-sized cities

Most of the middle-sized cities provide only basic services. Both Joensuu and Lappeenranta are good examples. For example, the websites of the city of Joensuu include mainly information services, such as contact information and minutes of meetings. The development of electronic transaction services is in progress but it is likely to take years until they are in place. Similarly, there are no advanced electronic services available that require digital signature or e-payment. As regards to Lappeenranta, the most popular web services include maps, libraries, and an event calendar. Personal identification cards (HST-kortti) are in use in e-petitioning, among others.

Kotka has also developed rather conventional websites. Invoices are processed electronically (RONDO system). There is also under discussion an introduction of mobile services in parking services. In all, the city has developed its websites with rather scarce resources. Yet, as an additional element, it has set up several information kiosks (info kiosks) as an access solution. Info kiosks have provided all citizens with opportunities to follow the activities of the city and also to submit initiatives to the city administration.

In Pori the virtual library is clearly the most popular of the city’s websites. Actual electronic interactive and transactional services haven’t yet been introduced. E-services that have proved to be relevant are agendas and minutes, a Q&A site (Kysymystori), and an event calendar. Other aspects of e-service include the following:

• The Procurement Office has used e-tendering since 1997, which means that all the tenders have been available on the web and that offers have also been able to be sent via the Internet.
• The Pori Energy has some electronic forms available.
• Digital signature (a kind of security e-post solution) has been tested, for example, in schools within the national Macro Pilot project.
• In the area of procurement, regional cooperation has increased functionally and quantitatively without increases in the number of staff, which is due to the utilization of web-based solutions within administrations.

Reorganization is going forward step by step in the cities of this size category. In Joensuu there has been no reorganization in which ICTs have played a role, and the same is true with Lappeenranta. Both Kotka and Pori have recognized some small changes in selected areas. Work methods in the city of Kotka have already changed with the introduction of email. There are also joint virtual desktops, etc. In addition, on the basis of its municipal
strategy, the city planned to reorganize itself on a more customer-centred basis by the end of 2003. In that process also electronic services needed to be designed so that they fit in the best possible way to customers’ and customer groups’ actual situations and their ways of doing things. In Pori, ways of working have changed, especially in the purchasing activity area, for the city has participated since the fall of 2002 in the ‘Ostonet’ procurement system. Orders come electronically directly to the deliverer, which makes comprehensive real-time follow-up possible. This was a project in which all the relevant employees were involved in building a new operational system for themselves and in rationalizing their own work procedures.

**Technology**

In the largest cities the ratio of PCs to staff is somewhere around 0.25–0.42 (excluding schools). The situation is close to this also in smaller cities. In practice all those doing administrative work have workstations at their disposal. As to email, a rule is that everyone who needs to use email in his or her work, has an individual email address.

In Tampere and Oulu a special KuntaToimisto information management system is in use. In all larger and middle-sized cities MS Office package serves as the standard desktop application.

TCP/IP is the standard communications protocol for Internet connections in all municipalities. Cities have firewalls in use and effective virus protection solutions.

**Tampere**

In the city administration there are some 3,000 PCs (excluding those in schools) and the number of permanent staff at the end of 2001 was around 12,000. This means that there are about 0.25 computers per city employee.

All the workstations are connected to the open network, which means that all those who work in the administrative branch have connections to the Internet and the intranet. There are about 6,700 email addresses in the city administration, which implies that practically all administrators can be reached via email.

ICTs are utilized in various ways in organizing procedures and work flows.

- Document management is based on the KuntaToimisto (Municipal Office) solution, which provides a full-range document management system.
- TeamWare: emails, schedules, and forums or eBBS for teams are used to varying extents. There are no city-wide groupware or other solutions in use at the moment (in 2004).
- Software for workstations and file/document formats are standardized in order to guarantee city-wide interoperability.

The main protocol of the data communication network of the city is TCP/IP. Network technologies used include such access methods as Gigabit, ATM, FDDI and Ethernet.

Data security issues are seen to be of vital importance in the development of e-government. The city of Tampere has put effort into solving the most critical security issues. The digital signature system is based on an electronic identification card, and its use is secured according to the standards of the national electronic transaction system.
The city of Tampere also has its own e-payment system which has so far proved to be secure enough. Security standards and protocols are: SecGo CryptoIP in distant connections, SSL in www connections, StoneGate as a firewall solution, and F-Secure as virus prevention software.

In the city there are about 150,000 smart cards in use in local transportation and public swimming baths. This solution will be extended to hybrid or dual interface cards, which will also be applicable to other payments and electronic transactions.

Espoo

There are some 5,500 workstations (excluding those in schools) for some 13,000 employees of the city. The number of computers is increasing rapidly, by about 1,500 computers per year. Each workstation is equipped with MS Office and IE browsers and with sufficient virus protection solutions.

Each workstation has an Internet connection. The city has its own internal network carried by optical fibre cable. All the computers available at the public access points have Internet connections. Internet services used by the city are bought from an Internet service provider.

Each employee in the administrative branch and also most of the other staff have email addresses (firstname.familynam@espoo.fi). The Central Registration Office of the city has its own general address.

Electronic record is in use. A new comprehensive documentation and archive system is at the design stage. Thus far administrative branches have used separate solutions.

Electronic work processes are managed with the help of project management tools (project portfolio and project web) common to the entire city organization.

Data transfer between departments is a common practice. Many administrative and service matters require inter-departmental action, and nowadays this also works well in electronic form. The only conceivable problems which may arise are when some units or officials use older computer systems or software.

Data and information security issues are seen as vital for the development of e-government. The basic policies and solutions in this area are designed centrally by the Information Administration Management Group.

Helsinki

In the city of Helsinki there are some 16,000 PCs and some 40,000 employees in all. The schools have about 10,000 PCs which are not included in the figure above.

Each worker has access to the city intranet and to Internet. In principle, everyone who needs an email address has it. Moreover, there are several collective customer service email boxes.

PCs and servers are connected to a city-wide trunk network (optical fibre, 1Gb/100Mb Ethernet). Through this network there is a connection to the joint services of the city, to the service centres used by the city, and also to the Internet and external cooperation partners. The network is protected by the firewall and user identification for ‘from outside in’ connections.
There is a document and procedure management application in use which includes a document archive designed for internal use. In 2002 the city established a city-wide document management system introduction project. This system was launched 2002–04 enabling extensive internal and external use of documents and archives.

Data security and protection is important in the future, e.g. in such service sectors as health care and educational services. The city of Helsinki relies on tailored solutions. User identification needs to be developed in certain service processes. Strong identification will be developed in those services in which it is found to be necessary. There is, however, a wide variety of electronic services in which encryption and strong identification are not necessarily required.

Software, standards and protocols used in the city of Helsinki include MS Office, AD directory service (comes with Windows) and LDAP protocol to access directory listings, XML standard for describing data elements on www sites and B2B documents, and TCP/IP as the communications protocol for the Internet connections.

Oulu

In the city of Oulu there are about 2,500 PCs (excluding those in schools) for about 8,500 employees. Thus, almost 30 per cent of employees have a PC at their disposal.

Every employee has access to the Internet. Almost all employees also have email addresses (firstname.familyname@ouka.fi). The email server of the city is Exchange. Two intranet solutions are in use in the city administration.

The information management system KuntaToimisto (Municipal Office) is in use. This application is used throughout the organization, as is MS Office. As to electronic documents such as PDF and HTML, forms based on XML standard are in the making.

Conventional IP-based solutions are used in Internet connections. Thus, the city has TCP/IP network solutions to which computers and servers with different operating systems are connected. The domain name control system is NT domain. The servers that are used in electronic transactions are based on UNIX, Windows and Linux operating systems. The development of transaction services relies mainly on .NET solutions (Microsoft’s framework for web-based services and component software) and programming tools that are interoperable with the MS Windows platform. The development of tools based on open source codes are also actively followed.

The development of data and information security is essential to the development of e-government. This is an area that will need more attention in the near future as the emphasis shifts towards transaction services. The city’s firewall solution is Check Point FW. Virus protection software is in use throughout the city information network. The city has also piloted the use of an electronic ID card as the method of identification alongside the conventional user name/password system.

About 5,000 inhabitants have city cards. There are some 40 city card readers available at various service points of the city.

Middle-sized cities

In Joensuu there are about 800 networked computers for some 3,500 employees. As in other Finnish cities, in practice all the officials who need to be contacted via email have
email addresses. There are several applications and programs in use, up to some 100 different solutions. In the network conventional TCP/IP solutions are in use.

In Kotka there are some 1,200 computers in the administration and some 1,000 more for educational purposes. There are about 2,500 email addresses in the city administration. The number of permanent staff is about 2,900 and the total number, which includes periodic and part-time workers, is about 3,800. The operating system in use in the city administration is WinNT. Local area network solutions are based on VLAN Ethernet 1GB and VPN in distant connections. The communications protocol applied is TCP/IP. There is also a firewall system in use and a centralized virus protection solution. Administrations’ desktop applications are based on MS Office, with various applications for financial and personnel management and systems for the technical sector, social services and health care and education.

In Lappeenranta there are 1,200 PCs per 3,800 employees. Practically every administrative official can be reached via email. Web server software is based on Microsoft Internet Information Services (IIS). For external connections TCP/IP protocol is in use. The city has also an information security standard.

In Pori there are some 1,800 email addresses, including some joint addresses (e.g. for the departments in a hospital). Thus, they cover a large part of the personnel of the city administration, which is about 6,000 employees. Most of the administrative officials have email addresses (there are more email addresses than there are so-called telephone subnumbers). The office solution in the city administration of Pori is based on MS Office and the email system applied is T1M1 of Teamware. Work-stations are networked through the city’s own LAN, the domain being MS Windows. As application servers UNIX, Linux and Vax/Vms systems are also used. Between the local network and the Internet there is a standardized firewall solution.

**E-skilling**

The main trend is that both larger and middle-sized cities have paid attention to providing sufficient training for their personnel. In general, even if computer skills need to be improved and upgraded, they are not seen as a bottleneck for developing local e-government. The core of the training in most of the cities is to provide basic skills for the personnel for utilizing the most commonly used software applications. A special feature of the training activities in large cities is that part of it is designed for the top management on the strategic importance of IT on the one hand and on the basic software solutions on the other. Among the majority of local authorities the managerial part of this training scheme is missing.

**Tampere**

Top management does not have any serious problems with computer skills. They have been trained to use basic applications. Tailored training is provided when new applications are launched.

As to the other staff, strengths as well as weaknesses in computer skills vary to a great extent. Some employees have problems even in basic computer skills, partly because they have used older systems that have not required up-to-date computer skills. Nevertheless,
all employees are involved in upgrading computer skills as a part of the development of their work on a day-to-day basis. Actual targeted training varies according to the demands and challenges of the job in question. Usually every employee attends training courses once or twice a year, sometimes even more frequently.

Espoo

With top management, the problems are not so much about computer skills or competencies but about time management. Top managers in the city administration have been given training in the use of management support systems. In addition, they attended e-management training for about 12 days in 2002. This training program was fairly comprehensive, divided into five major thematic areas:

- introduction to digital environment and models
- management of change and the utilization of interaction and openness on the net
- networking and strategic partnerships
- provision of services and products on the net and the management of customer relations (changing customers, CRM, learning from customers, etc.)
- challenges and experiences of e-business and the management of e-business activities in Espoo.

The average age of the city personnel is around 42, which implies that many of them do not have even basic computer skills. Variations in computer and information skills are huge. The staff have been provided with comprehensive computer driving licence training, attended by a considerable proportion of the employees. A separate comprehensive training program for all teachers has been introduced.

Helsinki

In the big city organizations such as Helsinki, computer literacy issues have high priority. The training for top management includes teaching about the strategic importance of information technology on the one hand, and training in the use of computers and basic software on the other. Training for other staff concentrates more on the use of applications, software and computers.

Oulu

Top management’s basic computer skills are fairly well developed. Basic training is organized on demand. Among the staff core IT skills are basically sufficient. Staff members have passed computer driving licences which give them basic knowledge and skills in computers and the use of basic application software. IT training for the staff is continuous, including computer driver’s licence training, other tailored training and www publishing and maintenance training.
Middle-sized cities

In Joensuu the levels of computer skills vary very much, but generally employees have basic competence so that they are able to manage their work requirements. The personnel department organizes training on a continuous basis.

In many cities the staff have not been motivated in any special way for e-government. Yet, training is seen as an essential part of the e-government activities for understandable reasons. Thus, in Kotka, for example, a standard training package on MS products is provided to all the employees (about 2,500) through the courses arranged by educational institutions of the city. Also some politicians are trained. Introduction to special administrative or service applications is organized for each application on the basis of needs among the city personnel.

In Lappeenranta there is both basic training and application-specific training provided by the city for its personnel.

In Pori there is an ongoing three-year project known as Tiedon Portaat (The Stairs of Knowledge) which aims to upgrade the computer skills of the staff. It includes all the employees who need to use a computer in their work. In the early phase of the project, eight support persons were trained who are involved in all the user training events. Later these support persons will be the closest support for staff in using various software and applications. Before the actual training all the users took a test on their present skills and were interviewed by a superior for the purpose of mapping out how much and what kind of training was needed. In the first year in 2002 some 1,000 employees completed this training. The process includes also a repeat phase after six months, in order to guarantee that everyone has learned things and to elaborate the idea of how to utilize these skills in their work.

Citizen involvement: G2C and C2G relations

One of the core e-governance relations is from government to citizens (G2C) and from citizens to government (C2G). Indeed, cities have paid increasing attention to involving and empowering citizens. The real conditions are in some cases rather ambivalent in that there are still some reservations as to the relevance of the use of the information networks and discussion forums. Yet, especially the leading big cities such as Helsinki, Espoo and Tampere can present a convincing range of activities that are designed for increasing citizen involvement. Here the difference between the larger cities and the smaller ones is visible.

Tampere

From the very beginning the city has emphasized the role of citizens in developing electronic services. Thus, many tools have been introduced for citizen consultation and involvement. These include:

- email feedback system
- discussion forums on topical issues (these discussions are taken into account in administrations when dealing with the issues in question)
There are moderated discussion forums on topical issues. The themes of the forum change from time to time on the basis of what is considered to be of current interest. There are also web-based inquiries and surveys by which the city gathers thousands of opinions and receives hundreds of answers to specific questions every year. For example, in the inquiry on municipal economy and finance in spring 2002 citizens sent over 1,000 answers or opinions on municipal finance issues. These opinions were taken into account in the preparation of the municipal budget. Citizens’ ideas gathered in public inquiries and surveys even brought certain new emphases to the budget (Anttiroiko 2004).

The issue of access is considered to be very important in the development of e-government in the city of Tampere. This is why by 2002 there were some 34 access points with one or more computers. In addition there is an Internet bus called NettiNysse, which puts the web on wheels and takes it to users. In all, more than a hundred free public access terminals are available for residents.

Espoo

The city of Espoo has initiated and is involved in many innovative e-democracy projects and experiments. In 2001 Internet and SMS voting procedures for youth parliament were organized. The system may be extended to other areas as well, such as interactive planning processes. Interactive planning processes in land use planning is one of the key e-government projects of the city. In the service sectors citizen involvement is being increased in health care service pilots. There is an opportunity to use online personal health consultation in the catchment area of the Kalajärvi health centre. In all, the main projects in the area of e-democracy and citizen participation are:

- Internet and SMS voting for youth parliament in 2001 and further developments and extensions.
- Citizen initiative project introduced in 2001: opportunity to make citizen initiatives as provided for in the Local Government Act of 1995. The number of initiatives has increased since then. No personal identification is required to make an initiative. This increases the risk of abuse of the system, but this has not so far occurred.
- Interactive planning projects:

  The Haukilahti-Westend traffic safety report was composed with the help of the Internet and of open residential area meetings. In the Being Visible project all the city plans, street plans and construction plans have been placed on the Internet.
The South Espoo General City Plan is an ongoing interactive planning case study with gallup polls, discussions, background information, illustrations, voting, chat with officials, etc.

- The administrative procedure follow-up project: this project deals with the freely worded institution of proceedings, following the administrative proceedings in the city organization, and opening the administrative procedures to citizens as much as possible. The principal problem has been the restrictions determined by the laws on openness of government activities and on personal data.

What is essential is that access and equality issues have been addressed in the values of the city and they have been taken into account when designing e-government solutions.

Helsinki

Computer-assisted participation of citizens is supported by organizing web-based citizen surveys and inquiries, and by establishing discussion and influence forums.

Central projects in this area include:

- Kotikatu (Home Street): community website and services for an urban residential area
- NettiMaunula: community website and services for an urban residential area
- Suoraan Stadista (Straight from the City) discussion forum: thematically guided and moderated discussions
- Nettilautekunta (Net Committee): the influence and discussion forum established by the public transport committee.

Securing wide and open access to information and networks is considered an important precondition for developing the local information society. The city of Helsinki tries to prevent the emergence of the digital divide by strengthening the know-how of citizens and by providing sufficient public access points that are easy to reach.

Oulu

The city of Oulu tries to ensure that citizens will have opportunities to benefit from the information society. The city participated in two rounds of the national Participation Project 1998–99 and 2000–01. One result of this was the participation and influence strategy and action plan, which also deals with the computer skills of citizens. Citizens have been provided with basic computer training in community centres. In addition, one part of the Information Society City Oulu program concerns the development of IS competence.

Citizen consultations and discussions have an important role in stimulating citizen participation. On the Oulu website there are occasionally citizen inquiries or surveys on topical issues.

On the city’s website there is also access to several discussions forums. These include general discussion, general town plan, youth perspective, cooperation in up-bringing and city theatre forums.
**Middle-sized cities**

Neither in Joensuu nor in Lappeenranta have there been any special projects for promoting and activating citizen participation. In Joensuu there are, however, some projects that include certain relevant components, including the ELEF-project, the citizens’ house Soroppi and community centres. In Lappeenranta libraries as well as other public access points are seen as an important place for involving citizens.

Kotka has put some effort into bringing information to citizens through information kiosks. The municipal board set up in November 2002 a new project intended to promote civic action and involvement. At a practical level the Learning City project (Oppiva kaupunki) and similar projects also serve directly and indirectly these purposes.

In Pori they are aware that the web could be used more for activating or involving citizens. Much has been done to increase citizen participation by traditional means such as open communication and publicity, organizing general meetings, and improving chances to give feedback to both local politicians and officials. On the Internet there is a channel for giving feedback and for posing questions to the officials of the city. In the premises of the city—in libraries, community houses, the joint service point and the youth house—there are more than 20 networked computers for free use. In some of these premises citizens from all age groups are taught to use computers. Pori has also been involved in an experiment in which study vouchers have been given to the unemployed and immigrants for acquiring IT training.

The citizens of Pori have got used to the agendas and minutes of representative bodies (the council, board and committees) being available on the web. If these are published with delay because of some technical problems, the city receives immediate critical feedback. It is a sign of a shift in local political culture towards a local information society with active e-citizenship and e-transparency.

**Identifying users’ needs**

One special dimension of G2C and C2G activities is how the needs of users have been identified in designing and implementing e-services. In this area most of the middle-sized and smaller municipalities have done almost nothing, whereas the most advanced big cities have conceived and implemented e-surveys and e-inquiries as a part of continuous communication and follow-up processes. The following case descriptions are only about Tampere and other larger cities.

**Tampere**

The main target group of e-government activities is citizens in general. Specific target groups—young people, senior citizens, immigrants, tourists, local associations, local businesses, public agencies, etc.—are taken into account appropriately in the service branches that provide services to those groups.

A user survey has been conducted once a year since 1997. In addition a general survey has been conducted twice during the same period. Residents’ responses are also gathered through general feedback from various sources (letters to the editor, events, discussions, etc.). Moreover, there are many research reports providing information for the city
government. These are all used in designing user-friendly services and citizen-oriented e-government.

The city has provided extra resources for training providers. From the city’s point of view the special target groups are senior citizens, minorities, inhabitants of suburbs and children whose teaching in computer skills has been increased in schools. The city itself has contributed to this area through the Internet bus called Netti-Nysse. It can be booked free of charge for any group wishing to learn to use the computer and to use the Internet.

Espoo

There is intense interaction between the city and various interest and community groups and active citizens. Discussion forums are used for gathering feedback and ideas. There are also partnership projects and services, such as extranet services for key stakeholders. For instance, a separate enterprise service site is available for firms and many other target groups.

In order to scan the preferences and ascertain the will of local citizens and user groups, inquiries and surveys are conducted half-yearly. A broader systematic joint survey in the capital region is planned. Important information on the usability of e-government systems and services is gathered by various usability studies. Service process simulations have also been done in collaboration with the Helsinki University of Technology, which is located in Otaniemi, in the city of Espoo.

The city has not organized any large-scale training programs outside the city organization. Of course, in schools the teaching of computer and information network skills is provided for the younger generation.

Helsinki

There are various ways the city of Helsinki has tried to identify users’ needs and preferences, such as the use of certain studies and reports as well as the statistics on the use and needs of e-services. There are also some reports available on the expectations and needs of users.

The computer skills of various user groups are part of the broad IS agenda of the city. The following measures have been taken to raise the level of these skills.

- Libraries offer training in the use of computers.
- The People’s college provides courses on the use of computers.
- In schools and colleges the computer equipment and network connections are well developed (100 per cent) and they have an important role in providing education and training in e-skills for children, young people and other groups.
- Lasipalatsi Film and Media Centre in the centre of the city is a place where citizens can acquaint themselves with information technology.

Oulu

All the main user groups are taken into account in developing e-government. The knowledge base for users’ needs and behaviour was gathered from various sources. There
are also some citizen and user inquiries and consultations which provide such information. For example, a public inquiry on the city card has been organized.

Another way of considering the position of various user groups is to cater for their capabilities and skills. This relates to the citizen training mentioned previously. A training plan to focus on citizens’ IT training needs and appropriate training provision is due to start up in the near future on the basis of the plan that is being processed in conjunction with the polytechnic and the university.

**Partnership and cooperation**

Finnish local authorities have cooperated extensively, especially since the 1950s and 1960s when the building of the welfare society really took off. In addition to this, the emergence of new forms of e-government since the early 1990s coincided with the streamlining of municipal organizations and the increased utilization of partnership relations, which helped to set up some e-government activities on an inter-municipal basis. This feature extends from the largest to the smallest municipalities, and covers nowadays both public and private sectors and increasingly also both national and international levels. We may even say that the trend seems to be that a large part of local e-government in Finland will be built upon cooperation, networks and partnerships. As the middle-sized municipalities are involved mainly in conventional inter-municipal cooperation within subregions and regions, the following case descriptions are only about larger cities.

**Tampere**

The city of Tampere utilizes the idea of partnership widely in service provision, participation and development activities, the eTampere program included. The city has increased its relations with both enterprises, civic associations, and educational and research institutions. Media Tampere Ltd is a good example of a public-private partnership. The company develops digital media, carries out projects that support the entrepreneurship in this field, helps IT firms to network and to start business, and also promotes the cooperation of the education and research institutions, financiers, capital investors, companies and development agencies. The biggest shareholders are Alma Media, Fujitsu Invia, Nokia, City of Tampere and Soon Communications, with the University of Tampere also having some shares.

Tampere has several e-government projects and activities with close connections to regional, national and international levels. At national level the city exchanges information with other large cities and also with the ministries. At regional level connections to the regional council, the health care district, ICT firms operating in the Tampere region and the universities have been close.

There are various thematic networks and cooperation relationships, such as the cooperation of Finnish cities developing their city cards, i.e. multi-purpose city-wide smart card applications. Tampere is also involved in the SmartCities Interest Group (SIG) coordinated by Southampton, UK. This kind of cooperation is somewhat loose, both at national and international levels, whereas local networks have been fairly productive in developing e-government applications and new practices. For example, local partnership
has borne fruit in the development of citizen forums like Mansetori, within which the city and university have worked together in a synergetic way.

Espoo

Espoo has various kinds of cooperation with other municipalities in the capital region. However, at regional level there is fairly little cooperation in the area of e-government. There are also thematic and other networks, such as Telecities, likewise urban networks, educational networks, social service networks and others. Espoo and Stockholm have established what is known as an E-Cities Network, which also includes the cities of Tampere, Oulu, Helsinki, Göteborg, and Malmö. It serves development efforts in the form of an exchange of information and experiences of good practices. The city of Espoo also has close connections to the Association of Finnish Local and Regional Authorities and the Advisory Board for Information Management in Public Administration (abbreviated in Finland to JUHTA).

Helsinki

Private sector partners in e-government projects have been teleoperators, IT service providers and software companies. From the public sector, partners include the Centre for Research and Development of Welfare and Health (known in Finland as Stakes) and various ministries.

Oulu

In its efforts to realize the objectives of building good e-government, the city of Oulu has collaborated with the University of Oulu, Oulu Polytechnic, Mobile Forum and private sector actors. Key actors in the Oulu region have been able to create well functioning networks and partnerships, which is a particular strength of the region.

Connections exist to different initiatives and networks:

- cooperation between larger Finnish cities
- citizens’ electronic forms service coordinated by the Ministry of Internal Affairs
- city smart card project in four Finnish cities: Espoo, Vantaa, Pori and Oulu
- Oulu region’s regional cooperation project
- information society projects of the Regional Council of Northern Ostrobothnia.

In addition, many local projects are joint projects in which the city cooperates with the university, polytechnic and state provincial administration. The most ambitious partnership-based regional development projects are Oulu Growth Agreement 2006, MobileForum, and Regional Centre Development Program of Oulu Region.

Aspects of resource allocation

It is estimated that ICT costs vary from 0.7 to 1.5 per cent of the total municipal budgets. Cities develop their e-government within tight budgetary control. Only big cities such as
Helsinki, Espoo and Tampere are able to make considerable investments in the development of e-government.

**Tampere**

The annual capital and running costs of ICTs are about EUR 10 million in the early 2000s. Personnel costs in both central and sector administrations of the city account for about half of this total expenditure. Consultation fees vary greatly from year to year, but the average amount to some EUR 300,000 per year. The bulk of the expense is covered from the city budget. The number of IT personnel is about 150.

Political commitment on behalf of political bodies, well-defined strategies and the commitment of top management guarantee long-term availability of resources needed for the development of e-government. The annual budget approved by the city council is based on the city strategy that includes information society and e-government as key development areas. Basically all the e-government activities are financed through the city budget on the basis of well-defined requirements and needs. Each unit covers the expenses of its own e-government development activities.

**Espoo**

ICT-related capital costs per year amount to almost EUR 6 million, of which investments make up about EUR 3.9 million and interests and depreciations about EUR 1.8 million. Running costs are some EUR 27.7 million per year, including outsourced services, consultation and staff costs.

The personnel of the information administration consists of some 110 employees, costing yearly about EUR 4.5 million. Separate e-government projects (e-service project, social and health services sector customer information system, etc.) have their own personnel and budgets, which are added to the running costs mentioned above. Consultation costs vary, but the average can be estimated to be approximately EUR 1.1 million per year.

The costs of the e-government activities are mainly covered by the city, as there is no significant funding from the EU, central government or other sources.

Contrary to many other cities, Espoo has made the assessment of the effectiveness of e-government activities an integral part of all the city’s information society projects. Various aspects have been noted that have been taken into account when planning and deciding about e-government projects. Effectiveness in particular is considered on the basis of such factors as

- response time in operational management
- smoothness and throughput time of service processes from both customer and administrative viewpoints
- indicators of customer satisfaction
- quantitative indicators on the uses of services and related development trends
- costs-per-function assessments.

Various economic analyses have been conducted to support decision-making on e-government activities and projects. These include BSC, TCO, input-output analyses and
the like. These calculations provide vital information for decision-makers and managers, but the city of Espoo is more concerned with the reorganization of services and administration so as to bring benefits to citizens or customers and to the municipal organization.

**Helsinki**

Capital and running costs per year are about EUR 60 million. In information systems maintenance and support there are about 300 employees (their costs are included in the sum above).

E-government development projects have mainly been financed by the city. Some of the projects have been EU projects, which means that part of their finance comes from the EU.

As to the rational basis for allocating resources to the development of e-government, economic aspects have been considered in internal projects on computer systems and applications. In the case of internal systems cost-benefit analyses have been conducted. The basic rule is that cost-benefit assessments are made within each project. In the strategy process it has been considered necessary to increase productivity and automation, especially because around 2010 a large percentage of the city employees will retire, putting further pressure on increasing efficiency and reducing costs. So far no well-defined indicators and ratios related to effectiveness and other assessments are used, but work on them is under development.

**Oulu**

Capital and running costs of ICTs are about EUR 6 million. The annual cost of IT personnel is about EUR 1 million. The number of IT personnel is about 40.

E-government activities are mainly financed from the city budget. Some funding has also come from the EU and various ministries.

Investments in e-government are likely to reduce costs in the long run, but savings cannot be expected for a few years. No special indicators or calculations have been used extensively in the assessments of the e-government projects.

**Middle-sized cities**

Total IT costs of the city of Joensuu have not been calculated, but some EUR 200,000 are allocated for ICT investments and nearly EUR 2 million to running costs within the city’s IT service centre. The number of employees needed to maintain the city information system is 29.

In Kotka the IT capital expenditure per year is in the region of EUR 500,000 and operational costs are about EUR 2.5 million. In the city’s IT centre there are 20 employees. In addition, there are some individual officials who are involved in the maintenance of the city information system. The city of Kotka aims at reducing uncertainty and randomness in decision-making by drafting e-strategies.

The capital expenditure in Lappeenranta is about EUR 800,000 and the operational expenditure some EUR 2.5 million per year. Some 15 employees are involved in the
maintenance of the city information system. The city has no long-term development plan for e-government, but it is an ongoing development process.

In Pori the capital expenditure is around half a million EUR (not including educational institutions) and operational costs (without personnel costs) total about EUR 1.2 million. It is, however, worth stressing that there are both centralized and decentralized functions, which makes it difficult to say exactly what the costs of e-government activities are. Also IT officials can be found in different departments, including second-degree colleges and the polytechnic. As to the IT department, there are 25 permanent posts. Furthermore in basic service sectors there are 4+8 employees (the 8 are a kind of departmental support staff). Also in second-degree colleges and in the polytechnic there are about half a dozen IT officials each. The city of Pori has no separate e-government strategy with separate resource allocations or long-term plans. Electronic interactions and transactions and related issues are taken into account as a part of the development of service systems. Any special extra resources for developing e-government are not expected to be available.

Bibliography


3
Urban e-government in France

Jean Pierre Chamoux

Introduction

Full electronic management of small communities and major cities was not yet common practice in France when we started the survey summarized below. For some local or personal reasons, it appears that most investments in e-government in such cities were initiated by either a professional member of the local government (e.g., a civil service municipal manager) or a prominent local politician whose interest, curiosity or vocation steered the town toward the development of an “Information Society” model.

Ten cases have been included in the project research: Aix-en-Provence, Le Havre, Montpellier, Valenciennes, Issy-les-Moulineaux, Joinville-le-Pont, Vandoeuvre, Hérouville Saint-Clair, Chooz, Parthenay (see Figure 3.1). One may assume that each of these cases can be considered as a typical example of some kind of significant French town or city. Experiments of all sorts are found in this sample. None of these should, however, be considered as a “typical French model” of electronic administration for no prominent model is yet to be found in the French local administrations. Most of the cities listed in our study may therefore be viewed as pilot schemes for the management of French local communities, or as test beds for future electronic communication at the local level.

An already high number of mayors’ conferences and professional meetings for municipal officials testifies to the growing interest in electronic transactions and processes in local government. But each and every case was still specific at the period of the survey: learning by doing is the key, and local or personal factors still prevailed. Exchange quite often took place between local officials, consultants, providers and suppliers in non-partisan gatherings. The French Senate hosted, for instance, an interesting meeting organized by the University of Paris in January 2002, with the support of the Conseil d’Etat and the minister in charge of public administration. An earlier step was taken in 2001 with a lengthy report on “an electronic civil administration.” Since then, several more recent initiatives have followed, including a significant gathering in late 2003 chaired in
Issy-les-Moulineaux by its acting mayor, running for the regional chairmanship of the Paris Ile-de-France regional assembly at the March 2004 election.

So the French picture is changing faster than expected, and the pressure for change comes from below, from the average population behavior. At the end of 2002, another inquiry that we produced at the request of the French council for new information technologies\(^3\) showed that French lay people are accepting Information Age equipment and practices more quickly than anticipated by most analysts. The daily use of the existing electronic procedures mentioned in our study showed that the population does not hesitate to adopt electronic options when they are made available to them. Since

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*Figure 3.1 Location of the ten cities surveyed in France.*
then, more recent opinion polls have confirmed the very quick pick-up of the information systems by the French public: a national quantitative survey published in late 2003 confirmed the overall interest of French people in computers, digital equipment in general, Internet services, etc.\(^4\)

This being said, this inquiry shows at large that French towns and cities may well take the lead in local e-management in the coming years—including in rural areas—to facilitate the public’s access to electronic administration. The school system (operated by the municipalities for elementary schools) is involved in many of the cases we surveyed. It demonstrates the promotional role of the school system in favor of new media acceptance by younger strata of the French public.

**Local government in French information society**

In its September 30, 2002 issue, the French economic daily *Les Echos* reported on the current emerging electronic communication in the country, under the following title: “*Les français bien disposes envers l’e-administration*”\(^5\) The report was based on an earlier September 2002 population survey in France, sponsored by the largest consumer organization in the country, signaling that almost half of the people were either willing or ready to use Internet access for their administrative paperwork: income tax reporting, passport delivery, tax payments were some of the formalities quoted in the survey for which electronic procedures were able to facilitate the daily life of the citizen.

On the other hand, another report was stating, in the same newspaper the very same day, that 55 percent of the French people knew little if anything of the actual administrative procedures effectively available on the net. A comparative analysis run by Accenture on 23 different countries, including most of the European Union, Canada and the US, Singapore, Hong Kong and South Africa, was then ranking France as the 12th e-government sensitive country in this panel. In other words: according to the way one looks at it, the French present interest for electronic procedures in government and public administration may either be high or just around average.

**National framework**

The use of information and communication technologies in public administrations has grown progressively in France since the mid-nineties. Two departments in the French government have significantly sustained the move towards electronic procedures and web services:

- The inter-ministerial delegation for State reform (Delegation interministérielle pour la réforme de l’État—DIRE) has taken many initiatives to drive public administrations in general, and local municipalities in particular, in the direction of more electronic procedures in their relation to the public;\(^6\) this body was formed in 1995 (*decret n° 95–1007 du 13 sept. 1995, modifié par décret 98–573 du 8 juillet 1998*) and has published several national directives to favor electronic procedures and electronic access to public documents and files.\(^7\) A number of these initiatives have involved representatives of the French Mayors association (Association des maires de France) and consulting bodies including the public Financial Trust “Caisse des Dépots et Consignations” known as the traditional “banker” of the French local communities.
The Department for Industry (within the Ministère de l’Économie, des Finances and de l’industrie) has contracted quite a number of studies and diffused various recommendations on public administration electronic procedures over the years; several publications and meetings were held on related topics including public reports to the Prime Minister issued over the years since 1997 of which most have been released as public documents accessible in printed as well as electronic format. The above government initiatives have created a climate in favor of all kinds of local initiatives. We shall see below that some of the cases selected for our study relate to the above government subsidized initiatives.

In the meantime, the interest for Internet services has grown among the professional environment and the public in general. The growing numbers of local web sites is a fair illustration of this movement: in a press report issued mid-April 2002 (Le Nouvel Observateur-Paris Ile de France, 11–17 April 2002, pp. 22–3) 211 local municipal web sites were tested by a consumer association in the regional area around Paris. This number gives an idea of the trend, not only around the French capital city, but also over the whole country.

Evaluating the real impact of the electronic services is, however, not so straightforward. In the following case studies, we will try to give a hint on the actual performance of the sample selected for qualitative reasons explained below.

Selection of cases

The research we have made during the last summer months in 2002 covered ten municipalities distributed largely over most of the French continental territory; these were selected because of their very different social and economical standing, quite varied in size, resident population, revenue and region. The purpose of this city sample was certainly not to look for a statistical coverage of the French population; on the contrary, we devised the sample to cover as widely as possible the reported trials or experiences of local administration assisted by electronic and networking media. (See Figure 3.1 for the locations of these cities in France.)

Seen from abroad, France is certainly a rather large territory by European standards, with a more scattered population than northern Europe; despite a still high number of rural villages (36,000 communes at the present time), the French population has since the Second World War been concentrating not only in the Paris megalopolis (over 10 million people in the 2003 census data), but also in large and medium-size cities. With less than half a million farmers left today, most of the former rural inhabitants have settled in the neighboring or even remote urban areas, including the central provincial towns of the 90 administrative départements (10,000 to 50,000 inhabitants) where most of the business, administrative and cultural activities are now situated.

Given this demography and the qualitative purpose of the study, we selected our ten municipalities as follows.

1Four of them exemplify the urbanized twentieth-century provincial cities of France:

- Aix-en-Provence, 150,000 inhabitants, is a widely renowned academic, administrative and cultural center in the Mediterranean area, with a traditional high
proportion of students, a well-educated and active bourgeoisie, the former capital city of its region; close to Marseille, the second French megalopolis by its size, Aix includes a recently grown significant proportion of immigrants (first and second generation) from North Africa (mostly Algerians);

- Le Havre, 250,000 inhabitants, is a major French harbor on the Channel, now also deeply marked by the river Seine industrial corridor, developed since the 1960s downstream from Paris, with major manufacturing and chemical industries (from automobile to cigarettes, cement and the largest European concentration of oil refineries) and a growing position in foreign maritime trade with America, Asia and the rest of Europe; a fairly rich city today, including however a rather low-income working population including a significant proportion of first- and second-generation immigrants from North Africa and black Africa;

- Montpellier, 250,000 inhabitants, is another cultural and administrative southern French center, the oldest university in the country after Paris, with both a highly educated population and a significant share of internal immigration from the early sixties; a regional capital of the Languedoc province, few industries besides a computer and electronic plant, but significant service centers;

- Valenciennes, 50,000 inhabitants, with a densely populated environment as in nearby Flanders, is an industrial city of the northern French province close to Belgium, surrounded by the nineteenth-century coal and iron industry centers of France, now closed; the city has a recent technological university center, its employment being under economic recovery thanks to the automotive industry settled there over the recent decade.

2 Four cases represent the typical suburban neighborhoods of the large conurbations grown during the twentieth-century:

- two from the Paris close banlieue area, Issy-les-Moulineaux (50,000 inhabitants) and Joinville-le-Pont (20,000 inhabitants);
- one from the eastern province of Lorraine, a popular suburb of Nancy, Vandoeuvre (32,000 inhabitants);
- one from Normandie, an extension of the traditional Norman capital of Caen: Hérouville Saint-Clair (10,000 inhabitants).

3 Two little towns from two different rural provinces:

- in the northern Ardennes, Chooz (800 inhabitants) a village which has received much attention thanks to the development of a large nuclear power plant there in the 1970s;
- Parthenay (12,000 inhabitants) located in the Poitou region, traditionally famous for its large traditional market for stock and oxen.

Each of these localities was described in detail. Not all of these have yet completed a full electronic administration at the local level but most have either already realized some preliminary project or produced a web site of some interest. Selected from some fifty possible cases, these ten examples are a fair illustration of what the French mayors, their staff and colleagues are likely to pursue in the coming years. They exemplify a regular and accelerated march toward more electronic communication media to link the French
administrations, at the local level, with the people in the country. We will summarize below the main characteristics of this movement which we then describe in some detail.

**General description and major findings of the survey**

The particular situation of each of the ten cases quoted in our survey is specified in the detailed analysis below. One may still assume that all of these cases can be considered as a typical test bed for electronic administration. Most of the cities in our study should hence be considered as an example of electronic procedures in the management of French local communities and as a field trial for a future electronic municipal administration (between citizens, companies and providers of the municipalities). In short, nothing allows as yet to foresee an established scheme of French local electronic government which may be extrapolated from the small sample quoted in this study. We found, however, that the number of actual projects is growing in France. But the sample is still too small and the history too short for a reasonable evaluation to take place yet on a national scale.

The French ministry for urban affairs (*Ministère de la ville*) has nonetheless established a national rating for e-government local projects: they allocate a mark from @ to 5@ according to the originality and advancement of the local applications already in place. Most of the cities quoted here in the sample were graded @@@ or more in 2002.10 The surveyed cases achieved the following ratings: Parthenay five; Chooz, Vandoeuvre and Issy-les-Moulineaux four; Valenciennes, Montpellier, Le Havre, Joinville and Hérouville Saint-Clair three; and Aix-en-Provence none.

Local and personal factors maintain significance for the time being. We have also noticed that many local authorities have connections with the recent ICT directorate of the traditional French national public financial body, the “Caisse des Dépots and Consignations” (CdC). This traditional 200-years-old French national institution has already injected significant capital and some expertise to support local communities in their IT projects. An ambitious CdC program was launched in late 200211 raising some interest in French towns and cities. Other regional subsidies and grants (from CdC, regions or even government) are now available for municipalities who want to invest in the electronic communication developments.

**Case study**

**Project history and goals**

The emergence of electronic procedures in the city was based on three different kinds of circumstance typical of the following French municipalities.

1 New technologies have been chosen to illustrate the effort to either renovate or modernize the local community, as a visible flag of renovation.

Among our panel cities, Joinville, Hérouville, Le Havre, Valenciennes and Vandoeuvre fall into this category. Most of them have lived through difficult times during the last generation: poorer than average, lower educated, immigrant, suburban populations
characterize these cities; the urban renewal, called upon by circumstances and quite often by a shift in the political leadership of the city, has appealed for new technologies to foster renewal and more visible local democracy.

The general strategy suggests reducing inequalities in the population and revising urban planning including restructuring high-rise housing densely built around the 1970s (typically: Joinville).

2 Specific conditions have also sustained the municipal involvement in communication media as a special project for a few cities.

This particular pioneering spirit is found, at least in the early days of electronic development, in three French cases quoted here: Chooz, Issy-les-Moulineaux and Parthenay. Each of these had a specific reason to drive technology into light: Chooz because of the heavy involvement of Electricité de France in building a huge nuclear power plant there which poured unusual seed money into the commune, a lot of which was invested in advanced services for the population; Issy because of the voluntary planned urban development set to bring heavy support for the media industries (within the closest Paris suburbs), telecommunications and electronic laboratories (the France telecom research centre (CNET) settled there in the early 1970s); and Parthenay because of the test phase prepared as early as the 1980s in the frame of the French telematics programs, later followed by web developments and many experimental devices introduced in this local city through the strong political dedication of the former mayor.

3 Local circumstances have sometimes facilitated the move toward new technologies.

The cases at stake here are Aix-en-Provence and Montpellier: with slightly differing paces, both cities are interested either in computers and telecommunications (for Montpellier) or public administration and economic management (for Aix and Montpellier). Both cities have traditional and well-ranked universities; both are under strong urban pressure and looking for a new kind of urban development for the twenty-first century. Moving ahead toward the information age then appears a natural move for these cities. One may note that the mayor’s party affiliation is not relevant in these cases (Aix has a conservative mayor today, with a socialist former head for years; Montpellier’s mayor has been a socialist for over 20 years).

More specifics on the sample

**Issy-les-Moulineaux**

The city of Issy in the southern Paris suburbs was one of the early adopters of new information technologies. Since the early 1990s, this city has gathered not only equipment for its citizens, but also driven the interest of industries devoted to the information industry and services: computers, Internet, the movies, television and radio broadcasting, etc. The mayor—a short-time Secretary of State for communications in the late 1980s—has concentrated investments and supports on citizen services: electronic voting, distance surveillance, school computers, etc. The explicit municipal objective is
to foster electronic and information *libre-service* for all municipal services like civil registers, the school system, municipal supply of all kinds, transportation and the like.

**Parthenay**

All projects developed in this city target the development of exchanges between the local people. The former mayor (now out of office) wished to sustain new information technologies as an aid to maintaining the social contacts in the area (remember: Parthenay has basically been a market town for centuries). The French Home Office (*Ministère de l’intérieur*) has supported this place for years as a “laboratory” to test new administrative procedures for civil registers (dwelling, land registry, electoral polls, death and birth registries, etc.). The move started early, during the telematics years, and was supported by France Telecom investments at the time.

**Chooz**

This village has hosted a major nuclear plant since 1967. The equipment, recently fully replaced by a more modern power plant, still nuclear fuelled, not only appealed for investments from Electricité de France, but also imported manpower which boosted the local market. In 1997 the town was designated as the typical “*Village Numérique*” (virtual village). The acting mayor was re-elected on that basis, implicitly showing the acceptance of this vision by the local constituency.

**Vandoeuvre**

The trend toward information technologies was initiated by the present mayor, now a member of the conservative coalition UMP (formerly RPR\textsuperscript{12}). The basic idea was to change the image of this suburban community from its former *cite-dortoir* (sleeping town) to present-day modernity; the municipality wishes to attract a younger population to the town, to answer the demand for new, modern technology handling as part of the everyday lifestyle, hoping to convince local people to continue to live in the area.

**Valenciennes**

Valenciennes local area network, l’Anneau Citoyen Valenciennois (ACV), was formed in order to support the transformation of this city into the twenty-first century. Although dependent on traditional manufacturing industries (basically: automotive) the city of Valenciennes includes a growing proportion of employment dealing with electronics (because of automobile parts). The university campus is also dedicated to the media and information services.

In the first instance, the ACV initiative was aimed at the cultural activities, connecting them to the municipal services: theater, movies, fine arts, museums, libraries, etc. It has quickly been overtaken by financial services, education, health services and many other aspects of municipal life. This city cares about online services to help their people to deal with each other and strengthen their ties.
Montpellier

Montpellier has dedicated significant energy to the use and mastering of new electronic devices, computers in particular, for quite a long time; the university computer center, for instance, is well known, servicing research laboratories from all over the country and even neighboring countries like Spain. Some IBM manufacturing plants originally maintained an industrial expertise over which the city has tried to surf over the years. The city has a younger population than average for this type of city in France, including many students. This area is still growing rather fast for French standards (even in 2003 census data). The mayor expects this attractiveness to be enhanced by the technological advances sustained by the local authorities.

They seem to be worried by the potential “digital divide” that may appear between the higher educated, and eventually richer, part of the population and the lower-income inhabitants. Special attention is given to new company settlement in the domain of software, Internet services, telecommunication in general, and related services of the “information age” (say: polling, economic analysis, urban services, health and cosmetics, etc.).

Le Havre

Communication and information technologies were originally considered here as a useful new activity supply by the urban and planning department of the city services. Investments started with the municipal intranet supply, linking it with the municipal printed media (Océanes). After a few years, this movement was extended to most of the town hall services, including open access by laypeople to the city registers, municipal minutes, mayor’s regulations, cultural activities in museums, libraries, theaters, etc. Another target is to interconnect the city with its hinterland, including over ten municipalities with a suburban population of roughly 100,000.

Joinville

The basic idea here involved re-planning this suburban community which supported an inorganic growth around 1970 with little specific vocation at that time. The original initiatives favoring new technologies in Joinville-le-Pont (18,000 inhabitants then) developed around 1990, complementing other investments in urban redesign. The mayor hoped to support wider access to informatics and communication new media for the whole population, here again anxious to avoid any “digital divide.”

A significant re-development program concerns the high-rise dwellings built from 1970 on, with digital media interconnecting most of them to ease the use of new systems in most living quarters of the resident population.

Hérouville Saint-Clair

This city, like Joinville, has a working population employed mostly in the industrial parks around the central city of Caen (automobile industries, electronics, civil servants, etc.). The high-rise low-cost buildings in Hérouville Saint-Clair are rented to low-income people. The former mayors have invested a lot in urban equipment raising the department
ratio to the highest possible for a city of this size. Investments in public buildings, theatres, library, the town hall, etc. are not balanced with fiscal revenues, for 20 percent of the population was unemployed in 2002/2003. The new elected municipality hopes to keep close ties with the population, save as much as possible of extra costs and drive the interest of its constituency toward the information age.

A proportion of the new elected officers are working in the information industry sector, bringing their expertise to the city council; their bid to open Hérouville to the Internet and new media is risky but interesting to follow.

Aix-en-Provence

In this particular city as well, interest in new information technologies is recent. It was after the last municipal election that the prospect of electronic democracy became an issue in Aix. The mayor’s team includes both professionals and university experts wishing to extend the traditional cultural competitive advantage of this city into the information age. The drive of educated personnel into the Provence region not only from the rest of France (e.g. Montpellier) but also from abroad (Aix universities have run a well-established exchange program for decades with the US and other European universities) brings opportunities to create tertiary employment there, notably in the information services.

The town hall has developed electronic services for the population, with the prospect of maximizing the chances for their constituency to put all new technologies into use in their relationships with the city administration and city council. This is confirmed in the university environment, but with some restriction, as Aix universities are more focused on law, social sciences, the humanities than on technologies, most of the scientific laboratories being located in the nearby larger city of Marseille.

Profiles of the local projects

One may see that the French cities involved in the electronic-service programs split in three sub-groups. A minority of cases deal with a long-term ambition to differentiate the local practice and to demonstrate a vocation for computers, telecommunication and electronic media as the core of local development: Issy-les-Moulineaux, Vandoeuvre, Parthenay belong to this category.

Another class of cities includes those municipalities for which electronic procedures, services and products have been chosen as an illustration of modernity: this seems to be the case for Chooz, Joinville, Valenciennes, and even for Hérouville and Montpellier but to a lesser degree. In the first three cities, electronic democracy is, however, not yet very advanced, whether because of a late start or because of a lack of clear priority in the allocation of funds and manpower. The trend is visible but realizations are not fully measurable at the present time.

Finally, a minority of cases is concerned with cities where electronic media appear as one means among others to renovate the city, to enhance local exchanges between the elected representatives, their civil servants and the population at large: such is the case in Le Havre and Aix-en-Provence for the time being.
**Visions and strategies**

**Issy-les-Moulineaux**

The overall strategy of this city is to link people together and reinforce the local identity, which is always a problem in a large megalopolis. New technologies are considered a flagship enterprise in that sense, allowing the city to clearly prove its dedication to the Internet and the information society.

The acting mayor, André Santini, an unusually humorous politician, has played a considerable part in this process. His connection with a relatively minor political party (UDF) might have marginalized this personality, who took advantage of his peculiar position in Parliament to support his local position as a suburban mayor.

A brilliant public relations officer for his neighborhood, he attracted to Issy quite a few remarkable entrepreneurs and service companies who partly sponsor the city’s projects. In the mean time, the mayor’s office uses new media extensively to extend the reach of municipal communication. All applications are sub-contracted to professional providers, most of them settled within the municipal city limits.

**Parthenay**

The former mayor, M.Hervé, launched the original program for this town. His project was to accelerate the informatics equipment of the town hall and the people as well, the main purpose being to ease daily relationships within the constituency.

This town has received much support and attention from the central ministry in charge of the interior (Home Office). It has been pinpointed as an advanced example of the new electronic small city of the French provincial environment, significantly sponsored by the central State administration.

**Chooz**

This little northern border town is exceptional in many ways, including the heavy power supply equipment located there (see page 67). The central character here is the mayor, Mme Michele Marquet, an enthusiastic supporter of new technologies per se. Her team is considerably younger than average in that type of community, with a few council members professionally involved in communication, sciences and technology.

Chooz was selected as a pilot town for new public local multimedia services, with the background idea that it should illustrate the new generation of public local services in the twenty-first century.

**Vandoeuvre**

The high proportion of low-income housing here (as in several other cities of our sample, such as Hérouville and joinville) forces the municipal council to give special attention to redistributive efforts: open access to low-cost services for all people, social benefit support and vocational education, etc.
Five local officers are specially involved in driving the program through a comité de pilotage (a task force) lead by the mayor, the deputy mayor, the deputy director general of the town hall and the professional webmaster. All so-called “electronic democracy” applications are designed and implemented through their common patronage. Much attention is given here to administrative procedures which they try to simplify and support for those less educated families quite numerous in that city.

All developments are nonetheless sub-contracted to professional companies which complete their tasks as consultants for the city.

Valenciennes

The key person here is the acting mayor, Jean-Louis Borloo, who has an unusual profile in French politics, being a member of the same party as M.Santini quoted above (UDF). A member of the present government in charge of housing and urban affairs (Ministère de la Ville et du Logement) the mayor was formerly a lawyer, as accustomed to public and press relations as his Issy counterpart.

Valenciennes’ constituency was given a chance to communicate by electronic media with the mayor’s office and enter into public debate with the council. As for most other cities quoted in our study, applications are subcontracted in practice to professional consultants. New projects are all under control of the elected council members, with the mayor involved directly in many of them. It is to be seen later whether this local experience may lead or not to a national policy in the ministry, headed for two years already by M.Borloo.

Montpellier

The mayor here also plays a central role in the Montpellier urban perspective. New technologies support the rhetoric of the mayor (including biotechnology in the present case, because of the traditional medical school settled in this university from the renaissance times). A university professor himself, still teaching law in this Montpellier faculty, Georges Frêche (PS14) has been acting mayor since 1977. Most applications are designed by the city services, but detailed implementation is often subcontracted here as well.

Le Havre

Among our sample, this city has a unique position because the key person in charge of new technology implementation is a civil servant, currently head of the information and documentation center in the town hall. Acting as web master as well, this local civil servant has been given a wide responsibility from the mayor’s office to drive investments and design most programs.

There have been regular information and feedback sessions with the municipal personnel—and more recently with a sample of the city’s inhabitants—to design web services. Most projects were designed internally and subcontracted for implementation.
All practical services are delegated by the mayor, Antoine Rufenacht, a long-time Gaullist politician who tends to be rather discrete in the development of the ICT program, while supporting the effort of his staff without restriction.

**Joinville**

The acting mayor, M. Pierre Aubry, has seized the opportunity to renovate the city involvement in image and media developments: throughout most of the twentieth century, Joinville was home to one of the major movie studios in France (studios de Joinville).

There was a local referendum at the turning point of the new ICT municipal program; many suggestions were gathered at this point, on a voluntary basis and often anonymously. Many of these formed the basis of the actual project whose implementation is sub-contracted for the most part to multimedia companies in the region.

**Hérouville Saint-Clair**

As noted above, the recently elected council has prioritized budgetary control and social services. New information technologies appear as one of the tools mobilized to increase productivity in the services, cut costs and improve relations with the constituency.

Information services are first on the list for implementation. As a target for the next term, implementing an online administrative procedure for the most usual local procedures takes high priority (school registration, social benefits, ID card delivery, work permits for immigrants).

All civil servants have now access to intranet services for most of their daily practice. Every agent uses a PC connection daily, and two-thirds of them (160 employees) access freely the Internet, which is not yet a common practice everywhere. Most applications are under the control of the city computer center whose head is in charge of the ICT program development.

**Aix-en-Provence**

The mayor and two city directors are in charge of ICT programs here, including the municipal intranet. Users were anonymously polled to select the program schedule.

Applications are basically designed internally, with two Internet developers in charge of the job. The program is still too early in the process to be seriously evaluated at the present time.

**Executive commitment**

Our survey splits into two sub-categories here: a majority of municipalities do follow the visible leadership of their mayor, a strongly dedicated personality with a special interest in new technologies. Those are, in particular: Issy-les-Moulineaux, whose mayor carries probably the most energetic political commitment to the information age of those in our panel; Parthenay, whose former mayor was also very much involved in experimenting
with new media at a local level; Chooz, whose mayor has also stressed an early commitment to new media; and Vandoeuvre, whose mayor is also very much dedicated to electronic-age procedures and democracy. In Issy, electronic government procedures receive a high and constant priority. In Vandoeuvre, the top elected personnel tend to be involved as regional examples for other cities nearby.

On the other hand, the cities of Aix-en-Provence, Le Havre, Hérouville, Montpellier and Valenciennes, have demonstrated no special involvement by the mayor in the detailed new technology development; in those cities, it is more often another member of the municipality (a deputy-mayor in many cases) who is in charge of the electronic platform. The electronic developments appear then as one facet of the municipal platform, not as the core part of the program.

Web sites, computers at schools, electronic libraries and even new industrial electronic developments, do support the overall development programs, which may be dealing with more traditional industries (automobile in Valenciennes, oil and harbor traffic in Le Havre, trade and retail in Hérouville, etc.).

In Montpellier the so-called “electronic government” project was recently upheld to balance the local tram infrastructure project, which was costly and somehow clumsy in its implementation. At the turn of his sixth mandate, M. Frêche rebound on ICT is noticeable.

**Organization**

In most cases, the electronic fora and the development of e-programs are handled by a dedicated commission within the municipality. This body, quite commonly now among the cities covered by our survey, includes usually: either the mayor (or his or her representative) or a deputy mayor; the head of the informatics department (or the logistics officer in charge of computer systems and networks); one or two other elected persons; some competent civil servant for the purpose of special developments (such as an officer for documentation in the town hall, a public relations officer for external affairs; a human resource and personnel officer for internal affairs, etc.).

It is becoming standard practice to set up a webmaster officer in the municipality. This is mostly an employee with technical training in computers and communication, with a special delegation from the mayor. Depending on the local relationships between the elected representatives and the civil servants, the webmaster’s responsibility may extend well beyond technical matters. The general picture tends, however, to maintain this position within strictly non-political external relationships with the public, local or not.

Le Havre is the exception to the rule insofar as the e-government-project is run by a webmaster who reports regularly to the mayor. Here no project committee has been installed. So, e-government is a one-man show within the bureaucracy for the time being. Various organization schemes have been noticed in the sample, among which are the following.

- Project development monitored under local “information planning” is reported periodically during the council sessions. Three persons are in charge: one for technology, one for maintenance and one for a typical project “Fort numérique” (the data fort) (Issy).
- Two deputy officers report on ICT projects with subcontractors acting as delegates of the local council (Valenciennes).

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• The municipal task force, “Comité de pilotage,” checks weekly the progress of digital projects in the city. The staff respond almost daily. As a rule, appointed experts deal with everyday questions, reporting the state of the project to the mayor quite regularly (Vandoeuvre).

• The city has set up a significant dedicated unit of staff: 16 persons form the computer service, seven of those being in charge of new applications. They meet weekly to update the progress of their program (Parthenay).

• Program supervision is delegated to a special task force of three officers (ICT, hardware, new programs). They monitor at least weekly all topics relating to information programs (Joinville).

• The city has three officers in charge of specific technologies and maintenance, meeting weekly to take care of all related programs and respond in case of problems, and reporting directly to the mayor (Montpellier).

E-services and e-democracy applications

Most of the investments noted over the case study involve extensive use of municipal equipment to help the average person to become acquainted with electronic communications: as an example, this breach of the so-called “digital divide” uses: access to computers in the classroom (being generalized in most of the cases quoted here); available computers in municipal public libraries; free access to electronic booths in public buildings (town hall, hospitals, train and bus stations, etc.); and sometimes distribution of used equipment to low-income families (as in Hérouville Saint-Clair).

As a general rule, the main priority has been given to applications useful for the functioning of the municipality (internal applications). In most cases, the external applications (those open to the public in general and to third parties, like providers to the community) are both less numerous and less developed than the internal ones.

In general, e-democracy applications such as citizen participation in the local consultation and decision-making processes concerning questions of interest to the citizen are still underdeveloped.

E-services

Internal applications

A vast list of applications is quoted in the survey, relating mainly to civil employees, rather than the population. One may list, in particular, among the common place: local press clipping services accessible online by municipal personnel; local information services including upcoming events, a schedule for the municipal assembly, opening hours of the major municipal services (library, swimming pool, theaters, etc.); one or several internal directories (names, functions, phone numbers and eventually email addresses of municipal employees, etc.); sometimes a documentary basis including local or national regulations, mayor’s commitments, municipal assembly deliberations, schedules of upcoming local commissions and public meetings, etc.

Some examples may serve as an illustration:
• In Aix-en-Provence the intranet service was only accessible in 2002 to city employees in their office location. This service offers many opportunities such as: data banks on equipment, regulations, geographic systems, etc. Some of these would eventually be open to the general public—or to selected enterprises like the municipal delegated services—thanks to an extension of some intranet sites to the Internet.

• Cities subcontract a few of their needs: the municipal computer services often develop their own new applications, instead of buying designs off the shelf at market prices; thus more than 90 percent of computer applications were produced internally in the small town of Parthenay.

Less common are the most specialized applications such as: a detailed cartography of streets, sidewalks, urban networks, buildings, sewage, TV cables and telephone networks, gas or power supply. Electronic accessible cartography is, however, progressing fast but the availability of such applications at the time of going to press was not yet very common in the cities surveyed.

External applications

The most common practice includes at least a municipal web site. However, those sites are not fully devoted to municipal users; on the contrary, it seems that a significant number of users look at the city web sites in order to get some rough first-hand information on the city, without any special requirements of a local nature. Included are: general information on the city spectrum for review (population, localization, economic activity, etc.); comparing data on various cities in France or even abroad, etc.

So, the rule is rather that the sites provide city information systems or portals as an information tool. One may then more often order a specific formality or ask for an official document from a distance (e.g. an “État civil” birth, marriage or death certificate or an “extrait de cadastre,” i.e. a land registry document). It is, however, quite uncommon for the given documents to be delivered through the same channel. On the contrary, delivery at the town hall counter is the usual way to receive official papers, in their usual paper format. Some cities have gone a step further and offer online services for specific needs and specific users (land developers, mortgage and real estate agents, building contractors, etc.).

Ticketing for cultural and sports events (football, theater, concert) is quite common. Here are other illustrative examples.

• Pilot projects aim at helping companies by providing them with access to the logistical and technical infrastructure of the city. Similarly, health services (Cabinet Medical) may soon become a remote service for some patients, with doctors consulting some of their clients from a cyber-dedicated terminal (Valenciennes).

• In Montpellier the Cyber-base is conceived to help would-be entrepreneurs to use computer services free of charge before their start-up company becomes self-sustainable.

• In some cases, special applications were designed to support control functions like checking pupils’ attendance in the local schools, as the InTownNet in Parthenay.

• In Vandoeuvre the already quoted Cyber-base, dedicated to employment and vocational training, creates a platform for students to meet eventually with other would-be
workers or with potential employers. By means of the so-called Cyber-base Vandoeuvre job seekers can also use electronic equipment to simplify their approach to the desired employer.

- In several cities the geographical information system (GIS) is under development (SIG: *Système d’Information Géographique*). The purpose is to gain common access to all network mapping, urban facilities, private lots, power supply, etc. When accessible on the Internet web site, these systems would facilitate the daily supply of commodities and continuous services (telephone, power and gas, sewage, etc.) (Le Havre).

Some quite innovative and ambitious initiatives are, at least for France:

**CHOOZ**

- A new cyber postal office.
- Intelligent housing equipment linked through the Internet to check security, heat supply, kitchenware from work to home.
- “*Le site de la mémoire*”: this project deals with local history and tales; the purpose being to gather all traditional stories on local history and make them accessible over the net.

**VALENCIENNES**

- A cyber library will offer all stored data online to club members. The library wishes to make very old books accessible remotely and to keep the used books in better shape for future use.
- The above quoted ACV16 network called Archiméd covers the following collections: *musée des Beaux-Arts, Bibliothèque Multimedia, Theater and town hall*. These would be linked to the central library (*Bibliothèque Multimédia*) with twelve servers. ADSL or wide band fiber connection would relay the library to the other main services.

**JOINVILLE**

- “*Joinville Cybermobile*” is the main pilot project here; this is a mobile multimedia platform (ten portable PCs) serving all Internet services with a monitor to train people and help them to become familiar with multimedia.
- “*Agora Joinville Emploi*” is another interesting service enabling the unemployed to access job offers online, assisted by individual guidance in charge of unemployed citizens.

**ISSY-LES-MOULINEAUX**

- *L’opération Papoo*: since 1998, parents can chat with their children at their summer camp location: video-conferences are organized daily to keep track of children on vacation at a distance; a municipal assistant supports the parents when needed. Similarly the city has operated the first cyber baby care (*cyber-crèche*) since 2000,
with web cams checking children on site while their mothers may sit at their desk to work.

• Finally, a very limited number of applications concern the economic agents at large, including potential and ordinary suppliers of the city, land developers, real estate trading, etc.

Citizen participation

The web site hits are hence not so significant of local electronic democracy practice. On the contrary, a limited number of practical files may be accessible to the city’s inhabitants through either the web or dedicated services (in a secondary town hall or in a library or a school for instance).

A growing number of cities accept that citizens forward their mail electronically to the elected representatives; it is now common that most (if not all) members of the municipal assembly accept that procedure. The same process is being implemented gradually with civil servants as well. As one may expect, the most common practice deals with computer specialists and webmasters who are among the forerunners for email servicing the population. Some projects try to mobilize input by the citizen to discuss municipal issues.

Hérouville: on the city’s web site people can express their views on the site as well as on the municipal program. A survey was carried out to evaluate the population’s feelings about new technologies by means of a questionnaire distributed to everyone in town. The town hall has established an electronic forum to gather, over two hours a day, any reactions dealing with Internet matters. This was set up in March 2002 because of the national event “la fête de l’Internet.” This experiment is bound to continue as it has been a great success. Other projects under way include: a local TV channel “citizen TV”; broadcasting the city council meetings online; cheap second-hand PC leasing for low-income families; learning sessions organized for lay people, to introduce them to computers and web services, etc.

Issy-les-Moulineaux: a local freely accessible platform “Info Services d’Issy” was established by the municipality, on the model used by corporate information or consumer services, where citizens can inquire about almost any topic concerning the local life. The population can also post electronically on the city portal any messages aimed at city officers of any nature.

In Valenciennes, local network users are regularly polled and asked to formulate their feelings about their city district life or services.

The Joinville web site allows citizens to raise questions for the computer center management and to express their wishes for the future.

Vandoeuvre is in France one of the pioneer cities for e-voting. Two systems were tested: one American brand working online (Election.com), and another one operating from the election bureau (e-poll). It should be noted, however, that e-voting is not yet usable in France as a regular means of democratic expression to cast real democratic votes: the “electoral code” of the French republic does not allow electronic voting in regular ballots such as presidential elections or legislative elections. So the local ballots organized (for instance in fall 2002 in some Paris districts) do not deal with political selections. E-voting is purely indicative for the time being in France. It acts like a “mock
"election" as a substitute for local referenda which have no legal standing in the present French Constitution.

**Technologies**

In our panel of French municipalities, we found a very limited number of specific technological developments; on the contrary, most technologies are hired or bought on the market, as they are available off the shelf. Servers, software, terminals, networking equipment are usually acquired by the city and paid with regular budgets (e.g. Parthenay 100 percent local funding).

In some cases, local working conditions have changed considerably: 250 city agents work daily on a computer of which many (160) freely access the Internet (Hérouville).

The local cable system works with HCF technology (Hybrid Fiber Coax), with optical fiber cable almost to the home (Montpellier).

Any inhabitant can use high-speed Internet services at home and access the Internet on their TV screens. Similarly those using a computer at home may connect it to the cable network (Chooz).

All online municipal administrative procedures are regularly revised and audited (Vandoeuvre).

**Identification, certification and security of transaction**

As e-government is about secure, legally binding and trustworthy transactions of any kind (business, financial and administrative) it is instructive to understand the French approach. With regard to security of transaction the French solution is mainly focused on the central national portal http://www.service.public.fr/.

1 All financial administrative transactions operate for the time being through this national portal. To pay taxes online, for instance, one may connect the portal, identify oneself, specify the type of tax one wishes to pay electronically, then complete the specific banking or savings identification of the account to be debited.

2 If one wishes to register with local city services, like Parthenay InTownNet or ACV Valenciennes, one should be recognized as a listed citizen of the city, identify oneself and store the query on the site memory. The system adopts an address type (richard@acv.fr, dupont@intownnet.com).

3 To order special ID documents, one should also identify oneself online (name, etc.) with enough detail to avoid a breach of privacy as much as possible (état-civil).

**Access**

Apart from using a PC at home or at work, other channels are installed to use the e-services and e-democracy applications in the municipalities. A rather innovative example is Cybemobile in Joinville, already mentioned earlier. Several cities in our sample provide assisted terminals in libraries, cafés or other public locations.

• In most cities, web café or multimedia rooms are open to the public; the public can ask for help from the supervisors available in these public locations. As configuration and
maintenance is always a problem, some support is also available for that (Parthenay city council acts both as an ISP and as a server with similar services to those offered by competitive ISPs, including a hotline).

- Vandoeuvre has nine publicly available points of access with at least ten computer desks each, and all peripheral equipment (printers, scanners, modems, etc.). The public municipal library offers 17 posts, and a series of digital equipment (digital camera, mixing equipment, etc.). Among the local school equipment, at least 80 desks are prepared for free public access.

- In Le Havre, people can either use their own home terminal or access the city multimedia Cyberespace Communal, free Internet services, and more digital applications (camera, scanner, video).

- In Issy-les-Moulineaux, all schools were connected to the net as early as 1998. Today there is one multimedia connection for 21 students, all municipal libraries are Internet efficient, with many computers accessible to the public. The 5,000 families living in Issy with a cable TV connection can watch the local channel “Issy interactive” whose programs are also accessible on the city’s portal site.

- The city of Montpellier has operated a cable TV system since 1983. All homes can access broadband equipment, and all “Maisons Pour Tous” access high-speed Internet, as well as all elementary schools with 20,000 work stations available. Cable subscribers may choose between six different operators with plenty of public booths to access the Internet in the city.

**Skills**

The required skills to operate and maintain the e-systems are twofold: one aspect is hired on the market (webmasters, system analysts, operators); the other aspect is trained and selected among the existing civil servant personnel. In the French context, it is clear that not all municipal officers are equal: the majority of municipal employees are lifelong hired civil servants, recruited after school according to nationwide public exams.

These form the vast group of municipal personnel, with standard qualifications and standardized salary grids according to their level of academic diplomas and personal career history. Training those employees is always feasible, but their professional skills put them into rather pre-determined positions in the staff, which do not always fit well with new technologies. As for the more engineering-type personnel, they are much less numerous than civil servants and they are paid almost according to regional or local competitive salaries for their kind of job.

All towns and cities are confronted with this dichotomy in personnel skill and recruitment, as is the French State itself. There are now well-established practical solutions to handle that gap in technical knowledge between high-tech personnel and civil servants, although this problem may sometimes raise difficult questions at a local level (shortage of competent personnel and significant differences between salaries in both groups of employees: civil servants versus those with high-tech qualifications).

In Joinville the main problem has been to spot the right personnel able to play that role with the public. Of six technical supervisors, two were trained and switched from their previous job in the municipality, four have been hired on the market.
Further training

It makes sense to distinguish between traditional and more innovative methods to carry out further training.

Special training sessions took place in Aix-en-Provence when computer procedures were first introduced. These training sessions brought together a number of municipal officers and followed six steps: general overview, navigation, electronic communication, etc. Every municipal agent has been trained at least once in electronic mail and Internet browsing. A few have also learned how to design and install web pages.

Any municipal employee and any local person in Montpellier can register free to attend the municipal training workshops dealing with the net and with computer messaging.

In Vandoeuvre all officers can join a user “club” enabling employees to chat with each other and inquire about net procedures, so that club members support each other in their learning experience over the forum. At the site of the multimedia municipal library, a special room is available to check learning with two full-time supervisors/advisors. Three special training rooms are also available for youngsters to become familiar with ICT equipment and services.

In Chooz the local inhabitants have received free training in computer practice since 1997, by means of a 32-hour course in 2000, new and more comprehensive sessions were organized. And, since 2003, residents can participate in distance learning.

Identifying users’ needs

Most cities in our survey claim to develop their e-government projects in more or less close contact with the public. As far as we could determine from interviews the main feedback mechanisms are inquiries in the concept generation phase, and in-between, and interpretation of email communication. Some typical cases noted during the study are described below.

Vandoeuvre: a significant survey was carried out in 2002, managed by municipal personnel. The questionnaire was distributed to all 15,000 homes in town, with the following core results:

- 42 percent feel quite comfortable with using the Internet
- 37 percent visit the multimedia rooms regularly
- 81 percent have Internet access at home
- only one-third knew about the city net site
- 14,000 have cast a test ballot electronically.

Parthenay: according to the last municipal poll, over 40 percent of the population is now accustomed to the computer age. The public booths are used everyday by over 200 people; 8,000 electronic mailboxes were opened by local persons; and more than 120,000 web pages have been set up.

External resources: partnerships and co-operation
There are not very many co-operative links between the municipalities and third parties. As a general rule, external ties are limited to purely practical matters (with product providers and software houses).

Among the co-operative efforts noted in our survey, two are worthwhile mentioning here. One is the historical operator (and still quite dominant telephone company) France Telecom, because this company has kept a long-term tradition of local subsidy to the municipalities active in new media developments: this dates back to the telematics period (at the turn of the 1980s) when the public telephone operator was forced to be involved in implementing the Minitel program.17 The other example of co-operative effort is the school and university system, which is more often than not concerned with the municipality in the vast majority of cases; in smaller towns like Chooz and Parthenay where no major professional school system is available, secondary schools make it; in the university cities (Aix, Le Havre, Montpellier, Valenciennes) one or several conventions link the city with their local school and academic systems.

Parthenay has also links with several industrial sponsors such as Microsoft, who operated its first European MCIS in this city in 1998; France Telecom and Siemens, who launched in 1997 the operation “1000 Micros,” offering residents equipment, a modem and 200 communication hours for EUR 45 per month during two years; IBM, who lent some of its proprietary programs to the city, etc.

In Aix-en-Provence a software house, Séris, has supported the intranet set-up. At the same time, intranet services are designed in co-operation with local university centers, with distance learning at the forefront of these projects.

For the rest, we have witnessed few and limited connections between the cities and private enterprises: little if any co-operation with manufacturers and software houses; almost no free supply to the municipality and a very limited support from public authorities up until now (European funding, French government subsidy, regional subsidies eventually, but with small amounts). Chooz is an exception in that sense because of the EdF support received (see above) during the nuclear plant building period in the 1970s. The CdC grants now available for equipment and training have not really changed the picture in the cities included in the survey.

**Long-term planning of resources**

As already noted, very little interconnection has been established to date between local e-administration and more national/international systems. Only the web sites connect effectively the ten cities studied here with the rest of the world. And very little evidence shows that this connection is active.

For longer-term planning, it seems that the French municipalities rely heavily on the overall context: none of those included in the survey has yet considered investing in long-term infrastructure networks for their people; on the contrary, they tend to subcontract (concession or BOT18 contracts with private competitive operators) the investments needed, and to expect their territory soon to be branched on the broadband networks (ADSL telephone, TV cable and metropolitan networks when accessible, eventually extended to non-wired network facilities like MMDS or Wi-Fi, etc.19).

As for hardware devices (servers, terminals, screens, links) and software supply (basic PCs and server operations), municipalities buy their products on the market. No real
development has been noticed in the course of the survey, as commercial packages seem to cover the needs of the French municipal operations for the time being.

The special ICT directorate of the national Caisse des Dépots is considering devising a catalogue of products and services for the current use of the French municipalities. At the moment, this catalogue is not available and the local authorities are hence shopping independently according to their needs and to their information.

One more step was taken in late 2002 with a series of training programs, which may later become widely available for mayors and their employees, dealing with the numerous facets of the information age for smaller towns and larger cities. These programs are not yet widely marketed, however. Most training is picked off the shelf from service companies or the university system. It may happen soon that demand is high enough in this category of professional people to justify specialized training for local personnel. No definite view was expressed on that during the survey.

It is clear from other practices of the French cities that specialized training will soon form a new kind of sub-contract commonly used in local town halls. Co-operation with companies, universities and schools is bound to grow in that sector.

Some examples at the local level

One typical attempt was opened in 1998, with a discovery classroom for pupils at school supported by France Telecom research center (Centre National d’Études des Télécommunications), as well as computer manufacturers Compaq and Microsoft. Two co-operating ventures with the Paris science museum, La Vilette Cité des sciences, are under development (Issy).

Most computer equipment and programs were self-financed from the city budget. One exception is the PointCyb, multimedia space for 16- to 25-year-olds subsidized by the Department of Youth (Ministère de la Jeunesse et des Sports) at Joinville.

None of our sample was supported by either European or regional equipment subsidy. Parthenay has, for instance, invested direct funding in their network facilities. This low level of cooperation and linkage to external players is reflected in the usual financing of e-government projects in France.

Implementation problems for local e-government

Problems reported during the survey were the high financial burden, the difficulty of employee recruitment or training, political resistance or incompatibilities, and judicial issues. We noticed less resistance than expected before the study, as demonstrated by the examples below:

• Surprisingly enough for a small isolated provincial village, very little resistance was met in Chooz to new technology applications; the town has not been confronted with any financial burden to implement the program but, to be fair, the nuclear power plant took care of many expenses during the construction period.

• In Parthenay, the main cost was to buy equipment early in the process, and special subsidized credits have taken care of that expense for school equipment and
multimedia rooms; there has been also some concern about privacy matters, this village being the forerunner of local service provision in France.

- The Joinville municipality mentioned the lack of adequate personnel as the main hindrance in implementing e-government according to the plans.
- Issy-les-Moulineaux was confronted with a political debate with minority representatives on the council: they opposed the Internet program because they feared the mayor would take advantage of the program and take deep roots in the city thanks to his stand in favor of ICT (which is partly confirmed years later).
- The problem encountered in Valenciennes was to handle the complexity of the Internet program in its various dimensions. The complex local situation has provoked some delay in the ICT implementation.
- The issue in Le Havre was different again: the complex administrative mapping around this city makes any significant infrastructure project hard to set up because of the real competition between the center city and the neighboring boroughs.
- Privacy issues were also raised in Vandoeuvre, and shocked the electronic vote trial, which was hard to set up. It finally went through, but late and clumsy.

**Future perspectives for French municipalities**

Our qualitative analysis has covered a significant sample from the current spectrum of Internet and new information technologies mobilized in French cities at the turn of the twenty-first century. IT involvement will continue to expand and intensify in e-government projects. Our interviewees mentioned pilot projects and the fact that leading municipalities were bound to explore the potential of ICT for municipal programs. Some if not all will be put in serial usage in a larger number of cities within the coming months. Some examples of such applications in the not too distant future are as follows.

- “L’opération Internet citoyen”: the web site of Hérouville Saint-Clair has been signaled as a priority for the 1991 elected council; the target for this council is to extend the public booth Internet access to all people living in the area. Any location where people gather (bus and tram stations, town hall, library, commercial malls, etc.) will be used to attract the public’s attention to free ICT terminals;
- The main Issy-les-Moulineaux current development is the so-called “Fort Numérique” which is building a twenty-first-century computer mall at the location of a former eighteenth-century military fort in the Paris suburbs; this installation will deliver a combination of remote services such as medical assistance, car pooling, baby-sitting arrangements. There is also a share of this facility dedicated to new entrepreneurs, exhibitions linked with the electronic age, open university conferences, playgrounds for young children, etc.
- The “community cyberspace” opened in Le Havre in 2004 aims to provide a multimedia platform at the center of the city with enough external visibility to signal the involvement of the city in new communication technologies.

Behind these examples, the driving factor for an elected mayor is always to reconcile the city image with a prospective view of technology as a tool for development. It remains to be seen, however, whether the push of the leading municipalities quoted above will drive...
the whole country into the future. Experience with earlier technologies (automotive, chemicals, pharmacy) have rather shown that local conditions also play an important role in stimulating new forms of economic development, with the associated job creation.

For the present time, it is interesting to note that the French population has quickly picked up on digital ICT since 1992, but not exactly in the fields expected by the dominant political vision: the public’s interest turns out to favor anything dealing with images, games and video services, not basic traditional computer applications. In other words, overall, the French consumer favors using computers and networks for leisure activities rather than for educational or knowledge-based applications like accounting, money handling or administrative activities.\(^20\)

Some express their concern to see new ICT bias toward games, leisure and non-vocational activities; others, including ourselves, prefer to look at this trend as an expression of the public’s preferences and take it as experimental data to be addressed by upcoming public policies.

The future of the French city policies in ICT is hence quite open. We foresee a number of developments extending the ones quoted above, in major solvent cities at least; but one should not exclude the possibility that some cities will escape direct involvement in the new electronic media and let market forces take care of this important sector of competitive Western economic activities.

**Notes**

1 The author would like to thank his student Pierre Richard who kindly helped to complete this survey.
3 *Conseil supérieur pour les technologies d’information (CSTI)*: this body is related to the Ministry for economics and industry.
4 General survey published by the telecom regulatory office ART in December 2003.
5 Literally: “The French people favor e-administration.”
7 *Circulaire 3 juin 1998*: to prepare pluriannual programs for administrative modernization;
   *Circulaire 17 décembre 1998*: to generalize electronic access to administrative and public data in general;
   *Circulaire 28 janvier 1999*: to allow free Internet access to official reports of French government sources;
   *Circulaire 7 octobre 1999*: to organize the opening of State web sites in the French government;
   *Circulaire 25 mai 2001*: to generalize online format for administrative forms, etc. See also the following decrees: *n° 98–1083* (17 Dec., 1998, simplification of administrative procedures) and *n° 99–68* (2 Feb., 1999, about online administrative forms).
9 Two cities within our sample are located in the greater Paris area: Issy-les-Moulineaux and Joinville-le-Pont.
10 See the site http://www.villes-internet.net/. Awards are changing over the years: as an example, Le Havre was awarded five @ in 2003.
11 The efficiency of this program may not be asserted yet and should be reviewed later; some expect the impact of the CdC program on information services at the field level to be rather marginal.
12 RPR stands for Rassemblement pour la République, the former Gaullist party now merged into the conservative coalition: Union pour la Majorité Présidentielle (UMP).
13 UDF stands for Union pour la Démocratie Française, a political party formed in 1974 by former French President V. Giscard d’Estaing, covering middle-of-the-road mayors, deputies and senators, rather than independents.
14 PS stands for Parti Socialiste, the leading party of the French Left since 1981, founded by former French President F. Mitterand.
15 This distinction was very clear during the last municipal electoral ballot in year 2001.
16 ACV stands for Anneau Citoyen Valenciennes and is the denomination of the central town portal for members only. Technically it is an extranet.
17 For a historical review of the pioneering period, see Marchand (1988).
18 BOT stands for “buy, operate and transfer,” i.e. a contractual procedure according to which a private contractor takes the risk of investing in public service equipment and reserves the operation of the equipment for a given period of time (say, 20 years for a bridge); BOT contracts are the English wording for the French concession contracts in use since the mid-nineteenth century for water supply, sewage, garbage disposal or public transportation services (e.g. buses and trams).
19 MMDS stands for “Metropolitan Media Delivery Services,” a wireless delivery of radio and TV services used in urban areas as a substitute for cable TV distribution; Wi-Fi is the acronym for another type of low-power wireless delivery service to link computers, telecommunication devices and printing equipment in office buildings, airports, hotel premises, factories, etc. Wi-Fi is being generalized in Europe according to the model of private local wireless services widely diffused now in North America.
20 Recent commercial surveys show that France was one of the most active 2003 European markets in digital cameras, while the same was true two years before for DVD equipment.

Bibliography

Local e-government in Germany

Helmut Drüke

Task and theoretical concept of monitoring

By monitoring domestic local community applications, a systematic picture of the state of e-government in German towns, cities and local communities in June 2002 was obtained. The profile of e-government is being studied for a sample of 26 German municipalities. In keeping with the overall MEDIA@Komm program, the study is based on the extended definition of e-government which designates all aspects of government and administration (determining public opinion, decision-making, creation and provision of services, public participation) as e-government insofar as they can be supported by the use of information and communication technology. This takes into account the accurate opinion that “electronic government penetrates the everyday activities of the administration and democratic politics”. Thus, “it is applicable to all mutual relationships between citizens, business companies, facilities in the non-profit-sector, politics, government and administration” for which “completely new structures must be created” (Memorandum 2000:2).

The starting point of the considerations is the conviction that a command of ten factors is crucial for the success of the project “virtual town hall”, and that these factors together are therefore the critical success factors (see Table 1.4 in the introduction to this volume).

Questions and methodical procedure

This study supplements the analysis of the accompanying scientific research to the multimedia support program/competition MEDIA@Komm of the (then denominated) Federal Ministry of Economics and Labor (BMWA) in its content and methods—the content in that reference points for comparison and continued development are found for the sponsored projects, and the methods in that the sponsored projects are compared with projects not sponsored by the Federal Ministry on the basis of the same theoretical approach. The solutions of the “MEDIA@Komm municipalities” and those in the municipalities not sponsored by the Ministry of Economics are compared with each other in relation to each of the success factors (situation in June 2002).

The central questions of the monitoring are:
1 What is the state of development of the virtual town hall project in German cities and local communities as a whole, i.e. as an all-round modernization project?

2 How are the challenges that are faced in the framework of MEDIA@Komm dealt with in the e-government projects not sponsored by the Ministry of Economics?

Both questions touch on the relationship and comparison between the MEDIA@Komm municipalities and the other municipalities. By determining the state of development in the cases not sponsored by the Ministry of Economics, it is possible to determine whether and to what extent a discrepancy has arisen in the development of German e-government due to the fact that the prize-winning municipalities have received relevant financial, political and technical support for individual projects, whereas other municipalities had to finance their own projects themselves or from other sources.

In 26 selected municipalities the persons responsible for e-government (such as e-government co-ordinators, IT experts, heads of the responsible departments or authorities) were asked about the e-government project in their municipality. The cases were selected on the basis of a self-assessment of municipalities in a survey that was carried out by the Difu. The municipalities were asked to assess the development stage of their e-government activities. The top 20 of the ranking plus six other interesting municipalities were then chosen for the study.

The interviews consisted of two main blocks with different goals: first of all, details were obtained to reconstruct the history of the project, and second information was ascertained about the profile of the e-government project, including details of the nature of the factors for the success of the project.

The second block collected data to determine the current status and contours of the profile of the e-government project in relation to the factors for success presented in the introduction to this volume.

Finally, consideration was given to future plans. This covered the future configuration (extensions, consolidation, reductions), the planning of funds, especially the provision of resources (finance, personnel, knowledge), and the integration of additional or new participants.

Case study results

The evaluation of the results of the survey provided a profile of the virtual town hall in the municipalities included in the survey, and this profile is reconstructed step by step here. First of all the project history is traced, and then the state of development of the success factors is discussed. Finally, the major obstacles which the respondents see to the creation of the virtual town hall are reported.

Project history

In the MEDIA@Komm municipalities, the impetus came from the competition for funding. In Bremen the competition entry drew on a number of existing activities, especially in connection with the Bremen municipal information system and
administrative modernization. In Nürnberg, the concept was developed especially by the participants in the Nürnberg initiative for the communications sector together with the local community business promotion association. Esslingen was the only municipality which had no prior activities.

Only two large cities in category A (with more than 500,000 inhabitants) state that the e-government project arose “in the framework of a systematic plan”. A number of municipalities, especially medium-sized and small towns and cities, used organizational restructuring as the reason to introduce e-government. Thus, three municipalities combined the creation of e-service points for the citizens with the organization of online services. One small town began with the focus project of “simplifying the meeting and information service for the members of the local council” (statement of an interviewee).

Almost a quarter of the municipalities reacted to external factors such as “initiatives by other municipalities” (four municipalities) or regional or national tenders and competitions such as MEDIA@Komm (four municipalities).

The difficulty of categorizing the answers clearly is illustrated by the frequent mention of persons and/or individual authorities as the source of the initiative. It is only natural that the above initiatives cannot be isolated from the individuals who take up developments elsewhere and apply them to their own municipality, who place innovations on a broader basis or who use individual events such as the G7 summit of 1998 or the construction of a new administrative building as an occasion to develop new structures for co-operation and communication in the internal and external contacts of the administration.

Among the reasons for establishing e-government in local communities, the goal of improving transparency and the provision of information for the citizens was clearly predominant (42 percent of the responses), followed by the wish to introduce e-government as a means of increasing efficiency and rationality in the administration (28 percent of responses).

Of course, the reasons for adopting e-government are fundamentally not very different from the range of goals of the multimedia promotion program and municipal competition MEDIA@Komm. The main difference is the clear priority of the promotion program, and thus the projects in the three prize-winning municipalities for testing legally binding, trustworthy and secure business and legal transactions between the local community administration, the users of the services and citizens.

It is only natural that a wide range of misgivings are formulated, and resistance is offered, to a project as fundamental as e-government. The misgivings against the project reported by the interview respondents can be grouped into four categories:

1. lack of available personnel and financial resources
2. resistance and passivity among the staff and the heads of department
3. lack of the necessary legal and technical framework
4. rejection (non-acceptance) among the potential users.

Factors 1 and 2 relate to how the project is handled by the administration itself, whereas factors 3 and 4 relate to factors outside the local community.

Not surprisingly, asked for the initial misgivings the problem of resources was mainly mentioned by small and medium-sized municipalities. Insufficient finances were seen as the principle obstacle at the start of the virtual town hall project and were mentioned
eight times. The lack of qualified staff, on the other hand, was only mentioned by three municipalities, and one respondent pointed to the low qualification of the project partners.

An insufficient identification of staff and heads of department with the e-government project was mentioned as a relevant factor in the concept phase by representatives of municipalities of all sizes. For the staff, the respondents naturally referred to other subjective problems such as fear of losing their jobs, skepticism about the necessary changes and the feeling of being overburdened with reforms.

For the administrative management, a narrow preoccupation with the individual departments was the most frequent attitude mentioned. It was felt that heads of department were often reluctant to accept some of the demands associated with the e-government project such as harmonization of procedures, integration and compatibility of technical solutions and a stronger orientation toward internal and external customers. In favorable cases, this “narrow preoccupation with the individual departments” (small town), this fiefdom behavior, did not lead them to obstruct the overall project, but they showed a “lack of support” (small town) and gave the project a low priority. Occasionally they had a definite “opportunistic approach” (large city) and sought their own advantage but showed no interest in the inter-departmental benefits of e-government.

As the very graphic description by one project co-ordinator shows, there is still a long way to go before user behavior is really customer-oriented and compatible with the Internet:

First people said “Another new idea”. But now it has become a magnet, and many more people want to join in. Resistance has dwindled, but people still think locally. The data are still entered in the traditional way, and then they are thrown into the “Internet container” as well. This leads to inconsistencies, duplication, different procedures and formats. That is not user-oriented. Internet data need to be designed from the outset with the customer in mind.

(Project Manager of a large city)

Two large cities, both of them with a fully developed e-government system, also pointed out the contradiction associated with the restricted way of implementation of administrative reform in Germany—on the one hand there is a decentralized responsibility for resources and services under the new control model, but on the other hand an integrated and centralized procedure is essential for e-government.

According to the statements from these cities, some city representatives still stick to an overdated understanding of the administrative reform in the sense that they still point out a tension between “central funding and decentralized responsibility”, “inter-departmental co-operation and co-ordination and central decisions” and in the question of “responsibility for online-processes”. The municipalities also sought appropriate performance measurement indicators for “performance comparisons between departments” and the way to achieve completely different “new administrative and working structures”.

In isolated cases, unspecified misgivings about the “feasibility” of the project were expressed and the “ignorance of the management” was mentioned as an obstacle.
Compared with these problems within the local community, the respondents considered that factors associated with developments in the legal system, the technology, standards, etc. played a lesser role in the concept phase of the e-government project. This was definitely different for the responsible persons in the MEDIA@Komm municipalities because the precise requirements of the project placed a central emphasis on these very factors—ensuring secure, legally binding and authentic business and legal transactions between the public administration and its customers.

The greatest problems in the concept phase of the municipal projects not sponsored by the BMWA were the “security, confidentiality and trustworthiness” of the electronic signature, followed by the lack of consistent technical standards and then the lack of compatibility. Some municipal representatives felt that some of the initiatives of the respective federal state governments were less than helpful. For example, the card issued by the federal state of Baden-Württemberg was regarded as competition for the local community projects. Another respondent also regarded “federal state legislation” as a hindering factor. In both cases, however, no explanation was given of exactly what this competition or hindrance consisted of.

To summarize, the interviews on the early history of the project underlined on the one hand the variety of reasons for beginning the e-government project and the major role played by individuals who acted as pioneers and promoters in their municipality by picking up external influences and developments, and on the other hand the outstanding importance of the misgivings about the personnel, financial and motivational requirements for the implementation of e-government in the municipalities themselves, whereas conditions outside the local community, especially in the legal and technical area, were less important in comparison, at least in the early stages of the projects. This strongly introspective view of the problems to be faced in the course of the project is probably due to the distinct skepticism about the adequacy of the available resources and competence in face of the challenges in an e-government project. In comparison, consideration of the state of development of the legal and technical situation seems secondary.

The configuration of the major success factors

**Leadership commitment**

The common element in the most successful German municipalities, whether or not they were sponsored by the BMWA, is the firm political and technical foundation for the virtual town hall. Here, the project was a matter for the top leadership, was given active political support and was managed professionally in the process organization. All of this helped to ensure that the e-government project was not treated as just one project among the many projects designed and implemented in specialist departments.

This is what clearly communicated the importance of the project in the most advanced municipalities and increased awareness of e-government within the administration and in the general public. The personal involvement of the leading persons in the council and administration made it possible to deal with the obstacles and challenges of e-government in a comprehensive change management process. As a rule, these avant-garde local
communities had a comprehensive concept sometimes in the form of a master plan for e-government, sometimes in an overall strategy such as “e-city”.

Strategy

The structural difference between MEDIA@Komm municipalities and the municipalities not sponsored by the Federal Ministry of Economics and Labor (BMWA) in developing an overall strategy for the creation of the virtual town hall lay in the constrictions of the support program. The requirements of the promotion program meant that major elements of an overall strategy had to be defined: goals, starting situation, steps/projects, benefits (usually only roughly outlined), areas of responsibility and participants, costs and personnel resources, funding (contractually committed national subsidies and own funds) and the time schedule (milestones and implementation dates).

Due to the limited time scale for the project subsidies, there was no differentiation between short-term, medium-term and long-term projects; all projects had to fit into the three-year duration of the project. The priorities resulted from the planned implementation dates. No explicit balancing of priorities between the MEDIA@Komm project and other e-government activities in the municipalities was carried out. Strategic adjustments to the project could fundamentally be made quickly and flexibly because of the external organization. However, as the project was subsidized by the national government, all changes had to be approved by the Federal Ministry of Economics (BMWA) and the project sponsor.

In the studied municipalities in Germany that were not sponsored by the Federal Ministry on the other hand, the decision to adopt or reject a strategy could be made internally, irrespective of the constraints and requirements of a support program.

Organization

Owing to the specific content requirements and the special responsibility resulting from support with public funds, all of the MEDIA@Komm municipalities had a highly focused project organization:

- Since 2001, Bremen has had a separate department for new media and e-government which is integrated into the personnel and administrative management department (department 3) of the Senator of Finance. Before the creation of department 36, the modernization of the computer infrastructure in the administration was looked after by the “TuI" (technology-assisted information processing) department under the Senator for Finance. This department in Bremen is now responsible for the development of both administrative modernization and e-government projects on the understanding that technical equipment and organization must always be seen together. Department 36 plans and manages the resources (personnel and costs of assets) for the Bremen e-government projects. In the overall project, the BOS company coordinates the participants from the administration and the external partners. At the same time, it also develops technical solutions. Its role as the co-ordinator is simplified by the fact that one of the managers of BOS is employed by the Bremen administration on a half-time basis, has a long-standing knowledge of the administrative structures and important participants, and was one of the initiators of the project.
In Nürnberg there has been an e-government office since April 2002, which is part of the office for organization and central services in department 1 (personnel and administration). The e-government office acts as a point of contact and a co-ordinating office for all departments faced with the subject, and it is currently developing an e-government concept for the municipality of Nürnberg which will also be valid for the post-MEDIA@Komm period. In Erlangen there is a so-called e-government center which acts as a co-ordinating department affiliated with the office of the Lord Mayor. The municipality of Erlangen developed a concept for the implementation of e-government together with the business consulting company Accenture.

The development and technical implementation of specific online applications for citizens and businesses in the framework of the MEDIA@Komm project in all the municipalities is carried out together with the project sponsor Curiavant Internet GmbH. Curiavant is a 100 percent subsidiary of the participating municipalities and is responsible for the overall project management, including the technical implementation of all sub-projects. The committee of shareholders, in which all five municipalities involved in the association are represented by heads of department, is responsible for project control and questions of finance. Local community core teams formulate the various content and technical requirements of the municipalities and pass them on to the Curiavant project managers. The overall project management lies with the two managers of Curiavant Internet GmbH.

In Esslingen, the project sponsor organization “MediaKomm” carries out the project management for the MEDIA@Komm project. The project manager co-ordinates the various sub-projects and partners from the town, businesses, institutions and the science community. The contractual basis consists of the contracts between the project partners and the subsidizing bodies, the direct contracts between smaller partners or other service providers and MediaKomm r.a. and the joint project planning with specific milestones. The project manager and the managers of the six sub-projects form a joint project control committee. The coordinating group is responsible for quality assurance, ongoing development of the concept and resource planning. The overall control lies with the steering committee which defines the strategic orientation of the project. The steering committee is made up of the Lord Mayors of Esslingen and Ostfildern, the project manager of MEDIA@Komm and three representatives of all project partners. In addition, a steering group has been appointed which is made up of representatives of the association, the central department, the personnel department and the chairperson of the overall staff representative council.

The person responsible for e-government in the municipality of Esslingen at the time of the study in the middle of 2002 was the head of the central and personnel department. From the autumn of 2002, the responsibility was transferred to an advisory department which reports directly to the Lord Mayor (for an initial period of one year). Within the administration, committees have been formed which are involved in the modernization process and the creation of the virtual town hall from the point of view of the municipality: the network of “ESSOS2 representatives”, the staff and the project group “virtual town hall” which has now taken up its activities.

Among the cities not funded by the BMWA in Germany Cologne is using a carefully designed system of responsibilities at various levels in an attempt to counter the tension
between high-level decision-making competence on the one hand and sufficient scope for
decisions for the operational committees at the decentralized level on the other hand
which always exists in large-scale projects.

A major requirement to obtain broad support for the e-government project is to bring
together the heads of department in the central steering committee, as has been done in
Cologne. In Cologne this relates to the departments of organization, personnel, finance,
information technology and external relationships. This steering committee decides on
the overall strategy and its implementation, defines the agreements on targets with the
departments, supervises strategic projects and submits a recommendation for decision by
the municipal directorate “for projects of major importance throughout the municipality”
(municipal documents).

Compared with the general requirements defined in advance and the example of
Cologne, it can be stated on the whole that 14 of the German municipalities questioned
control their local e-government projects according to the pattern of the matrix
organization. This means that projects without any special priority status are controlled
under the responsibility of specific authorities such as the central office, the personnel
office, the organizational office or the computer systems department.

As many as ten municipalities tackle their e-government project with an inter-
departmental project group, partly because this is their usual practice for special projects,
and partly because they consider it advisable for the “virtual town hall” project.

In three non-sponsored municipalities, the ambitious project is looked after by mainly
very committed “individual activists” who are dealing with the task with a vague job
description on the basis of the motto: “See what you can do!” All three e-government co-
dordinators define their area of work on their own initiative and see their task as
incrementally extending the Internet presentation of the municipality to make it a portal
and subsequently an online service offering limited transactions.

What I am doing here is a one-man-show with limited resources—funded,
so to speak, from the current IT budget. The Lord Mayor gives me a free
hand, but no actual support. E-government has a high priority in official
statements, but in practice not much happens outside our department.
Municipal employees or heads of department are the last on the Internet,
and some confuse it with advertising. I have to begin step by step with
things that are feasible and which the municipality can bear, although I
would like things to be different.

(Project manager of a medium-size city)

Re-engineering

The tasks of “re-engineering the procedural organization and transaction process
analysis” play a rather subordinate role in the implementation of the virtual town hall in
the municipalities studied, in contrast with the MEDIA@Komm municipalities, which
have redesigned the structure of transaction processes in pilot schemes, e.g. for citizen
registration, debt collection, building applications, etc. to cater for the requirements of
electronic processing.
An analysis of the selected transactions in the framework of the planned applications for electronic processing was already carried out in the concept phase by the control group in Bremen. Re-engineering has been completed for the well-developed applications in the MEDIA@Komm project, such as debt collection and obtaining information from the citizen register.

In Esslingen, extensive transaction process analysis and optimization was not carried out by the project partner FHG-ISI until the beginning of the project. The results were presented at the beginning of 2001.

In the Nürnberg municipal association, in-depth analysis of transaction processes was already carried out in various cases during the participation in the MEDIA@Komm competition, documented with the ARIS tool, and then optimization proposals were developed which formed the basis for implementation in the project phase. The integration of the back office was developed in the planning, especially for the use of the signature engine. The highest priority in the Nürnberg municipal association from the outside was to implement seamless applications, i.e. without discontinuity of media—both at the front end and in the technical content. This was demonstrated as early as October 2001 with the residents’ parking permit—an application which combined technical content, the citizen registration database, electronic signatures and the purse card in a single process.

The optimization of transaction processes was only developed further by two municipalities. In Hagen (medium-size municipality), the adjustment of the procedural organization to e-government was developed together with staff of the respective specialist offices. Here, Hagen is an example of the intensification and practical application of earlier beginnings in administrative modernization to face the challenges of e-government. In Büchen (small-size municipality), the procedural organization was changed in all areas of service for the citizens.

To some extent, other municipalities have also taken up this subject area: ten municipalities have already implemented individual modules. These municipalities include six big cities, three of medium-size and only one small town. In one of these municipalities, for example, a transaction process analysis for e-services for citizens was carried out in the respective departments, in another there is a standard practice of involving the organizational consulting department in process analysis.

Fourteen municipalities have not yet done any work in the area of “reengineering the procedural organization and transaction process analysis”. This group mainly consists of municipalities of size C, but it also includes some large cities. It was found that the size category does not affect the state of implementation.

It is also noticeable that the municipalities with initiatives for procedural re-engineering have not yet begun with the implementation in the area of re-engineering the structural organization; as a result, it is not possible to determine any correlation here.

“Re-engineering of the structural organization” in connection with e-government has not moved ahead at all in any of the municipalities studied. A symptomatic remark was made by one of the respondents, who said that changing the structural organization especially for e-government is “too much work” (city size A). However, seven municipalities of different size categories have at least begun with the implementation. Changes in the existing structural organization must be distinguished in municipalities in which, owing to the requirements which arise in the implementation of e-government,
offices and subject departments are allocated anew. For example, in one municipality the existing 41 specialist departments are being regrouped to form 16 subject departments. In another municipality, such changes are accompanied by information meetings and training courses to promote acceptance by the staff, because changes in the structural organization are particularly liable to trigger fears among the staff.

Applications

A major difference between the municipalities promoted in the framework of MEDIA@Komm and the other municipalities in the summer of 2002 is the level and breadth of the online provision of complex, legally binding and secure transactions such as debt collection, registration of inhabitants, building permission applications, etc., to name just some of the complex transactions. The number and quality of these services not only meets the requirements of the promotion program, it also represents a leading position in Europe in the provision of legally binding, secure and confidential business and legal transactions.

The main focus of the online services provided by the municipalities not sponsored by the BMWA is clearly on applications in the area of “culture/leisure” and “communication (incl. communication with other offices)”. A large proportion of the municipalities have implemented online facilities for ticket sales, educational facilities (mainly adult education centers) and/or the municipal library. The common element in all of these applications is that they are set up for a broad target group—often with a low turnover—or as in the case of “communication with other offices”, for a closed group of users and therefore within a homogeneous infrastructure. These applications are less demanding in their technical, legal and organizational requirements.

But the municipalities are more reluctant to tackle the complex transactions in areas such as “social assistance”, “residential and registration systems”, “land property, housing and planning” and “purchasing”.

The difference between the size categories for municipalities is clearly seen here. Internet support for “help in social emergencies” and “social assistance” is offered almost exclusively in large cities. The same applies to “land property/planning permission/building regulations” with the aid of network technology. “Purchasing” via the Internet has begun only by large cities.

In these areas, business and legal transactions are strongly individualized,
Figure 4.1 Online applications in the MEDIA@Komm municipalities and the municipalities not sponsored by the German General Federal Ministry of Economics and Labor (BMWA) (situation in June 2002) (source: own analysis).

i.e. related to individual cases, and they also include transactions which usually have a high turnover, which places great technical, legal and organizational demands on data security and data protection in online communication. Some of these applications need a verified electronic signature for online processing. There are also many forms of “formal and informal participation”, which offer a perspective for extended participation in administrative transactions and aim to achieve greater citizen participation in policy formation, which are mainly still awaiting implementation.

These positive initiatives are found especially in the municipalities not sponsored by the BMWA, whereas the subject of participation does not play an outstanding role in the prize-winning municipalities—with the exception of Esslingen—due to the design of MEDIA@Komm. However, the self-presentations clearly show that the subject of greater citizen participation is firmly rooted in the consciousness of the decision-makers and that it will therefore be of increasing concern in future steps toward e-government.

In Esslingen there are various initiatives toward Internet-based participation. For example a special, originally unplanned, emphasis was placed on the implementation of a specific innovative use of the electronic signature, in the online election of the Municipal Youth Council. The online election fulfills all legal requirements. To make it possible, among other things the statutes of the Municipal Youth Council had to be adjusted, and
access to the online electoral roll had to be implemented. Originally 300 young people were interested, and 170 of them actually applied for a signature card. In the last resort, only 34 young people aged between 16 and 19 used this possibility to vote via the Internet after proving their identity with signature cards.

In the framework of a zoning plan process, citizen participation and communication with the council and administration via the Internet were implemented to supplement the classical forms of participation. The online process was intensively moderated and supported. Furthermore, citizen forums were set up in the Esslingen municipal information system, although they were not as successful as was originally hoped.

The most successful form of citizen participation in the municipalities in the study sample was achieved in the city of Stuttgart. The presentation of information from the town hall with regard to municipal politics, the municipal administration, the municipal council and the Lord Mayor is impressive in its clarity, up-to-dateness, user-friendliness and detail.

This quality of the presentation helps interested persons to gain access to information on the subject of citizen participation. Citizens are invited to participate in areas such as “citizen involvement”, “local agenda”, “environment” and “urban planning”. Another interesting element is the co-operation between the municipal administration and the local print media (Stuttgarter Zeitung, Stuttgarter Nachrichten and the official gazette of the city) in organizing its chats and forums as a form of outsourcing.

Citizen opinion surveys (also known as “customer opinion surveys”) in various areas of politics (from city marketing to transport policies) are used more often, even though this is of course a restricted form of co-operation in the reorganization of politics and the administration. In Ulm, citizens participate in an online evaluation of the designs for a new suburban park in a discussion forum set up specifically for this project. Their opinions on the designs by the first two prize-winners “were taken into account in the decision” (interview respondent from Ulm). Wiesbaden also used forums to involve citizens more heavily in municipal policies. A main focus here was on building planning. Construction policies can be discussed with politicians in chats, and the projects are well presented for this purpose.

This category also includes complaint management; the views of the citizens can be taken into account at an early stage, e.g. via the physical letter box or online letter box of the administration, and they can “show the yellow card” to the administration (e.g. in Stuttgart and Wiesbaden). Dortmund has set up a “committee for suggestions and complaints” which is accessible online. The content of citizen participation covers a wide range (from Local Agenda 21 to urban district marketing, children, families, senior citizens, gays and lesbians), but it is also broken down in detail at the urban district level.

Technology

In the application for the MEDIA@Komm project, Bremen already stated that it wished to develop a standard for local community online-transactions which would be called OSCI (Online Services Computer Interface) by analogy with the standard HBCI (Home Banking Computer Interface) used in online banking. A so-called OSCI control office (assigned to the city of Bremen since January 2002) aims to ensure that the development of the “local community protocol standard” for online-transactions is continued. A
specifications document became available at the end of 2000 and has been the subject of intensive discussion since then. OSCI is already used in various projects, but not all of them are connected with MEDIA@Komm.

Governikus and OSCI are regarded as key technologies in the Bremen project. The name Governikus stands for a system architecture for secure and legally binding applications in the area of public administration. It is a platform which has been developed for e-government and can be used to carry out online transactions irrespective of the technology used and the manufacturer. It enables forms to be provided, filled in and electronically signed online, then sent back to the public authority by secure data transmission.

The Nürnberg solution of one transaction infrastructure for the automation of administrative procedures enables administrative procedures to be implemented effectively in the local computer infrastructure. The architecture used in Nürnberg is especially suitable for the migration of existing administrative processes. This is illustrated by a number of examples: the residents’ parking permit and information from the citizen register reflect the departmental procedures at the application level, the signature service (signature engine) is a special domain-specific transaction infrastructure for e-government, the user service and web layer are basic functions and architectural elements and thus the basis of the middleware.

The more advanced development of platform 2.0 is an important basis for the fast and flexible development of administrative procedures on an electronic basis. They provide all decisive services such as authentication, signatures, payment, secure delivery and administrative components such as user administration, logging (transaction documentation) and configuration. Multiple-layer architecture, clear separation of different tasks, encryption of configuration data and other data and the physical separation of the data of different clients lead to a high level of security, which is especially required in the local environment.

The development of applications which make extensive use of the electronic signature as a smart card solution is the explicit task assigned to the prize-winning MEDIA@Komm municipalities by the Federal Ministry of Economics (BMWA). The concluding remarks of this book show that this approach has now become the hallmark of the German solution for e-government. The concluding remarks of this book show that this approach has now become the hallmark of the German solution for e-government.13

• In Nürnberg two local community applications with electronic signatures were implemented by May 2002 (information from the register of residents and residents’ parking permits). There are also applications for business, e.g. the works identity card and applying for certificates of origin with an electronic signature. By the end of 2003, about 30 applications for citizens and business companies were offered online with a digital signature. By May 2002 about 1,000 signature cards (so-called flip-chip cards) were issued, including about 25 percent to pilot users.
• In Bremen, 35 applications with electronic signatures were counted in May 2002 although this includes the same transactions for different providers which are counted singly (e.g. notifying changes of address to municipal utilities, post office, etc.). By the end of the project in 2003, over 180 transactions with electronic signatures were planned to be online. The perspective in 2002 was to issue more than 10,000 signature cards to citizens and business companies.
In Esslingen two pilot projects with electronic signatures were tested (Municipal Youth Council elections and activities in the youth network, e.g. lending of appliances). In the middle of 2002, no applications with electronic signatures for citizens or business companies were online in Esslingen. In Esslingen, various scenarios for the use of the card were tested in practice with a group of employees, and a report was compiled.

In all three MEDIA@Komm municipalities the signatures are initially being used on a trial basis, so the back-end offices of the administrations have only been involved in transaction processes with the electronic signature to a small extent. In Bremen, there are three applications as of May 2002, which operate completely seamlessly. They include registration of changes of address, electronically signed direct debit (payment procedures) and electronic debt collection. Residents’ parking permits in Nürnberg, Fürth and Erlangen and online information from the citizen register in Erlangen are implemented completely seamlessly with the electronic signature and purse card payment. In addition, applications such as course registration at adult education centers, online theater tickets and research in the online catalog of the libraries in the five municipalities of the Nürnberg association have been implemented seamlessly. The so-called simple transactions such as looking for accommodation, minimum income calculator, bulky waste collection, tree protection ordinance, reporting of property lost and found and orders for waste containers are seamless for users in the municipal association. As of June 2002, there are no applications of the electronic signature in Erlangen which are completely seamless.

**E-skilling**

In Esslingen, various basic training courses for specific new applications have been held. To some extent they are supplemented by e-learning facilities for specific questions, e.g. using the Esslingen municipal information system or electronic signatures.

In Nürnberg, regular information meetings are held:

- every three months there is a presentation to the councilors in the five municipalities
- every three months there is an information meeting for all municipal staff involved in the project
- every two months there is a newsletter with information related to the MEDIA@Komm project for all interested persons from the five municipalities, business companies and the wider MEDIA@Komm environment

The municipalities are also given support in the development and implementation of further internal information and training events. Regular exchange with the top leadership of the municipalities brings the local communities up to date, and this knowledge is then passed on.

The municipal further training institutes are in regular contact with the MEDIA@Komm project, and the employee representative council takes part in all meetings to represent the municipal staff. Involving politicians and administrators in the flow of information ensures acceptance.

In Bremen, lectures on e-government are given as part of the in-house vocational training concept. This is in keeping with the tradition in Bremen for the introduction of new technology, which is always linked with information and training. The employee
representative council is always involved in the planning at an early stage. In addition, the management is very receptive to new technology and there is a high degree of competence in the council and the administrative management, which provides a number of opportunities for training courses in new areas.

The respondents in the municipalities not sponsored by the BMWA consistently stated that their staff and managerial personnel were unprepared for the competence and abilities needed for work in the virtual town hall.

The representative of one small municipality considered that “the insufficient competence of the personnel” is the greatest of all obstacles. The discrepancy between the necessary qualifications and the existing qualifications is felt to exist particularly in the command of the programs and procedures. Many believe that “basic computer knowledge” or “Internet competence” are lacking (6 and 13 respondents). Three respondents stated that there was a lack of “understanding for e-government”, both among the staff and among the heads of department. Five respondents also believe that this group has a “lack of organizational and leadership abilities”.

Qualification concepts geared specifically to the problems of e-government were only offered in three municipalities (Berlin, Cologne and Baden-Baden). Cologne regards courses on the “use of co-operation tools in the framework of extended office communication” as an important area for qualifications. As a rule they involve courses which concentrate on improving basic IT knowledge and skills in using the Internet. They lead to the qualification known as the “Internet driving license” http://www.ecdl.com.

Involvement of the administrative clerk

Since the start of the project, the staff in the municipal administrations in Nürnberg have been systematically and regularly informed and actively involved in the discussions and developments of the project. The specialist authorities and departments were involved in defining the projects to be implemented, and since the start of the project this has been ensured by participation of the municipal staff in the individual projects. In addition to the staff directly affected by the project, other departments such as the employee representative council and the www office have been involved in the projects.

Regular information is regarded as essential in Nürnberg, and the project participants, councilors and decision-makers in the municipalities are informed in different ways at various intervals. In addition, low-threshold information such as posters and information flyers are provided and put out in places accessible to the public.

Bremen provided systematic information about the MEDIA@Komm project to the staff of the municipal administration in a variety of ways. In keeping with the traditional procedure in the Hanseatic city, the staff were closely involved in the project at an early stage. The employee representative council was actively involved early in the project.

Of the 26 municipalities studied which were not sponsored by the BMWA, 17 stated that they had involved their staff in the e-government efforts of their municipality, with a slightly diminishing tendency in small municipalities of size category C.

As a rule, the staff are acquainted with the e-government project by general announcements and/or in the framework of their involvement in specific projects.

Compared with this general practice, the procedure in Cologne is particularly striking. The administrative staff are involved in many ways:
in the central management structures through the IV forum (regular conference of user supervisors, quarterly)

- in the steering committee through departmental representatives
- on a project basis through regular participation of users in the project group
- by the regular (annual) exchange of experience with the personnel representatives.

Stuttgart adopted a special measure which aimed to promote decentralized competence and enhanced familiarization of the staff with the e-government project. So-called editors were selected from the “ICT technology” and “organization” departments and given special training. The specialist departments now have 70 persons who can be contacted. They are entitled to write data for the specialist department. This activity is not registered anywhere in the job descriptions. The experts on decentral level work between 15 and 20 percent of their time for the Internet. The project manager states that this activity is meant to be more visible and to emphasize the tasks in the administrative public and the personnel assessment. A number of municipalities have made pioneering agreements (e.g. Hamburg). In the “Esslingen declaration” of September 2001 the trade union in the public service called “ver.di” adopted a clear position on the prospects, opportunities and dangers of e-government in the local communities in the federal state, and this could form a basis for the involvement of the staff in the projects to establish the virtual town hall.14

### Integration of the administrative management

The broad integration of the staff depends crucially on the willingness of the administrative management to regard their staff as active participants in the process of change. Naturally, this can only succeed if the management themselves are regarded as major participants in the e-government project.

It should be taken for granted that the administrative management are intensively involved in the e-government activities from the outset, so it is surprising that six of the 24 municipalities not sponsored by the BMWA stated that they had not included their own management personnel in the e-government project.

In most cases, management staff are represented in the project steering committees. The extent of the activities and the opportunities for a greater involvement of the management vary widely from one municipality to another. Cologne is also very committed in its treatment of the administrative management:

- There is a special co-ordinating department for e-government issues.
- The management level is represented on the steering committee.
- For the top level of management (section chiefs, heads of department and their deputies) a special workshop was held.

The involvement of the management has a similar structure in Düsseldorf, which is mentioned at several points in the report as one of the leading municipalities in its strategic and systematic e-government procedure.

### Marketing
Marketing is understood as external advertising for the virtual town hall project to draw the attention of parties outside the administration to the new opportunities to gain partners and reach promoters and publicity partners who can be beneficial in providing further support for the project.

Finance Senator Perschau, as the person with political responsibility for MEDIA@Komm in Bremen until 2003, acted as a very committed representative of e-government. He appeared personally at all important official events, held the opening speeches and maintained contact with other municipalities (e.g. “Best Practice in E-Government” conference in Brussels in 2001, conference of the major cities in Europe, conference “E-Gov ante Portas” in Bremen in 2001 and 2002). He also involved himself in contacts abroad (e.g. negotiations with Microsoft on the integration of OSCI in MS products), and in Bremen itself he was also a “promoter” of e-government, for example he maintained close contact with business companies and politicians (invitation to the CDU parliamentary group to inform them about e-government, information meetings for Bremen business companies). This spirit also characterizes the external appearances of the project team, which are becoming more numerous due to the high national and international awareness of the achievements in Bremen.

In the past, lack of information about the project, its goals and progress were frequently expressed criticisms of the MEDIA@Komm concept in the Nürnberg municipal association. Neither the municipalities involved, the project organizers, nor the accompanying research felt sufficiently informed. The project organizer Curiavant reacted to this problem, which was largely caused by the extensive organizational and participation-based structures of a municipal association made up of five participants, and presented a new communication concept. It envisages the provision of more information about the goals and progress of the project, both internally and externally. To this end, the new domain http://www.digital-ins-rathaus.de/ was started in April 2002 to provide information about MEDIA@Komm in the municipal association. Other activities such as information meetings for Lord Mayors, councilors and the staff of the administration round off the concept internally.

In Esslingen the project activities were regularly communicated to the population/business companies via press releases, events and other channels. Especially at the start of important projects (e.g. the online municipal youth council election, the start of CityMall 21 and the virtual construction platform), extensive advertising was carried out in the town and the region. A number of competitions were held, e.g. to appeal to young people and business enterprises. The PR activities were often addressed systematically to the respective target groups. But there was deliberately no broad and sustained marketing because the parties responsible for the project believed that acceptance for (signature) applications can only be achieved if they work faultlessly and offer their users real extra value. The completion of the product “AllSign” by September 2002 has fulfilled this condition on the part of the local community, so that “normal operation” can then be marketed, perhaps by an operating company.

External marketing for the virtual town hall is carried out by as many as seven of the municipalities not sponsored by the BMWA. The activities cover a broad range: generating competitions, broadcasting of messages/information and designing individual concepts for e-government in which the central municipal marketing department is involved as well as developing and implementing a marketing concept for the Internet.
Co-operation

The MEDIA@Komm municipalities co-operate with a wide variety of partners from business companies to research institutes—this was stipulated in the conditions of tender for the competition which required public-private partnerships—in the form of co-operative ventures, client-contractor relationships or outsourcing.

In Bremen there are a total of almost 50 private and public partners with which different projects are being implemented, e.g. change of address, award of public contracts, electronic debt collection and online information from registers. The co-operation with external partners in the framework of the MEDIA@Komm projects is the responsibility of BOS GmbH & Co KG. BOS is itself a public-private partnership company owned jointly by the city of Bremen and private companies. BOS co-ordinates all parties involved and, as the project organizer, also has contractual arrangements with individual IT service providers.

Co-operation with external partners in an area which includes new areas of technology is, of course, time-consuming and not always successful. In the case of the platform to process the online services, it became apparent that one contractual partner was unable to provide the solutions that were promised, and BOS thus decided at short notice to develop a solution itself. Co-operation with municipal departments is also sometimes difficult in relation to the available technical equipment because old departmental procedures need to be adapted for use via the Internet. This adaptation can be very time-consuming for the municipal computer centre, e.g. for the residential registration system.

The Esslingen project was designed as a joint project to include co-operation. There were a number of partners from business companies and research institutes, some of which were responsible for the leadership of sub-projects.

The co-operation with private partners was time-consuming in Nürnberg because of the range of the original concepts, and it did not always lead to marketable results. The subject of the electronic signature, in particular, was relatively new for many of the participating companies and was influenced by many factors, including the decision-making processes within companies. Some companies are still in the process of finding out about the use and possibilities of electronic signatures and do not (yet) want to commit themselves. Co-operation with business companies has so far been characterized by a large number of contacts and discussions, especially with regional and local businesses. This led to several specific projects, and these projects will be successful as electronic business transactions with signature services become more prevalent.

Co-operative ventures

Co-operative ventures exist in almost all of the municipalities not sponsored by the BMWA (in 21 of 26 municipalities). But the proportion of municipalities with co-operative ventures is smaller in small-size municipalities, with six out of nine
municipalities. Differences are observed in the sectors which the partners come from, and in the subject, scope and form of the partnerships.

Fifteen of the 21 municipalities have partners from the business sector, five of the 15 have another partner from initiatives/associations or other local communities. Partners from the business sector range from large corporations such as SAP or IBM to small local software and Internet companies. Science and research institutions are partners of three municipalities—in each case, the partner is a traditional university or a university of applied sciences. Five municipalities have selected partners from initiatives and associations (e.g. D21, local associations). As many as five of the municipalities cooperate with other local communities or local community facilities (e.g. local community data centers). It is noticeable that especially smaller municipalities have partners outside the business sector.

The partnerships are generally technical in content, i.e. the partners help in the technical implementation of applications, platform maintenance or the creation of databases. Other local communities operate the whole portal or individual sections together with their partners. In individual cases there are also partnerships for marketing the platform and for joint development of marketing concepts for e-government.

But the extent of the partnerships in the individual municipalities varies widely. The size of the municipality is not important. Some municipalities have extensive partnerships with up to eight partners, some also have a number of smaller partners, e.g. for the information and services offered on the platform. Most municipalities, however, have one to three partners.

In terms of the legal form, the classical form of private contracts is pre-dominant, whereas new forms such as the public-private partnership (PPP) with operating companies which are usually limited partnerships (GmbH & Co KG) are still the exception.

External networks

Networks in the sense used here, with external participants that arose or became relevant in connection with the e-government project, were mentioned by 15 of the 26 municipalities not sponsored by the BMWA. Only small-size municipalities are less involved in networks due to the obvious amount of time and finance needed to maintain the contacts.

The network partners mentioned were often associations and interest groups such as the German Convention of Municipal Authorities, the Joint Communal Association for Administrative Simplification (KGSt) or D21. There are also more specific networks of a regional nature such as “Projekt Ruhr GmbH”, the “Digital Ruhr District” (five of the 15 municipalities) or a municipal network in the south-west of Germany linked with municipalities in France and Luxembourg. Involvement in EU projects (eight of the 15 municipalities) also led to international contacts.

Partners from the scientific and research sector tended to play a subordinate role (three of the 15 municipalities). The exchange of experience here, as with associations and initiatives (relevant for five municipalities), is usually through committees.

The networks range from a loose, informal exchange of experience to fixed forms of exchange about specific projects. The networks deal with issues such as the exchange of
data, a joint Internet presentation, the development of an industrial size atlas for the region, the joint creation of business start-up portals or a simple exchange of knowledge and experience.

**Sustaining the resources**

In Esslingen, a large part of the further tasks of development became the strategic responsibility of the municipal administration after 2003. The association continues to exist and undertakes new tasks. A number of infrastructures and areas developed in the framework of MEDIA@Komm (e.g. municipal information system, AllSign solution, construction platform, CityMall, learning platform, network of mentors and citizen PC) are to be taken over and continued by an operating company.

The funding of the e-government projects after the end of subsidies is still uncertain. Calculations have already been prepared to show the minimum amount which the municipality should bear as from 2003, and new jobs in the administration have been planned. But under the high pressure of financial consolidation which Esslingen is currently facing, like most municipalities in Germany, the planned funds are not sufficient to ensure a systematic continuation of modernization through e-government. Certain expectations are therefore placed in the future operating structure in the hope that the virtual market place and virtual town hall will offer economically viable prospects. Especially the joint use of the infrastructure by the administration and private business and the vertical value creation processes will, it is hoped, make operation profitable.

In Bremen and in the Nürnberg municipal association, business plans are being developed to ensure the market capability of the BOS and Curiavant companies. By forming e-government departments in the municipal administrations in 2001 or 2002, the specific knowledge is preserved. Even after the subsidies end, additional e-government projects will be implemented there and other departments will be involved in the course of the projects.

Among the local communities not sponsored by the BMWA, hardly any municipalities will meet the demands for the transition of the e-government project from an enthusiastic beginning to the phase of consolidated expansion. Only five municipalities (Hamburg, Cologne, Stuttgart, Dortmund and Ulm) have ensured in their budget and personnel planning that the e-government initiatives can be carried out over and above the activities earmarked in the annual budget. But even here, this medium-term securing of funds sometimes only happened, i.e. not with a clear allocation of budget funds, jobs and knowledge activities to the e-government project.

The closest arrangement to a clear allocation of funds can be seen in Cologne. The central budget of the Internet editorial team covers the funding of online projects and, via the budget of the co-ordinating department, ensures the central funding of strategic projects, whereas decentralized projects are financed by the specialist departments.

In the case of Hamburg, the investments and the initial costs of the training courses are covered by the ICT budget. Training courses in normal operation must then be covered by the specialist departments. It is also stated that the form of the commission by public authorities, with clearly defined calculations, excludes the possibility that projects that have begun will elapse accidentally. The positive cash value is allocated for three years after the investment. Ulm states that the funds are ensured in the short- and medium-term
in the framework of the budget plans and that the personnel is planned for about three years in the personnel development plans.

**Hindrances and problems**

The development of local e-government is an immense challenge especially in times of financial restrictions in the municipalities and local communities. In their responses, the municipal representatives consider the financial restrictions to be overwhelming—and in 12 of 26 municipalities they see them as the major obstacle for the local community level. Other factors mentioned are the lack of qualified personnel and the lack of willingness in the population to acquire the electronic signature (both mentioned five times).

At the regional level the municipal representatives miss a stronger exchange of experience and a joint approach of the municipalities (six mentions).

At the national level, the representatives of the municipalities and local communities are mainly aware of the difficulties with the electronic signature and the low level of standardization (four mentions each).

The sense of the electronic signature is discussed in some responses. As a representative sample for several responses, here are a few thoughts expressed by the representative of a big city: he explained that the provision of the relevant services cannot move forward at the local community level because the electronic signature is “too strictly regulated” or there is “legal insecurity about the electronic signature”. The high standards defined for security, authenticity and identity are like “using a canon to shoot at sparrows”.

**E-government in a highly complex local community sphere of action**

An analysis of the German e-government projects not sponsored by the Federal Ministry of Economics and Labor (BMWA) showed impressive and exemplary progress in some areas, but it also showed serious shortcomings and deficiencies. The most significant gap, the strategy deficit of most German e-government projects, has already been discussed. The following points must also be mentioned:

- lack of personnel development concepts geared to the requirements of the e-government project
- incomplete integration of staff and, to some extent, managerial personnel in the planning, design and implementation of the e-government project
- serious gaps in the project management, especially the rather traditional organizational control and the inadequate monitoring of the progress and result of the project
- uncertainties in the co-operation management with external participants of varying categories and in the practical application of modern forms of partnership such as public-private partnerships
- lack of methodically substantiated profitability calculation based on standard parameters such as return-on-investment or break-even
• the frequent lack of any adaptation of business processes to the new production and
distribution forms of services in e-government.

These weaknesses and gaps are not primarily due to any failure of the administrative staff
responsible or any inadequacy of the heads of department. The reasons go deeper—and
lie especially in the complex field of activities for the local participants, which is
characterized by the diverging development between the pressure to act on the one hand
and the possibilities for action in the local communities on the other hand. The result is
that it is increasingly difficult to set up a coherent modernization concept which is
possible with e-government. Under these circumstances, this leads to the question of
priorities—at what point can communal crises be met and new prospects secured, and
with what funds and resources.

The situation became more extreme at the start of the new century because the catch-
up strategy which started at the beginning of the 1990s to overcome the reform backlog
in the public administration in Germany must now be continued under worse
conditions.16

The optimization and adaptation of business processes in the German e-government
system will move a great step forward when the considerable (statutory, technical and
organizational) difficulties about allowing complex transactions online have been
relativized at the national level. It can be expected that the municipalities will then begin
a new stage in the development of their e-government projects, although it is obvious that
some are more prepared for this than others, given the present status of their projects.
Municipalities which already have a firm foundation in terms of strategy, political
support, strong organization, solid technology, motivated and competent staff and
management, committed partners in business companies, associations, scientific
institutions and other local communities will find it easier to move forward to the next
stage of e-government, the processing of suitable administrative seamless transactions.

The second common element is a developed technical infrastructure. The workplaces
in the administration must have been equipped for the planned projects, the in-house
networks must be in place and suitable software solutions must be in use. Where
electronic signatures are used, a concept must have been drawn up and implemented for
the necessary technical and organizational measures. A security concept must have been
drawn up for processing online services and a suitable platform selected for the local
purposes, or even developed in the *MEDIA@Komm* municipalities. Standardization
processes must also be followed and implemented.

The third element of success in the avant-garde municipalities, even though this is
usually only in its beginnings, is to gear the content of the applications to benefit a wide
range of customers consisting of private citizens, private business, the administration and
the municipal council. Due to the early state of development of e-government in
Germany, the economic benefit can naturally not yet be specifically quantified. Now,
however, the administration reports progress in key indicators such as throughput times,
frequency of errors, quality of transaction processing, reduction of the work involved,
etc., and this is already leading to an increase in customer satisfaction in the wide group
of customers.
Tasks and prospects in the near future

The achievements of e-government, especially in the sponsored municipalities and the most advanced of the municipalities not sponsored by the BMWA, and the efforts of the other municipalities, which can all be regarded as pioneers in this area, must be commended in view of the enormous demands of e-government on the one hand and the fundamental changes in the conditions of local community action on the other hand. The gaps and weaknesses in the projects to date must be seen in this context and must take into account the overall sphere of local action.

There is now a need for action at different levels for various participants. For example, the development and implementation of personnel development concepts is clearly a task for the public administrations themselves if the working conditions and qualifications there need to be adapted to meet the specific new challenges. The public administrations must also ensure that their most important potential, the ability, commitment and experience of their staff at various levels of the hierarchy, is properly integrated. Changes in project management and in the procedures and structures are also the responsibility of the administrations.

In accordance with the plan stipulated at the start of the subsidy project, which involved moving directly from pilot projects to mass use, the sponsor resolved to provide active support for the distribution of solutions developed especially but not only in the MEDIA@Komm programs to other local communities in Germany. This goal is also the context for the recommendations to provide aid in personnel training and project management and support in developing knowledge of co-operation management. The Ministry of Economics has started or planned initiatives in this area. This is an important step which can at least relativize the great gap documented by the monitoring process between the avant-garde municipalities and the large group of following municipalities.

A second sphere of action for the sponsor is to help to extend and deepen knowledge of e-government. Research on co-operation management and modern forms of partnership between administration/government and business companies and between administration/government and citizens can help here. Research projects focused on learning processes in the administration, as a learning organization, in its relationships especially with business companies are planned. At present, much potential for innovation is lost because of ignorance and reticence.

A methodically well-founded analysis of the cost-benefit ratio of e-government is an important task. The task here is to determine what the projects “earn” when the investments and the potential savings are balanced against each other. Such an analysis would help to place the current discussion on a more rational basis and significantly increase the motivation of the decision-makers, because the experts are already clear about the general trend of the results: e-government, as an extensive modernization project, has a high potential in terms of cost reductions, effectiveness, greater transparency, greater participation of the staff in their processes, better information for councilors and citizens about municipal developments and for business companies about the economic situation in their location.
Notes

1 This criticism is outdated insofar as most city administrations have re-balanced the competencies between central offices and decentralized offices.

2 ARIS is a tool for software design.

3 A list of the available online services can be found on the website of the MEDIA@Komm project under http://www.mediamatik.de.

4 See the concluding remarks of this book.

5 The area of “culture/leisure” includes the following services: “cultural services and tickets”, “municipal libraries” and “educational facilities (e.g. adult education)”.

6 The area of “communication…” includes “press and public relations”, “provision of information” and “communication with other offices”.

7 In the study this includes “support for business start-ups” and “support in need and social benefits”.

8 This includes “family status”, “information on business enterprises”, “register of inhabitants”, “electronic market place” and “transport and vehicle registration”.

9 This area covers “land property/planning permission”, “collection of fees and charges”, “land registry”, “urban development” and “residential construction grants and housing”.

10 “Purchasing” includes “invitations for tender” and “procurement”.


12 This includes “online access to records”, “electronic elections”, “formal citizen participation” and “informal citizen participation”.

13 This is also clearly shown in the other comprehensive international comparative study by the British group of authors Socitm and I&DeA (2002:8).


15 This statement is only partly significant due to the lack of a consistent definition among the respondents of who is regarded as “management staff”.

16 The initiatives follow each other at short intervals. In March 1999 the initiative “Germany 21” came along with the goal of harnessing the forces of politics, business, science and society to develop the general conditions for the transition to the information age. In December 1999 the program “Modern State-Modern Administration” was passed by the national government and the competition “E-Government in National and Federal State Administrations” was declared. The municipal multimedia competition MEDIA@Komm also began in 1999. In September 2000, the initiative BundOnline 2005 began.

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5
Local e-government in the Netherlands

Roland Leenes and Jörgen Svensson

Introduction

The Netherlands is one of the smaller countries in Europe with just over 16 million inhabitants. It is a fairly prosperous and industrious country with a well-educated population and a relatively strong position in world trade, finance and electronics. The banking system is highly developed. With almost everyone over 18 years of age having a bank account, there is a dense network of automated teller machines and the use of Internet banking is spreading rapidly. Finally, Internet penetration is relatively high—over 60 per cent—and still growing, with an increasing proportion of these connections being broadband (about 40 per cent in 2003).

As such factors are supposed to offer a good breeding ground for e-government, it should come as no surprise that the Netherlands was among the first countries to seriously take up the challenge to modernize government and to introduce electronic service delivery (ESD), both in national plans and on the local level.

Context of municipal e-government

Local government in the Netherlands

The Netherlands is a decentralized, unitary state (de Jong and Schuszler 1999). This expression refers to the fact that, next to the Dutch national government, the Dutch constitution recognizes several other governmental layers, which have their own democratic underpinnings and their own responsibilities, and thus independent authority in some fields. Most important in this respect is the position of the Dutch municipalities, which have their own constitutional responsibilities in policy development as well as in policy execution.

The present number of municipalities is just below 500, with an average population of slightly over 33,000 inhabitants. However, with about 30 per cent of the total population concentrated in just 25 cities, Amsterdam and Rotterdam being the largest cities by far, most municipalities are in fact much smaller (see Figure 5.1).
Moreover, when considering the population size of Dutch municipalities, it should be noted that many, especially rural municipalities, are a result of administrative mergers between smaller communities. Tytsjerksteradiel, for instance, has 31,000 inhabitants but spans an area of 161.41 km², containing 16 villages.

Municipalities and service delivery

When it comes to the delivery of public services, municipal autonomy is especially important. As municipalities are responsible not only for truly local services—services based on local policy—but also for the administration of many national services and for products of joint governance, about 70 per cent of all public services are delivered at the municipal level (Lips 1998).

This means that, for many of such services, Dutch municipalities enjoy a serious policy responsibility and also a serious administrative burden. Where a high degree of autonomy implies a risk of policy fragmentation (and of re-inventing of wheels), budget, personnel and other considerations imply a certain need to work together.

Thus, in the general interest, the Ministry of the Interior and Kingdom Relations (BZK) and the Dutch Association of Local Authorities (VNG) are considered to have a responsibility in supporting local authorities in their activities and in furthering inter-municipal co-operation and alignment, while at the same time always acknowledging the constitutional municipal autonomy.

![Figure 5.1 Numbers of Dutch municipalities in different size categories](http://www.cbs.nl/)

Figure 5.1 Numbers of Dutch municipalities in different size categories (N=496) (source: Central Bureau of Statistics (http://www.cbs.nl/)).

It is from this perspective that national policies concerning e-government and electronic service delivery take shape.
National e-government policy

The history of public sector information policy in the Netherlands is roughly divided into three eras or generations in which its policy focus has developed as an effect of advances in the technology, computing experiences and policy ambitions.

The first era, that of computer policy, started in the early 1950s, when the first computers entered the market and the Netherlands saw its first advisory committees in this field (Donk and Meijer 1994). In this dawn of IT policy, the Netherlands experienced about 25 years in which ‘the computer’ was mainly regarded as an exceptional and extremely expensive instrument for computation and transaction processing. Computers were to be used on a ‘stand alone’ basis, in very specific government organizations, with specific, isolated tasks at the national level, such as the Tax Office, the Central Statistical Bureau, the Royal Dutch Meteorological Institute and the (Royal) PTT.

This first era was followed by a second period of about 15 years, until the beginning of the 1990s, which showed a rapid increase in the diffusion of computers in government and, along with it, the emergence of information policy. The Netherlands saw a somewhat broader focus on the controlled development of information technology within government, when it was recognized that:

1 information technology could be applied to enhance the internal functioning of government as a whole
2 this kind of internal application of information technology required some planning and co-ordination between various government bodies and different levels of government.

The focus thus shifted to questions of electronic data exchange between government organizations and to the desirability in this context of an information infrastructure based on agreements about basic registrations (e.g. population, real estate, cars) and data communication standards. As a result of this, over the years, several basic registries were developed, such as the Municipal Public Records Database (GBA: Gemeentelijke Basisadministratie).

Currently, the Netherlands is in the midst of a third policy generation, namely that of electronic service delivery. The ESD-policy generation started in the early 1990s with the concept of Public Service Centers and really gained momentum as a result of the Internet revolution. Its focus is the application of information and communication technology beyond the inner limits of government, directly addressing the interaction between government and citizens. ICT is regarded as instrumental in democratic citizen participation, as well as modern public service provision (BZK 1995). For this purpose several ESD programs have been developed in recent years.

ESD programs

In general, ESD programs in the Netherlands have a strong focus on municipalities. On the one hand, this focus simply follows from the policy ambitions. As said before, around 70 per cent of all public services in the Netherlands are developed and/or delivered on the municipal level. On the other hand, this focus is necessary because developing ESD on the level of the municipalities poses a most serious challenge, for three reasons:

1 the number of services on this level is immense and so is their variety
2 in general, municipalities, especially smaller ones, have very limited means
3 because of the constitutional autonomy of the municipalities, national ESD programs
   are totally dependent on the voluntary co-operation of the local level.

So, during the last decade, the Dutch national ambition of modern ESD has been
furthered through several national programs, which have targeted the municipal level,
most important of which are:

• the Public Counter Project (OL2000) (BZK 1995)
• the Action Program Electronic Government (ELO) (BZK 1998)
• a program of so-called ‘Super pilots’, which started in 2001 (BZK 2000).

As these three programs make up an important part of the institutional context of local
ESD development, we will discuss them briefly.

1995: The Public Counter Project: core ideas and organization

The Dutch Public Counter project was announced in 1995, in a government paper with
the catchy title ‘Back to the Future’. It aimed at the implementation, around the year
2000, of a nationwide network of One-Stop-Shop Public Counters to ‘replace’ the
existing multitude of counters run by individual government agencies. It especially
focused on a qualitative development in three dimensions (BZK 1995).

• Client orientation: the new counters should no longer offer services based on the logic
   of the existing bureaucracy, but instead address the actual demands of specific target
   groups (based on life-events).
• Service integration: services by different government agencies, and different branches
   within agencies, should be provided in a jointed-up fashion, reducing the need for
citizens to go back and forth through the complex bureaucracy (i.e. a citizen should be
able to present his complete case at one single access point to receive all services
required).
• ICT application: ICT use would be developed in three stages. As a first step application
   for civil servants in the front- and back-offices would be developed, then there would
be self-service applications for citizens, installed in public places, and as a final aim
the project foresaw ‘service delivery via the Electronic Highway’.

To give shape to these ideas, an intergovernmental committee was formed, consisting of
representatives of key Ministries (Ministry of the Interior and Ministry of Economic
Affairs) and of the Association of Local Authorities. A special program bureau (OL2000
program bureau) was set up independently of the Ministry of the Interior, and was made
responsible for creating awareness and support in the municipalities and for providing the
necessary preconditions to develop a number of pilot projects.

Fifteen pilot projects were commissioned, grouped around three topics or target
groups: ‘housing’, ‘the elderly and the disabled’ and ‘know-your-rights’.

During the six years the program ran, the OL2000 project bureau published a number
of handbooks for local authorities on topics such as developing integrated service
delivery, organizational change management, monitoring service delivery and co-
operation between public agencies. These handbooks were distributed, free of charge, among the municipalities and other relevant actors in the field.

An important spin-off of the OL2000 program was ‘VIND’, which means ‘Find’, and is also a Dutch acronym for ‘question-based interactive product database’. The idea in OL2000 was that the development and maintenance of a large catalogue of municipal products was beyond the capacity of many individual municipalities and that centralizing this task—on a voluntary basis—would be far more efficient. Thus, an extensive catalogue was developed, containing basic information about 300 municipal products and services (what does the product amount to, what are the requirements, whom do I contact, what is the procedure?). This catalogue has been organized around life-events and roles of citizens and has been designed to be used either as a stand-alone application, or as an integrative part of a municipal website. From the 1 January 2002, the administration and maintenance of the VIND catalogue has been transferred to a joint venture of two publishers of government information and a consultancy firm. Municipalities can subscribe to VIND for a relatively small fee depending on their size: EUR 1,600 annually for small municipalities and EUR 4,500 for larger ones (http://www.productencatalogus.nl/).


The Action Program Electronic Government (BZK 1998) can be seen as an extension and broadening of the Public Counter Program. The Action Program was developed, in the midst of the Internet euphoria, following the Dutch National Action Plan for the Electronic Highway (EZ 1994). According to the Electronic Government action plan, the Dutch government would actively invest in the application of ICT, not only as a means to improve its own functioning, but also as an example of innovative ICT use for the rest of Dutch society. For this purpose, it focused again on the possibility of improved service delivery, but also on effectiveness (reaching target populations) and efficiency (reduced costs) (BZK 1998).

Three central themes of this program were:

• electronic accessibility of Government especially with regard to public information (parliamentary proceedings and policy papers, legislation and judicial decisions)
• improvement of online public service delivery: at least 25 per cent of public services should have been online by the year 2002, as a result of the continuation of the Public Counter project
• improved internal management within central government, again by means of ICT.

In addition to these general themes, a sector approach was developed, focusing on education, public employment services, social security and healthcare.

This combination of themes and sector focus did amount to an impressive ‘action list’ for the years ahead, which contained items such as:

• the development of a central Government portal http://www.overheid.nl/
• a list of government information to be made available electronically by the various ministries
• the development of a Counter for the new Centers for Work and Income
• experimentation with the use of chip cards in healthcare and for general identification purposes
• development and streamlining of basic registries (e.g. for enterprises, pipes and lines, insurances and real estate)
• the development of digital record keeping and digital archiving of government information.

It was estimated that the initial costs of these activities would amount to between EUR 9 million and EUR 13.5 million annually. These costs would be covered by the budget of the National Action Plan for the Electronic Highway for the first five years. The total budget needed to cover all expenses, especially running costs after implementation, was thought to be much higher and was expected to be met by the parties involved in the various projects.

2001: Super Pilots

The most recent large step in the endeavour to modernize government on the municipal level was the introduction, in 2001, of the so called Super Pilots: a covenant between the minister of Urban Policy and Integration (Rogier van Boxtel) and the municipalities of Enschede, Den Haag and Eindhoven and Helmond http://www.superpilots.nl/.

The Super Pilot program, which ends in 2004, aims at the realization of ‘100 per cent electronic service delivery’ in each pilot, through an intensive development process, in a three-year period. Each of the three pilots is to develop its own approach. Knowledge gained is to be shared between them, and also with the other municipalities in the Netherlands through documents and an ESD toolbox.

By taking part in this program, each super pilot receives a state subsidy of EUR 2.7 million, which is to be matched by an equal investment by the municipality itself.

Local e-government at a glance

Nowadays, municipalities in the Netherlands make extensive use of ICT. Most local authorities have taken on information technology in their daily operations, and most municipal staff have access to a personal computer, connected to the municipal network.

As a result of past efforts, all municipalities in the Netherlands also have access to well-developed authentic registers, such as the Municipal Public Records Database (GBA). These registers are administered at the local level, but changes are passed onto other relevant public organizations (up to 300). The authentic registers play an important role in many processes, which depend on accurate, reliable information.

In addition, all municipalities (and other public agencies) can make use of the closed, secure network of the Association of Local Authorities: Gemnet.

Almost all municipalities, Amsterdam and Arnhem being notable exceptions, make use of electronic voting machines in local, provincial, national and European elections.
**Municipal Internet presence**

In addition to these informatization successes from the second, information policy, era, most Dutch municipalities have taken up their ESD-policy responsibilities in recent years, most noticeable in the form of municipal websites. Since the late 1990s, there has been an active policy to get all local authorities online by providing tools and limited funding. This has recently resulted in a (nominal) Internet presence of 100 per cent. Since November 2003, all Dutch municipalities have some presence on the Internet in the form of their own, official municipal website http://www.municipality_name.nl/.

**Municipal ESD sophistication**

Of course, concerns for ESD policy do not end here. The fact that all Dutch municipalities now have official websites should be considered only a first step on a long path. As explained above, ESD-policy ambitions reach much further in terms of service quality, service integration and service efficiency, and in this respect there are three important indicators that there is still a lot to wish for.

First of all, there are several national benchmarks for municipal websites, which show a large variation in website maturity. Two well-known benchmarks are the Webdam monitor http://www.webdam.nl/ and the Advies Overheid.nl monitor http://www.advies.overheid.nl/, which is related to the central government portal http://www.overheid.nl/. On a grand scale, these monitors show similar pictures. As shown in Figure 5.3,

![Figure 5.2](http://www.advies.overheid.nl/) The diffusion of the municipal websites in the Netherlands (source: http://www.advies.overheid.nl/).
especially many of the smaller municipalities are lagging behind, and sometimes their websites contain little more than a page with some general information about the town.

Second, the fact that municipal websites are not as advanced as they should be is expressed in national surveys, in which Dutch citizens expressed their experiences and satisfaction. Here, we see that only few municipalities are able to deliver what the public expects and desires (Table 5.1).

A final indicator that the Dutch municipalities are not doing too well, is the Netherlands’ position in several international benchmarks. As the Netherlands has always been rather progressive in implementing ICT innovations at the national level (e.g. in the field of taxation and in its system for student bursaries), it has always been among the world leaders in ESD development. However, as many of these national services have now reached a high level of maturity, further advancement depends on the progression of the municipalities and, in this respect, the Netherlands does not seem to do well at all. The country has slipped in international benchmarks in recent years. On the new indicator introduced in the monitor by the European Commission, the number of fully online
services, the Netherlands not only scores very low, but also the progress is slower than in most other EU countries (Cap Gemini Ernst & Young 2004).

Table 5.1 Citizen satisfaction with municipal web services, the Netherlands

<table>
<thead>
<tr>
<th>Service quality</th>
<th>%</th>
<th>Participation quality</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>0</td>
<td>Excellent</td>
<td>0</td>
</tr>
<tr>
<td>Good</td>
<td>1</td>
<td>Good</td>
<td>0</td>
</tr>
<tr>
<td>Satisfactory</td>
<td>17</td>
<td>Satisfactory</td>
<td>9</td>
</tr>
<tr>
<td>Passable</td>
<td>57</td>
<td>Passable</td>
<td>46</td>
</tr>
<tr>
<td>Weak</td>
<td>23</td>
<td>Weak</td>
<td>15</td>
</tr>
<tr>
<td>None</td>
<td>2</td>
<td>None</td>
<td>31</td>
</tr>
</tbody>
</table>


So, although the formal national plans in the Netherlands tell us something about national ambition, they offer little on actual activities and results. In order to get a better understanding of what is going on, at the local level, we now turn to a case study of three Dutch municipalities.

Case study on Dutch local e-government

In this section only a small sample of Dutch municipalities can be discussed in more detail. We first address the question of which cases were selected, after which we will use these cases to fill in the general framework presented in the introductory section and applied in the later sections.

Case selection

The task of selecting only a few municipal cases to sketch local developments in a country such as the Netherlands is, of course, a difficult one. Municipalities vary considerably in many important aspects, such as size and ESD sophistication, and thus a representative overview seems out of the question. Because of this, we decided to apply another basis for selection: connectedness to the national programs. Given the dominance in the Netherlands of several extended national policies, aimed at the realization on a large number of policy ambitions, it is especially interesting to study municipalities which are expected to follow the logic in these programs and the intended progress.

For this reason we decided to investigate two Super Pilot municipalities, which are considered to epitomize the concept of municipal development in the context of national programs:

1 the city of Enschede, which is not only a current Super Pilot, but which has also been engaged in the original OL2000 program as a Public Counter project
the city of Eindhoven, a Super Pilot which at the moment of case selection was considered to offer one of the best municipal websites in the Netherlands. Although these Super Pilots are considered exemplary, they are very special in the sense that they are not only Super Pilots with additional funding for ESD development, but also rather large municipalities. Therefore, a third, contrasting, case is used, namely that of the small town of Millingen aan de Rijn. Millingen, with just 6,000 inhabitants, is not only small, but as a logical consequence has very limited means to develop ESD. However, according to one of the national benchmarks, it has managed to do remarkably well. In this sense it too can be regarded as exemplary, especially when we keep in mind that in the Netherlands there are many municipalities which resemble this town in population size, bureaucratic scale and financial means.

As a further introduction to these cases, the following information is provided.

Enschede is a city of about 153,000 inhabitants, which makes it the 12th in size in the Netherlands. The city used to have a large textile industry, but in the 1970s most of the production in this sector transferred to low-income countries. As a result, the city suffered badly from high unemployment. Although it has largely recovered, Enschede’s economic performance is still behind compared with other larger cities in the Netherlands. However, Enschede has both a university (the University of Twente) with approximately 7,000 students, and a university of higher education (Saxion University) with some 7,500 students.

Eindhoven is situated in the south of the Netherlands in the province of North Brabant. With a population of about 206,000, it is the fifth largest Dutch city. For many people inside and outside the Netherlands, Eindhoven is probably best known for Philips, the consumer’s electronics multinational, and for its football club, PSV. In addition to this, Eindhoven and its surrounding region are a residence to many more smaller and larger high-tech institutions, such as the Technical University Eindhoven and the ASML Company, which is a world leader in advanced lithography systems for the semiconductor industry.

Millingen aan de Rijn is a small, rural town on the German border and on the south bank of the river Rhine. It has a total population of just under 6,000 inhabitants and an area of about 10 km², which partly overlaps the nature park Millingerwaard.

Table 5.2 Local e-government discussed in Dutch case studies

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Population</th>
<th>Benchmark ranking</th>
<th>Webdam</th>
<th>Advies. Overheid. nl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enschede</td>
<td>153,000</td>
<td>55</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Eindhoven</td>
<td>206,000</td>
<td>4</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Millingen aan de Rijn</td>
<td>6,000</td>
<td>27</td>
<td>159</td>
<td></td>
</tr>
</tbody>
</table>

Points of departure for developing local e-government

As discussed above, local e-government in the Netherlands can be traced to projects aimed at modernizing local public administration in the late 1980s and early 1990s and was stimulated strongly by the arrival of the World Wide Web (Lammers and Lips 2000).

Enschede

Initiatives for advanced e-government development in Enschede originated at the University of Twente. In 1995, a group of researchers from four departments of the university wrote a project proposal called ‘Teleloket 1’, which aimed at the development and study of an electronic service counter. The initiative built upon previous research on (Legal) Expert Systems and on user interfaces for services such as electronic (theater) ticket sales. Enschede was approached to serve as a pilot domain. The Enschede alderman responsible for information and communication technology acknowledged the prospects of the Teleloket ideas to improve public service delivery and decided to team up with the university.

Teleloket 1 was redrafted into a pilot proposal for the OL2000 project (‘Ole2000 Know-your-civil-rights’). The proposal sketched a vision and a strategy to implement a one-stop-shop for the domain ‘building and housing’. The plan was adopted by the national OL2000 program bureau in September 1996.

When the OL2000 pilot ended in 1999, the ministry of Public Housing, Urban Planning and the Environment, took over part of the projects funding in Enschede and attention shifted to (a) the development of more general tools that could be implemented in other cities as well, and (b) further integration of related services. The project was renamed from Ole2000 to Ole21.

In 2001 Enschede was selected to become one of the three Super Pilots. In accordance with the requirements of the Super Pilot project, a policy document Programma e-Dienstverlening Enschede (Enschede 2001) was drafted, elaborating the Enschede ESD policy and its development for the period 2001–2004.

Eindhoven

The first steps in e-government in Eindhoven were taken, as so often, by some enthusiasts in the town hall, who were interested in the possibilities of the new technology and who were lucky enough to be given some room and support.

In this case, these steps were taken in the context of city promotion and citizen information provision. The department responsible for this task was ahead of its time, when it implemented an electronic citizens’ information system by means of interactive Teletext (Videotext), in 1990. The citizens of Eindhoven thus were among the first who could not only watch the local pages on their televisions, but also interact with them, using their normal telephones (Oudshoorn et al. 2002).

Around 1995 focus shifted from Teletext to the Internet and Eindhoven got involved in plans to develop its own digital city. By 1996 the first provisional municipal website was created, which was given formal status one year later. Subsequently, Eindhoven set
out to extend its website in a more formalized manner and to migrate its type of service delivery; from the initial information services, via communication, to transaction service delivery.

In the meantime the mayor, Welschen, and his city manager lobbied to get Eindhoven involved in several national pilot programs, which resulted in several other major projects, which will be discussed below.

**Millingen aan de Rijn**

As in the other cases, the developments in Millingen also started with personal enthusiasm. This time not in the town hall or at the university, but as a private hobby of a local police officer: André Vreemann. He developed a personal interest in the Internet and decided to build a website himself. As the primary topic of this website, he chose his home town—Millingen—and started to include local information on the web.

In 1999 one of Millingen’s council members was surfing the net and discovered Vreemann’s website. He saw the potential of the site, contacted the town clerk, and together they got in contact with its owner. In November of that year, the town council formally adopted the private website. Without much concern for any national policy and without even a local plan, the official municipal domain name http://www.millingen.nl/ was registered and after some changes and extensions, including the incorporation of some downloadable forms, the existing site was transferred to its new domain.

**Visions and strategies**

The introduction of the OL2000 program in 1996 and the mission of stimulating local authorities to pick up integrated service delivery and e-government has had its effects on e-government visions, policy and strategies. A study conducted for the Dutch Ministry of the Interior in 1999, showed that 55 per cent of the local authorities had policy on integrated service delivery; 84 per cent of the cities with 50,000 or more inhabitants and 54 per cent for the smaller ones (NIPO 1999). In a follow-up study conducted in 2002 (Stegers 2002), this figure had risen to 58 per cent, with the rise attributed to the larger cities. This study shows that the principal motivations to develop an e-government vision and policy are: improving services (23 per cent), improving efficiency (21 per cent), changes in the physical location of the administration (14 per cent), high number of citizens’ complaints (10 per cent), national OL2000 stimulation (9 per cent) and finally mergers on the local level (8 per cent).

**Enschede**

Enschede’s e-government vision started with alderman Swart’s memorandum *Enschede aan huis* (Enschede at home) and the OL2000 project proposal that was based on the Teleloket 1 proposal. From the start of the Ole2000 project, a number of documents were produced that outlined aspects of e-government. They primarily focused on the principal areas in which e-government was developed in Enschede, the domains of housing, building and the environment.
The scope widened when the city decided to build a new town hall to house all sectors of the city’s administration. At this point, city-wide plans for the adoption of ESD were drafted.

Enschede’s e-government vision was further developed in relation to the application for the Super Pilot project. The *Programma e-Dienstverlening Enschede* (Enschede 2001) elaborated ESD policy for the period 2001–2004. This document takes ESD beyond government-citizen communication in the front-office and addresses the whole process of delivering a product, hence also back-office data processing and decision-making. Four areas of particular importance with respect to this notion of ESD are outlined:

- **The digital counter.** This is to be the principal source of public service delivery. Here the public can find all relevant information on all 497 products within Ole21. It also delivers these products on a ready-while-you-wait basis, whenever possible.
- **Unity in communication.** The citizen should receive the same information and answers to problems, irrespective of the communication channel (telephone, Internet, letter, or walk in). Ole21 is to be the principal source of information and services for each of these channels.
- **Front-office to back-office co-operation.** For each product a decision is made with respect to who is responsible for the product, front-office, back-office or machine. On the basis of this division of labour and responsibility, the workflows of the various agents involved are (re)designed making use of IT tools as much as possible.
- **Management of production processes.** Government should be transparent, and service quality should be as high as possible. Processes have to be audited and performance and quality measures are to be used.

The document further outlines the development of electronic services in stages. Each stage involves a number of requirements defining a service level and the number of services to be implemented. For instance, level three, which was planned to be reached by 1 June, 2003, requires workflows to be transparent so that citizens can see the status of their applications.

**Eindhoven**

Eindhoven’s e-government vision and policy has been concentrated in three large programs: Super Pilot, Knowledge District and Digistein.

As a Super Pilot, Eindhoven has committed itself to a four-year project in which it, together with its partner city Helmond, aims to develop a complete and comprehensive electronic service delivery, tailored to the needs of the citizen as a client, and to explore new ways to make municipal service delivery more effective and efficient (Super Pilot Eindhoven/Helmond 2003).

The ultimate ESD aim in Eindhoven, which follows from its Super Pilot status, is that each service will be delivered electronically at the highest level ‘possible and sensible’, and for this purpose it uses the VIND-catalogue’s product list, in which for each product an aspiration level has been determined, varying between:

1 providing information only (currently 76 products)
2 information and possibility of downloading forms (currently 14 products)
3 information and possibility of filing requests via online forms (currently 30 products)
4 electronic transactions—information provision, online interaction and handling (currently five products).

Eindhoven aims to provide each service electronically, at its predetermined aspiration level, at the end of the Super Pilot program in 2004 (see Table 5.3)

Table 5.3 Some examples of short-term ESD ambitions

<table>
<thead>
<tr>
<th>Product</th>
<th>Maximum level possible</th>
<th>Current level available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driveway road access</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Handicapped parking licence</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Regular garbage collection</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Notification of building plans</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Certificate municipal population registration</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Project manager, Super Pilot Eindhoven.

Next to the Super Pilot, Knowledge District (Kenniswijk), is the second e-government program in Eindhoven (http://www.kenniswijk.nl/). Its aim is to create an area for experimentation with all kinds of innovative consumer products and services using computers, broadband communication and the Internet. In 2005 an area containing about 40,000 families (84,000 persons) should be ahead of the rest of the country by about two years, providing a test bed that can be used to answer technological questions and to analyse social and economical effects of innovation in an early stage. Knowledge District is a large program, which potentially dwarfs the Super Pilot. It started in 2002 as an initiative of the Dutch Ministry of Economic Affairs, and ends in 2006.

The third large program, Digistein, aims to develop a breeding ground for experimenting with ICT in the field of social cohesion and participation in the neighbourhood Drents Dorp in the city district Strijp. It builds on earlier initiatives and projects, such as Knowledge District. Digistein is being developed in request of the Ministry of the Interior and Kingdom relations and combines three policy foci:

- Eindhoven’s ambition to be a technological centre (‘Eindhoven ahead in Technology’)
- Eindhoven’s aim to be a city where it is good to live (‘Eindhoven socially attractive’)
- a governance approach of strategic alliances and coproduction with societal partners on the level of the city districts (‘Eindhoven co-productive’) (Digistein 2001:9).
Millingen aan de Rijn

Millingen aan de Rijn never developed a formal e-government policy. Although the website has been formally adopted by Millingen, André Vreemann still has power of decision (as long as he prevents and removes offending content). When it comes to future developments the informal goal of the website remains Vreemann’s ambition: to inform Millingen’s citizens about the village and its government and to provide access to municipal services and documents.

However, within this informal context, some valuable policy decisions have been made. One recent example is the uptake of national policy with regard to accessibility of the site for the visually handicapped. The original website was not developed with the visually impaired in mind. As a result of adopting national policy, a redesign was carried out. Another recent decision has been the acquisition of the VIND catalogue as this was considered necessary in view of the maintenance burden caused by the requirement of keeping the site up to date with national regulation.

Project organization and executive commitment

In general, the city council and in some cases the city board takes political and key allocation decisions in Dutch municipalities. The city administration is headed by the municipal manager.

E-government projects are carried out in various ways. In smaller local communities they are often run in a very ad hoc way, as shown in the Millingen case. In larger cities there are formal projects that run for a specific period. Enschede, for example, more or less follows this path. In cities where e-government is more mature, development may be embedded in the line organization, with only smaller innovative pilot projects detached from the line organization.

Enschede

The municipal website http://www.enschede.nl/ was initiated and run by the communications department as a project of the city’s communication officers, supported by the ICT staff of the Facilitative Services department. In 2001, the responsibility for the website was transferred to the Corporate Staff and Communication department and the tasks and responsibilities were embedded in the line organization.

The Ole2000 project started as a project of the Alderman for Culture, Sports and Urban Policy, and was adopted by the city board in the summer of 1996, when the OL2000 pilot project proposal was drafted. The city’s administrative management was involved as the enterprise management team, consisting of the heads of the various city departments, decided that the project was to reside under the manager of the Registry General (with political responsibility resting with the said alderman). The daily operations were co-ordinated by a taskforce. The project was supervised by an executive steering committee consisting of members of the city’s management team. There was also a ‘partner board’ consisting of (senior) representatives of the consortium partners.
With the introduction of the *Programma e-Dienstverlening Enschede* (Enschede 2001), the organization of Ole2000/Ole21 has changed. Now, the mayor and alderman decide on the annual budget and program, and the enterprise management team commissions the Ole21 team and appoints the program manager. The program manager is the director of the Ole21 team, which at present consists of 18 full-time equivalents (FTE), and has two sections: development, and content and maintenance. Ole21 is largely developed in house, programmers are contracted when necessary. The original Ole2000 consortium (discussed below, p.138) no longer exists.

**Eindhoven**

The overall Super Pilot program of Eindhoven is managed by a program co-ordinator under the responsibility of the mayor and alderman. The various sub-projects in this program are developed within the individual departments of the city. Three types of projects are distinguished:

- broadening projects, which aim at the further development of services (e.g. developing a system for booking sports facilities)
- deepening projects, which aim at adding extras to existing services in terms of functionality (e.g. adding forms and status information through links with administrative systems)
- explorative projects, which aim at experimenting with advanced forms of electronic service delivery.

Kenniswijk is developed as a public-private partnership and is run as a private firm (Dutch: BV) with some 27 companies and public organizations as its shareholders. The city of Eindhoven is one of them. Digistein is also a public-private partnership in the form of a foundation managed by Mel@nion (see below).

**Millingen aan de Rijn**

In Millingen the only formal steps taken are the official adoption of the website by the town of Millingen, the official appointment of its maker as a part-time city clerk (0.2 FTE) and the formulation of a short contract stating some competencies and responsibilities of both parties involved. Apart from this, and the fact that the municipality is now paying for the equipment and Internet access, we can hardly speak of any (further) formal organization. However, there seems to be a rather effective informal co-ordination. Most arrangements are simply made on a personal basis, with the municipal staff and the council members, and there are agreements on the information and forms to be included on the website. Also, the city’s information officer maintains some of the information on the site.

**E-service and e-participation applications**

The degree of maturity and the services offered by Dutch municipalities varies considerably. Most municipal websites at least have the basic facilities that can be expected of such a website: contact information, information on the political makeup of
the city board and information on various municipal products. Also minutes of the city council are quite common.

Maturation of e-government is a topic in the world of local administration. Snijder et al. (2003) report that a considerable proportion of the local authorities have plans to further develop e-services (29 per cent) as well as to experiment with, and implement, forms of e-participation (see Table 5.4).

Most local authorities report that they aim to base service delivery on back-office systems, especially with respect to services depending on the Registry General, such as moving house, and obtaining birth and marriage certificates.

With respect to e-participation services, there are notable differences between small communities and larger cities. Of the larger cities (>50,000 inhabitants) 45 per cent report to have experimented with e-participation. Of the municipalities with less than 25,000 inhabitants this figure is 19 per cent (Snijder et al. 2003). The forms of e-participation that are most frequently used are web surveys (69 per cent) and discussion forums (64 per cent).

**Enschede**

The most important services of the main Enschede website http://www.enschede.nl/, which can be seen as a portal, are as follows:

- Enschede lives: city, culture, education, business, sports and recreation, shopping, living in Enschede, statistics, city archive, web cams, links, event calendar.
- Politics and administration: how does a city work, mayor and aldermen, city council, diary of meetings, agendas, reports and decisions, questions submitted by the council, electoral information.
- City districts: content varies per district.
- Projects: main city projects.
- Organization: city contact information, structure, job vacancies.
- Businesses: link to business point, effects of city policy on safety for businesses (as a result of the 2000 fireworks disaster).

**Table 5.4 Local authorities’ plans with respect to their websites**

<table>
<thead>
<tr>
<th>Plans for 2004 (n=172)</th>
<th>%</th>
<th>Plans for after 2004 (n=173)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extend products and services catalogue (e.g. VIND)</td>
<td>29</td>
<td>Extend products and services catalogue (e.g. VIND)</td>
<td>39</td>
</tr>
<tr>
<td>Implement eParticipation</td>
<td>17</td>
<td>Implement eParticipation</td>
<td>31</td>
</tr>
<tr>
<td>General website improvements</td>
<td>17</td>
<td>Implement policy information systems</td>
<td>10</td>
</tr>
<tr>
<td>Improve website maintenance</td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Snijder et al. (2003).

The public library has its own website, independent of Enschede.nl.
Ole21 is the one-stop-shop for electronic service delivery. It has detailed information on 497 services, and offers interactive services for roughly 65 of them. In 2002 Ole21 had more than 100,000 visitors and the number is rising rapidly. Table 5.5 shows the number of page visits for the most popular informational services.

The most popular interactive services in 2002 were:

- changes of address (1,269 requests=14.1 per cent of the total changes of address); this service is primarily used by students, who account for most movements in Enschede
- appointments for the application or renewal of a passport (691 requests=7.2 per cent of the total passport applications/renewals)
- certificates of the Registry General (birth, residence, etc.) (329 requests=4.4 per cent of the total number of requests for these certificates).

The rising popularity of Ole21 is partly due to the amount of effort put into advertising the digital system as an important service channel. Every few weeks small billboards are put up, advertising particular features of the Ole21 system such as ‘You can complain about garbage online’, or ‘Report your change of address online’. The latter advertisement led to a doubling in online change of address requests when the campaign ran in August/September 2003.

Citizen-to-government (C2G) relations are less developed in Enschede. The city does not offer online discussion forums, nor are there regular chat sessions with politicians. Polls are held occasionally and also online questionnaires are sometimes used.

**Table 5.5 The most popular information services in Enschede in 2002**

<table>
<thead>
<tr>
<th>Service</th>
<th>Number of requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land registry information</td>
<td>30,236</td>
</tr>
<tr>
<td>Passport</td>
<td>6,970</td>
</tr>
<tr>
<td>Change of address</td>
<td>6,144</td>
</tr>
<tr>
<td>Certificates of registry general</td>
<td>6,118</td>
</tr>
<tr>
<td>Marriage proceedings</td>
<td>6,030</td>
</tr>
<tr>
<td>Building lots</td>
<td>5,598</td>
</tr>
<tr>
<td>Poll tax report</td>
<td>5,492</td>
</tr>
<tr>
<td>Addresses and opening hours</td>
<td>5,168</td>
</tr>
<tr>
<td>Building permit (for minor changes)</td>
<td>4,360</td>
</tr>
<tr>
<td>Maps</td>
<td>3,778</td>
</tr>
</tbody>
</table>

Source: Vos an Essen (2003).
Eindhoven

At this moment the three main projects in Eindhoven are still in the process of being implemented. Both ESD and e-participation are actively pursued.

The current version of the municipal website offers extensive information services and many possibilities of interaction.

E-participation is less developed, although the present website offers online fora on policy issues and is used to involve citizens in developing policy, e.g. through online questionnaires. The results of e-participation projects are included on the website. Chats are not used on a regular basis, and online polls are not a standard feature.

In connection with the Knowledge District, the first live broadband transmissions of council meetings have been organized in which citizens can follow the meetings on video, while having direct access to all kinds of relevant information such as live commentary, background information about the speakers, and official files.

In Digistein, several creative activities have been developed. There is a diversity of local websites (e.g. a site with historical facts on the neighbourhood, a website maintained by an editorial staff of local school children and a 3D virtual-walk around). There are several public access points and a broadband LAN in the community centre, on which ‘LAN parties’ are organized. In September 2003, the first neighbourhood Internet television show was broadcast.

Millingen aan de Rijn

As explained earlier, the main reason to include Millingen aan de Rijn is the high score of its website in a recent national benchmark. And indeed, it should be said, the city does provide much relevant information.

The Millingen website is a public-private portal on the town of Millingen. On the public side, the website contains the VIND catalogue of municipal products, city council information (agenda of meetings, meeting minutes and other documentation), and contact information (opening hours, telephone numbers, email address). During the last years the site has grown to a total of about 1,900 pages, with around 60 online forms (50 to be downloaded, signed and sent to the town hall by normal mail and 10 to be filled in online).

On the private side, the website provides information on topics such as tourism (boat trips, swimming, visitor centre, hotels and pubs), schools, doctors, dentists, public transport, parking, the city’s history, flag and its coat of arms. All this information is accompanied by pictures and photographs taken around the village. E-participation is underdeveloped. The website offers online forums for policy issues, as well as a poll.

Further developments of the website are not really planned, but initiatives and ideas—from local and national sources—are taken up (or not) based on a personal evaluation of the people involved.

Development of the website as an intranet for council members is under study, as it would be a useful extension since all Millingen council members have Internet access.

Analysis of the log files shows that the citizens of Millingen use the site quite frequently (around 100 hits every day) for news and information. Some people consult
the site when a fire engine passes through the village or when the trauma helicopter lands, and some access the municipal website as a local portal to go to other websites. Others simply look for information on municipal services and to download forms. More and more people access the section of council information to learn about the political process.

**Technology**

The vast majority of computers in use in local administrations in the Netherlands are PCs running Microsoft Windows and Microsoft Office. Back-office systems run on a variety of platforms: PCs and minis and mainframes running NT, UNIX or Linux. Next to the general-purpose office applications, there are task-specific applications for the various municipal tasks, such as the Registry General. These applications are developed by a very limited number of software developers. The two primary suppliers on the municipal market are Pink Roccade/Civility and Centric. A complaint voiced by a growing number of local authorities is that this provides a strong lock-in: it is hard for municipalities to change supplier, and it is equally hard for newcomers to enter the market for municipal applications.

In an effort to open up the market, to reduce cost of ownership, and to provide more freedom for public administrations, the central government is promoting Open Source initiatives.

Another problem voiced by many municipalities is the lack of digital signatures and Public Key Infrastructure for use in e-government. Digital signatures are a matter of national policy and only recently, in July 2003, legislation on digital signatures came into force.

Electronic payment for e-government services has up to now been a problem too. This problem is now being solved, as the Bank Nederlandse Gemeenten http://www.bng.nl/, the Bank of Dutch municipalities, is starting to act as the collector of e-government payments for local authorities.

**Enschede**

The city of Enschede has about 1,500 FTE personnel, excluding school personnel. There are 1,467 PCs and each city employee has an email account and has access to the city intranet and the Internet.

The city has an NT network and uses TCP/IP for Internet connections. The servers that are used in electronic transactions are based on UNIX and Windows operating systems. The development of transaction services relies mainly on ASP solutions and programming tools that are interoperable with MS Windows platform.

Identification for e-government services, if necessary, is done by personal data, such as the number on identity papers, date of birth and postal code.

**Eindhoven**

Eindhoven has a city-wide intranet, to which the vast majority of its 2,200 employees is connected. The city’s administration uses the Centric administrative package and the website is secured through a Secure Socket Layer.
When citizen identification is required, this is done by a username/password combination and in February 2004 Eindhoven was one of the first cities in the Netherlands to introduce an Internet payment system.

**Millingen aan de Rijn**

In Millingen, the technical infrastructure in the town hall consists of a Novell network (installed in 1998) with 46 personal computers running an office package and with an AS 400, which runs one of the standard administrative packages for Dutch municipalities (Roccade/Civility). This town hall network is connected to the national municipal network: Gemnet. Completely separate from this town hall network and from Gemnet there is the Internet site which is hosted by a commercial Internet service provider.

Millingen does not make use of online signatures or digital payment. In the past the municipality has been contacted by a private bank, which was interested in implementing e-payment. However, the decision was made that the benefits of having e-payment were not worth the estimated costs and expected difficulties.

Finally, at some point in the future, the website may be transferred to the Gemnet network to enable data transfer between e-government applications and administrative applications. At the moment this step is still doubtful, because providing the website through Gemnet is considered too expensive and also somewhat impractical (e.g. the transfer to this closed network would make it impossible for Vreemann to maintain the website from his home).

**E-skilling**

Computers are commonly used from the top of the organization down to the work floor in most local authorities. The fact that the Enschede alderman responsible for ICT in the early days of the OL2000 project was very computer literate is telling in this respect. The computer skills of course vary from person to person. Training is, if necessary, generally available. However, it should be noted that many municipalities rely heavily on—and actually depend on—expensive external expertise. This external expertise not only comes with the acquisition of all kinds of standardized packages, but is often hired on a project basis, from software houses and business consultants.

**Motivational basis of G2C and C2G relations**

The motivational basis for government to citizen (G2C) relations is a widely felt need to improve public service delivery to conquer the present fragmentation in services and to better reach citizens who depend on particular services (e.g. housing benefit). These ideas have been actively promoted by the program bureau OL2000, and municipalities have been stimulated to implement e-services by means of subsidies and advice. In recent years the national government has also promoted e-participation, and this appears to be catching on in local authorities.
**Enschede**

The urge to develop e-services is well-established within Enschede. The main motivation for developing e-government in Enschede has been a combination of ‘modernity’, an ambition to improve service delivery and expected efficiency gains.

The original development of e-government was in line with the ambition to develop Enschede, and its surrounding area, into a high-tech industrial area (business and science park) and to bring high-tech services to the Enschede citizens.

More recently, development has focused on improving efficiency. A study of nine products and services for which electronic services were offered has shown improvements in effectiveness (lower cost) and a lower workload (reported in Vos and Essen 2003). People handle more of their affairs online, and when they do visit the town hall, they come better prepared and make appointments in advance.

E-government in Enschede has also been furthered as a result of changes in the physical organization of the city’s administration. First, a merger of the building and housing department with the environmental department resulted in a concentration of the front-offices of the two departments (some 14 before the merger). This joined-up front-office required ICT support because it was staffed with generalist personnel. The Ole2000 system provided this support. The adoption of a new town hall in 2001 duplicated this process on a larger scale.

**Eindhoven**

While high-tech industry clearly dominates Eindhoven’s past and present, it is also a source of inspiration. This is expressed most clearly in the city slogan: ‘Eindhoven ahead in technology’. It thus comes as no surprise that Eindhoven is one of the cities trying to be a leader in ICT development and application, not only in its industry but also in the field of e-government.

As far as ESD is concerned, Eindhoven’s e-government co-ordinator feels that while the original OL2000 program and also the start of the Super Pilot aimed almost exclusively on creating benefits for clients, economic reality is recently causing a shift in focus. Decisions about which projects to pursue are increasingly influenced by considerations of effectiveness and efficiency. Therefore, the benefits of e-government for the city may gain importance over the benefits for the citizen, although they need not be incompatible, as Eindhoven still aims at the further development of multi-channel service delivery where individual citizens can select the service channels that suit them best.

**Millingen aan de Rijn**

In Millingen, the motivational basis for e-government is clearly developing. As sketched above, the website started as a result of personal curiosity and enthusiasm, both from the side of the website’s developer, as well as from members of the town council. This is still true today.
However, as the website develops further, its importance and its possible benefits are becoming more evident. One example of this is that the website is now regarded as a source of efficiency and organizational development. The fact that online forms are used increasingly, instead of personal visits, means that work is done more efficiently (completing several forms at one time). Also the website is regarded more and more as an important instrument for tourist promotion.

**Identifying users’ needs**

A recent study by Trendview (Fase 2003) reports that the services most wanted by people with Internet access are: change of address (75 per cent) and filing complaints (70 per cent). Registering the births of children is a service some 43 per cent of the respondents would like.

**Enschede**

Citizen involvement in the development of e-government has been limited in Enschede, although usability studies have been carried out. Early in the process eight ‘ordinary’ citizens were monitored in performing tasks with the system. In later stages other usability studies followed, the most recent one in the summer of 2003 (Vegt and Olde Scholtenhuis 2003). This survey showed the following ($n=396$)

- 71 per cent of the respondents were between 18 and 39 years old
- for 28 per cent of the respondents it was their first visit to the digital counter; 24.2 per cent had visited the counter two to five times, and 34.6 per cent already had over five visits
- the respondents valued the quick overview of services, clear presentation, amount of information and the options to search for services, but were less content with navigation, lay-out, the number of services and the menu search option
- most users (62.1 per cent) were capable of finding the relevant information without much difficulty
- the comprehensibility of the text on the website was judged excellent; the respondents valued the digital counter with a score of 7.2 on a scale from 1 to 10, while male respondents were somewhat less content (6.9) than female respondents (7.6)
- 76 per cent of the respondents said they found what they were looking for
- 95 per cent reported to be content with the results and 81 per cent indicated that they would certainly use the counter in the future.

Other research shows that both citizens and the municipality benefit from the digital counter because it requires fewer physical visits. The more services become online in a transaction manner, the less people need to visit the physical counters.

Although accessibility for the impaired is a requirement in the Super Pilot covenant, Enschede lags behind in this respect, and also support for non-Dutch speakers is very limited. The city portal—enschede.nl—provides some information in English and German. The Ole21 system is in Dutch only. This limitation is especially surprising given the fact that 12.1 per cent of the Enschede population is of non-western origin and may be expected to have problems with the Dutch language to some degree.
Eindhoven

The three programs in Eindhoven clearly require citizen involvement in many ways, and from their design this involvement is partly built in. Knowledge District and Digistein clearly address citizens as active participants in new experiments, and especially Digistein is explicitly open to local initiatives.

Moreover, Eindhoven applies several methods to involve its citizens in various e-government developments. One more general way of getting input from the citizen is the so-called *digipanel*. This panel, for which citizens can register, is invited on a regular basis to give its opinion concerning the city and its affairs, including e-government.

Another citizen involvement in 2002 has been realized in a larger research project in which Eindhoven combined online surveys, group sessions and individual sessions. Here the focus was Eindhoven’s website, the information requirements of citizens, the information provision, the ease of use and the design of the municipal website (Eindhoven 2002).

In addition to these larger initiatives aiming at citizen involvement, there are also examples of small-scale studies in which citizens from the Knowledge District and Digistein programs have been invited on an *ad hoc* basis to participate in testing prototypes.

Next to letting users have their say in e-government development, the city also takes care not to exclude citizens from the online world. At an early stage of development, the city took on contacts with the Meer Samen Foundation (‘More Together’), which promotes enhancing the labour market prospects of persons with functional impairments (http://www.meersamen.nl/). The result is that accessibility of the municipal websites for the (visually) impaired receives special attention.

Millingen aan de Rijn

Although Millingen has conducted no real research among its citizens with respect to their needs (the last general service monitor was conducted in 1999), the feeling is that the initiative caters to the needs and wishes of the population. The surfing behaviour, and especially the search strings entered through the search engine, are an important source in this respect. André Vreemann simply monitors what people are looking for and uses this information to maintain his site. Additionally, there is simply the matter of trust that the community is so small that any pressing desires will surface sooner rather than later.

**Partnership and co-operation**

In general, the forming of public-private partnerships to achieve public goals is rather popular in the Netherlands. This is especially the case for e-society programs, in which Dutch government is combining different roles, not only as an end user of technology, but also as a promoter of economic development and technological innovation. Many programs and program subsidies implicitly or explicitly promote the development of public-private partnerships, for instance by matching budget clauses which require private business investments. In this context, OL2000 and also Eindhoven’s Knowledge District are two examples in which such matching budget requirements were formulated.
**Enschede**

The original OL2000 project consortium consisted of the city of Enschede, the University of Twente, KPN (Dutch Telecom), the Dutch Institute for Welfare and Well-being (NIZW), SightLine (software developers) and BV Bijvoorbeeld (web designers). The consortium broke up in 1998/1999. The city has in recent years collaborated with Ontwerpbureau 10 (design bureau), Carp and the University of Twente. There have been a number of students working on the project as part of their master’s thesis research from the University of Twente, the University of Nijmegen and the Polytechnic University (Saxion).

Enschede participates in some national and regional networks (e.g. the Super Pilot group, the network city Twente platform) but, surprisingly, Enschede is not involved in European projects, nor does it have explicit links with cities outside the Netherlands.

Enschede co-operates with the cities of Oldenzaal (30,000 inhabitants) and Hellendoorn (32,000 inhabitants) to implement ESD systems based on the Ole21 system on their websites (http://www.oldenzaal.nl/; http://www.loket.oldenzaal.nl/ and http://www.hellendoorn.nl/).

**Eindhoven**

Both the Knowledge District and the Digistein program are developed in the form of formal partnerships.

Knowledge District is set up as a large public-private partnership taking the form of a private company: BV Kenniswijk. This company started its activities in February 2002, after a lengthy planning phase. The city of Eindhoven is one of the 27 partners involved in BV Kenniswijk. The other partners are large firms such as Shell, Philips, KPN (Dutch telecom), DHV (advice and engineering) and Casema (cable), but also the Technical University of Eindhoven and the Dutch State.

Digistein is managed by the foundation Mel@nioN, which is founded by the Digital City Eindhoven, SeniorWeb Eindhoven and Loket W—Digitolk, with support from a variety of local non-profit organizations and other local partners (such as the housing corporation and the library). The project moreover contains an example project—WWWijkopbouw—aiming at city development and social infrastructure, and it administers a fund for smaller grassroots initiatives.

**Millingen aan de Rijn**

In Millingen there are no formal partnerships but there is a strong involvement of many local parties, such as local sporting clubs (football, volleyball, marksman), the cable newspaper, the local radio station, the school, local pubs, doctors, dentists, local businesses and even the local ferryman. All these parties are interested in having their information on the local website and provide André Vreemann with news and updates, all on a non-commercial basis. Any important news is placed on the site itself (e.g. a pop-up at start-up warning the citizens that the local ferry is temporarily out of service). In addition, the site contains many links to other websites maintained by such parties.
Aspects of resource allocation

Snijder et al. (2003) in their study ‘behind the municipal website’ concluded that 75 per cent of the municipal websites are run by the municipal communications departments \( (n=55)\). In small communities (less than 10,000 inhabitants) on average 0.33 FTE is devoted to maintaining the website (out of a total of 47 FTE employed on average by these municipalities). In over 100,000 cities, the average number of FTEs involved in website maintenance is 1.9 out of a total of 1,383 FTE employed on average.

The cost of maintenance is about EUR 5,000 for a small town, while the cost runs up to EUR 25,000 for large cities. Less than half of the municipalities in the survey (42 per cent) have an annual budget for further development.

Enschede

Currently, the yearly capital and running cost of the ICT facilities amount to about EUR 8 million. This figure can be broken down as follows. About EUR 1.5 million is spent on IT staff—20 to 30 people, depending on what is taken into account. The annual budget for hardware and software (licences) is EUR 3 million. In addition, the central IT facilities with back-office applications cost around EUR 3 million. With respect to the Ole21 project, the running cost for the period from 1 July 2004 (when the Super Pilot project finished) until 31 December 2004 is expected to be EUR 265,000. The three departments in the city each contribute EUR 61,000 to the project annually, the rest is covered from the city budget. However, after 2005, the yearly funding available may consist only of the contributions of the three departments (EUR 183,000).

Eindhoven

As a large part of the e-government activities in Eindhoven is organized through complex partnerships and there are continuous changes in programs and projects, it is very difficult to get exact figures in terms of people and money involved in e-government.

For the three separate programs, the following funds have been reserved.

- For the Super Pilot, Eindhoven together with its partner, the city of Helmond, has access to a state subsidy of about EUR 2.7 million, for the period October 2001 until the end of December 2004. This subsidy is given on the basis of concrete project plans and bound to a matching condition which states that Eindhoven and Helmond themselves have to invest an equal amount (in terms of money and personnel).
- For the Knowledge District program a state subsidy of EUR 45 million has been reserved for a period of five years, on the condition that this budget is matched by the private partners.
- For Digistein, for a period of two years, a total budget is foreseen of EUR 3.6 million (EUR 0.6 million provided by the municipality, EUR 1.2 million by private partners and EUR 1.8 million by the National Action program Social Quality and ICT).

Although the total amount of reserved funding is impressive, there is an important catch. Given current economic conditions, it is clear that the private partners especially will not invest as much as initially foreseen. This means that, although the Super Pilot and
Digistein are still expected to meet their original investments, the Knowledge District program certainly will not. The eventual investments in this program will depend on future plans of the municipality and on the actual preparedness of the other partners involved to invest in them. Given the current state of the economy, this investment will be only a fraction of the EUR 90 million foreseen at the start of the project.

As far as personnel are concerned, the picture is not much clearer. All the different partners have personnel involved in the projects, and BV Kenniswijk currently employs 12 persons. The number of city personnel involved in the different projects varies, but at any one time it is between 50 and 100. In addition to this the city employs quite a lot of external specialists for diverse purposes.

**Millingen aan de Rijn**

In Millingen, the means for maintaining the website and for any other ambitions in e-government are very limited. For the whole e-government project (town hall and the website) less than two full-time equivalents are available and the average yearly total expenditure is a little under EUR 190,000.

**Lessons learned and critical aspects**

**Enschede**

The Ole21 project has been underway for over six years, and a lot has been learned (for more detailed accounts see for instance Lammers and Lips 2000; Vos and Essen 2003; Leenes 2002).

One of the most important lessons is that the implementation of electronic service delivery is difficult. The primary reason may well be the fact that ESD development is much more an organizational change project than a technical project dealing with the development of an electronic front-end to the existing organization.

ESD development touches upon the essence of public service delivery: the work processes behind the services. Hence it touches known sensitive areas such as tasks and responsibilities, power structures and private and public agendas. In some cases the development of ESD leads to radical redesign of procedures (and therefore people’s positions). The service module for the city center parking permit is a case in point. The old procedure was document based (identity papers and proof of residence and vehicle ownership). The electronic procedure instead relies on online authentic registers, possibly making the traditional clerk redundant.

There is strong political and management commitment for Ole21, although its further development is clouded pending budgetary discussions. Alderman Swart’s commitment and ambassadorship over the years has been an important factor in Ole21’s success.

The Ole21 system is rooted in the organization, but there is room for improvement. The digital counter is seen too much as a project of the Registry General, the project’s current host department. The other departments, such as social affairs and economic affairs, therefore do not see the potential of ESD and do little to stimulate the proper implementation of ‘their’ services.
The content relation managers are rather passive and are often behind on updating information. This is primarily due to the fact that their principal task is to implement new services, while updating existing services and information has to be done in idle time. The domain experts are not much of a help in this respect. They are too passive and rely on the Ole21 development team to take action.

Finally, on the lowest level, that of writing website content, problems arise because it turns out to be very difficult to produce concise text that is understandable by even the least educated users.

**Eindhoven**

Although the projects in Eindhoven seem to manage rather well, the city’s program coordinator identifies several critical success factors for the development of e-government in his town.

In general, the most important factor has been council level commitment. The commitments of the former mayor and his city manager have been essential in getting Eindhoven where it is today. Their networks and ambassadorship were instrumental in attracting state funding and in developing the public-private partnership around Knowledge District. Also commitment on the council level is crucial within the city itself when it comes to allocating and protecting project resources.

Another factor which is increasingly important for more advanced ESD development is the availability and development of basic registrations as reliable data sources.

A third, interesting, problem, which requires serious attention, is the lack of awareness of Eindhoven’s citizens of the ESD initiatives. Whereas Enschede has billboards and advertisements to inform its citizens about the electronic counter and its possibilities, Eindhoven has done nothing like this. People therefore have to find the websites on their own, which means it takes far more time for the new facilities to become widely used.

Finally there is the concern about future resources. Knowledge District, especially, faces specific problems due to its dependence on a large number of public and private parties in turbulent economic times. When the partnership was developed at the height of the Internet boom, the prospects of the project were regarded as excellent and all partners were likely to invest heavily in this type of project. The Internet hype has passed and we have witnessed several years of economic slow-down. This has made partners more reluctant to invest in the Knowledge District.
Millingen aan de Rijn

The highly informal context in Millingen is seen to provide both benefits and problems: having no official plan gives the developer much freedom but also hampers development when co-operation from the village bureaucracy is needed.

Although the website was never really steered from the town hall, an interesting finding is that it is gaining relevancy for administrative practices and having explicit consequences for the town’s bureaucracy. The fact that suddenly there was a website with electronic forms, for instance, implied that the municipal workers had to accept and process these forms on a regular basis, which required arrangements to be made in the town hall’s workflows.

The broader picture

At first glance, the Netherlands seems to be in an excellent position to develop e-government (as also noted by Oakley 2000). Its population is well educated and relatively prosperous, and broadband Internet penetration in households is relatively high. Also, the Netherlands has been one of the first countries to start defining national programs to develop electronic service delivery at a local level.

As we have seen in our case studies, there are now several examples of cities, and also smaller municipalities, doing rather well in this respect. The Super Pilots have already gone a long way, and even a village like Millingen has done a marvellous job in realizing Internet presence.

However, if we reflect on our case studies and the more general data for the Netherlands, the overall picture is less favourable. The maturity of the municipal websites is not always high (see Figure 5.3), citizens judge the service quality as ‘passable’ (Table 5.1), and there are not many online services transaction sites, to name but a few problems.

The shortcomings of Dutch e-government become even more apparent when we look at international benchmarks. These show serious reasons to worry. Although the Netherlands initially was among the e-government leaders in the world, it is now clearly slipping. The number of fully online services is low, and progress in developing these is lower than in other European countries (Cap Gemini Ernst & Young 2004).

The reason for this lagging behind may be understood when we look at the institutional context in the Netherlands, where municipalities, as the key providers of public services, have a strong autonomy, value voluntarism almost above anything else, and perform on a scale where they seem to have little to gain from ESD.

The problems of Dutch e-government development begin with the questions of policy, steering and central co-ordination. The Ministry of the Interior and Kingdom Relations seems to be made for this part, but operates within the constitutional make-up of the Netherlands in which the Dutch governmental culture, which acknowledges the autonomy of the different layers and sectors of government (ministries), plays an important role. In practice this results in little room for centralized policy making. In the Netherlands it is felt that e-government development requires voluntary participation and
consensus among the different participants, making it a typically Dutch syrupy process, the famous *Poldermodel*.

Actual e-government development is therefore a question of local ambitions and opportunities. On this local level there is much inertia. As Hoogwout (2001) points out, there are many factors that make investing in ESD at a local level not very sensible. The frequency of most service encounters is low (e.g. passport, once every five years for 70 per cent of the population, rental subsidy once a year for 8 per cent of the population). And, to further downplay the need for change, citizens are quite content with service delivery as it is. So, in a small town, the benefits seldom seem worth the efforts. It should therefore not come as a surprise that local authorities are not too keen to jump on the e-government bandwagon.

Thus, although there are municipalities that are in themselves enthusiastic about e-government—such as Enschede, Eindhoven and Millingen—the central government has to invest in order to get things going on a larger scale. The OL2000 project and the projects following on its heels, culminating in the Super Pilot project, are examples of this insight put into practice.

If we take a step back, there is also another institutional factor that may call for slower than anticipated progress. The primary focus of ESD in the Netherlands has always been the municipalities. Since they account for some 70 per cent of the public services, and are the natural service point for the citizens, this seems very sensible. But are they really the ones that should develop ESD?

Leaving aside the national and regional services, and focusing on the local level, we may observe that not all services are equal. As we have discussed earlier (Leenes and Svensson 2002), three relevant types of services are delivered by municipalities.

- **Truly local services**: i.e. services which are provided on the basis of local policy and local autonomy, concerning the management of the municipalities’ own affairs, free from interference by the State. Examples of such services are: street and community care and safety, local taxes, sports, recreation and culture.
- **Joint governance services**: i.e. services which are rooted in national legislation, but which are administered by the municipalities, with the municipalities having their own (additional) policy responsibilities and discretionary powers. An example in the Netherlands is the municipal social assistance, based on the General Assistance Act.
- **Municipal delivery of national services**: i.e. the administration of national policy by the municipalities, where the policy is completely defined at the national level, discretion is limited and the administration by the municipalities is simply a convenient means of bringing the service to the citizens. Clear examples of such services are the issuing of drivers’ licences and passports.

The natural candidate to develop online delivery of these services seems to be the institution from which they (legally) originate. In this view electronic services for passports or drivers’ licences should be developed at the national level. And, the development of strictly local services may be expected to take place at the local level. However, this division of labour is not often seen in the Netherlands. Although development of online services for national policy mainly takes place at the national level, local authorities also provide information for these products. Most local author-
ities, for instance, have tailor-made information on rental subsidies, including rental subsidy calculators on their websites, although this is a national service.

Also, for the rest of the services, almost all development takes place at the local level. As a result, many municipalities are developing online services for what are basically very similar products. This not only seems inefficient, but, given the limited resources most municipalities have at their disposal, is also a slow and cumbersome process. When municipalities realize the amount of effort needed to do a proper job, they may even throw in the towel, and wait for better times.

How will Dutch local e-government develop in the near future? At this moment, exactly 250 of the 500 Dutch municipalities have less than 20,000 inhabitants and, in that sense, they have probably more in common with Millingen than with the Super Pilot cities of The Hague, Eindhoven and Enschede (which are all in the top 12 of largest cities). Given the Dutch development model, this implies they really cannot do much better than Millingen and maybe should even take Millingen as a role model.

On the brighter side, there are hints that ideas on (e-)Government development are changing. To mention a few: the Netherlands is also in the process of municipal reform, in which smaller municipalities merge to form larger ones. Local autonomy is being questioned on aspects relating to service delivery (BZK 2001). In this context, local authorities are now starting to co-operate more in the development of online services, for example on submitting building plans (Hoogwout 2003).

Notes

1 Enschede is also the hometown of both authors, who were involved in the ESD developments in Enschede from the start.
2 According to the Webdam monitor, September 2003 (http://www.webdam.nl/).
3 These departments were: Public Administration and Public Policy, Computer Science, Mathematics, and finally Philosophy of Science and Technology.
4 The ‘e’ in Ole stands for Enschede.
5 An interesting question would be if a strong e-government champion in the guise of a high-level central co-ordinator on the central level (e.g. like the British e-Envoy), would work in the Netherlands.

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6
Local e-government in the United Kingdom

Martin Ferguson

Introduction

The main focus of this chapter is the approach to local e-government taken in England. The focus is on the local level since it is here that some 80 per cent of citizen-government transactions take place. Also, it is at the local level that policies, plans, targets and implementation are most advanced. Some additional commentary on progress in Wales and Scotland is provided to complete the UK coverage.

The chapter draws on research led by the author at the Improvement and Development Agency (IDeA) with the Society of IT Management (Socitm) for the Local E-government Now series (IDeA and Socitm 2001, 2002 and 2003); on the Implementing E-Government Statements prepared by each council in England and on the national strategy for local e-government in England (ODPM 2002). In addition, case study material about Tameside, Lewisham, Camden and Liverpool is drawn from the e-government resource area in the IDeA-Knowledge database.

E-government is a central plank in the British Prime Minister’s UK online vision of Britain as a modern nation, able to compete successfully in a global economy (Office of the e-Envoy 2000). His view is that, in order to succeed, Britain needs not only the highest quality of public services attainable, but also a vigorous civil society and an empowered population, at ease with—and able to exploit—the opportunities that modern technology can bring. Within the Prime Minister’s Cabinet Office, the Office of the e-Envoy (OeE) is leading the drive to get the UK online, to ensure that the country, its citizens and its businesses derive maximum benefit from the knowledge economy. In order to support this aim, the OeE has three core objectives:

• to make the UK the best environment in the world for e-commerce by 2002
• to ensure that everyone who wants it has access to the Internet by 2005
• to make all government services available electronically by 2005.

The latest report from the e-Minister and e-Envoy to the Prime Minister, detailing progress against the UK online action plan is set out in the ‘UK online Annual Report’ (Office of the e-Envoy 2003).

The vision for ‘modernized’ local government is set out in the White Paper ‘Strong Local Leadership—Quality Services’ (DTLR 2001). The paper proposes: ‘strong, vibrant,
innovative and responsive local government delivering the quality of local leadership and public services that their communities need’.

The paper further envisages that councils will be resourced in order to achieve this vision, that they will be freed up to deliver tangible improvements in services and to lead and empower their communities. Other public sector bodies will also be encouraged to work effectively with councils to make sure that strong local leadership can deliver services that are joined up and focused on meeting the real needs of customers.

The contribution of local e-government is articulated in the national strategy (ODPM 2002:5):

E-government is not an end in itself. It is at the heart of the drive to modernize government. Modernizing local government is about enhancing the quality of local services and the effectiveness of local democracy… Local e-government can underpin all of this. It is about:

• Transforming services—making them more accessible, more convenient, more responsive and more cost-effective. It can make services more accessible to people with disabilities. It can make it easier to join up local services (within councils, between councils, and between councils and other public, voluntary and private agencies). It can help improve the customer’s experience of dealing with local public services, whoever provides them.

• Renewing local democracy—making councils more open, more accountable, more inclusive and better able to lead their communities: e-government can enhance the opportunities for citizens to debate with each other, to engage with their local services and councils, to access their political representatives and hold them to account. It can also support councilors in their executive, scrutiny and representative roles.

• Promoting local economic vitality—a modern communications infrastructure, a skilled workforce and the active promotion of e-business can help councils and regions promote employment in their areas and improve the employability of their citizens.

State of progress

Central and local governments have adopted a target of making all services available electronically by December 2005 (ODPM 2002:7). Services may be provided on the Internet, but the target recognizes that this should not exclude other ways of delivering services. The Government’s expectation is that services will be made available in people’s homes, on websites, over the telephone and at council offices and one-stop shops in ways that citizens will use.

Evidence from IDeA and Socitm (2001) suggests that by 2000/01, a small number of UK councils were beginning to pioneer the implementation of local e-government. In 2001/02, nationally funded Pathfinder projects allowed selected councils to test and innovate new technology applications. These have been followed in 2003/04 by funding for partnerships to enable councils to work together or with other partners to aggregate demand, while National Projects are developing common solutions for use by councils. Finally, a support and capacity program has been established to assist ‘struggling’
councils and to help all councils to adopt e-government solutions emerging from the national projects (ODPM 2003a).

The key instrument used to embed local implementation of e-government into the wider strategies of different levels of government has been the preparation of ‘Implementing e-Government’ (IEG) statements. First required in 2001, for many councils, the actual process of producing an IEG statement, with the need to gain support for it from members and officers alike, has proved valuable. In some cases, this has been the first time that councils had considered making reference to others outside their own organizational boundaries about ICT issues, and the first time other private and public sector partners had been seen to have an opinion about ICT issues that could affect internal decisions. Local e-government moved up the strategic agenda in councils across the country as a result.

After encouragement from the responsible central government department, and some revisions, every English council, regional agencies in London, and the eight national park authorities submitted ‘satisfactory’ IEG statements. As a result, all councils became eligible for a share of the £350 million Local Government Online funding set out in the Government’s Spending Review 2000. The allocation, for 2002/03, of a grant of £200,000 each made a significant and very welcome contribution to many shire district councils.

For those councils that have already committed large budgets to e-government, whether from internal resources, Invest To Save funding, the Capital Modernization Fund, private finance initiatives, public-private partnerships, EU grants or from one of the many other sources being used for this purpose, this across-the-board funding has been of lesser significance. However, in achieving the start of development of e-government on a broad front, the funding has made an important contribution.

The national strategy for local e-government proposed that a large proportion of the Local Government Online fund (now increased to £675 million) should be allocated to the development of national projects. The aim of these projects would be to develop national products and services for key building blocks of e-government (e.g. customer relationship management) or in areas identified jointly by central and local government as priority services (e.g. planning).

On 12 February 2004, the Local e-Government Minister announced the allocation of further funding:

- further £500,000 per authority linked to priority services
- £10 million to support action plans for ‘struggling’ authorities
- £20 million to support roll-out of national projects
- £4 million to support regional partnerships
- support and capacity funding for an Implementation Support Unit and a Strategic Support Unit
- £10 million for e-innovations projects.

Some 20 national projects have been formally agreed (ODPM 2004a) to address the following areas.

Analysis of the IEG statements submitted in November 2003 shows that the average council had 49 per cent of its services online and expects to reach 100 per cent by the end of 2005; is part of a local e-government partnership; is concerned about capacity and...
resources; and wants Government to develop common solutions to reduce costs, and implementation time (ODPM 2004b).

Over 70 per cent of councils report that they are live or implementing e-enabled one-stop shops, customer relation management (CRM) systems and contact centres, while over 95 per cent report that they are live or implementing transactional websites. The progress towards implementing transactional websites represents a particular challenge given that only 2 per cent of council websites (represented by ten councils) were deemed to be transactional in Socitm Insight’s Better Connected annual survey (Socitm 2003b). Adoption of CRM is poised to grow rapidly from its live base of less than 20 per cent of councils in 2003 to almost 100 per cent at the end of 2005.

A wide range of organizations, listed in Table 6.1, offer support to councils in implementing e-government.

The IDeA’s Director of e-Government has a key role to play in embedding e-government into the overall strategies for public services at the level of the local council. His team is responsible for the following activities:

- Policy, research, strategy
- Understanding, awareness raising, influencing
- Local E-government Now series

<table>
<thead>
<tr>
<th>Table 6.1 Responsibilities of different e-government institutions, UK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Office of the Deputy Prime Minister (ODPM)</strong></td>
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<td><strong>Office of the e-Envoy (OeE)</strong></td>
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<td><strong>Local Government Association (LGA)</strong></td>
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<td><strong>Improvement and Development Agency (IDeA)</strong></td>
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<td><strong>Society of IT Management (Socitm)</strong></td>
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<td><strong>Society of Local Authority Chief Executives and Senior Managers (SOLACE)</strong></td>
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<td><strong>Employers’ Organization (EO)</strong></td>
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</tbody>
</table>

Source: Own presentation.

E-champions network

- A network of leaders of local implementation (100 per cent membership by English councils)
- Regional events series, hotline, e-newsletter
E-delivery

• Strategic Support Unit (expert advice)
• Implementation Support Unit (support for struggling councils)

National infrastructure

• Providing the national backbone for implementing e-government
• National Land and Property Gazetteer, National Land Inventory System, IDeA: Marketplace and esd-toolkit

The overall picture is one in which local e-government is making steady progress. Considerable challenges remain, but a focus on ‘priority services’ to ensure take-up and use is gaining ground. These shared priority services, agreed between the local government association (LGA) and ODPM (2003b), comprise:

• raising standards across schools
• improving the quality of life of young and old
• promoting healthier communities
• creating safer and stronger communities
• transforming our local environment
• meeting local transport needs more effectively
• promoting the economic vitality of localities.

There is widespread recognition that there is a need to build capacity in all sectors of the community to use e-government services and opportunities for democratic participation. Strategic support and partnership arrangements are being established to minimize risk, while there is an extensive national program to share best practice and lessons learned. Finally, 2005 is recognized as a milestone, not an end in itself. The next section looks in-depth at the experience of implementing local e-government in a number of English councils.

Profile of local e-government

Vision

Development of a clear vision, accompanied by a strong steer from the top of the organization is identified by IDeA-Socitm as the basis for councils to improve services to meet the expectations of the public and the government. Evidence from the case study councils shows that the people leading the way demonstrated knowledge of the possibilities that the advances in technology bring, coupled with a clear view of the ways in which the public will demand services.

On the basis of the findings in the case studies the key characteristics of developing the vision for local e-government may be stated as:
Table 6.2 Key characteristics of developing the vision for local e-government

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear goals</td>
<td>Have you developed clear goals that set out where your community wants to be?</td>
</tr>
<tr>
<td>Shared values</td>
<td>Have you gained agreement to your goals and priorities from the whole community?</td>
</tr>
<tr>
<td>Commitment to change</td>
<td>Are you re-aligning all parts of your organization away from traditional silos of service?</td>
</tr>
<tr>
<td>Consultation</td>
<td>Have you consulted with all your customers and citizens about their needs and expectations?</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Have you engaged with partners in your local community to ensure joined-up working?</td>
</tr>
</tbody>
</table>

Source: Own presentation.

In each case, these key characteristics require a continuing and developing knowledge of the customer, an understanding of the citizen and of the community in which local e-government is expected to operate. It is essential that the customer is kept at the centre of the vision, and that the vision is kept at the centre of the changes as they are developed and implemented.

A growing number of councils are beginning to set out a clear vision that brings together the two central themes—the impact of technology opportunity and the growing expectations of the public. Where the vision is clear, it tends to be driven by one or two highly committed individuals at the very top of the organization.

Lewisham Council’s commitment to electronic government is outlined in Where it’s at (Lewisham, undated) which focuses on delivery of integrated and accessible services. The aim is to deliver the council’s Citizen First program by 2005, including on-line services through the council’s website:

Our vision is that in five years time customers will be able to access council and other services by telephone or Internet 24 hours a day, seven days a week. The customer will also be able to visit one of a small number of local, corporate one-stop shops with extended opening hours.

This early review helped the council to fundamentally challenge the way that it delivered services across the borough. Detailed analysis of local needs and expectations was used to inform future service provision to the community. Best practice and new technology from both the public and private sectors has been used to develop fully integrated and accessible services for local people.

Camden Council views the implementation of e-government not as a technology project but as an opportunity to address the inequality apparent within the borough. The ‘re-creation’ of the council is not an end in itself, but a means to creating a better community environment. Camden’s vision includes addressing the digital divide—the
gap between those with access to ICT and possessing ICT skills, and those who have neither.

The council is seeking to create portals around small geographies to assist in generating a sense of community and reducing feelings of isolation. The council also hopes to empower individuals by providing convenient access to educational material—and in this way increasing the likelihood of Camden’s citizens gaining employment in the modern economy. This is being done through a range of projects such as the establishment of 29 UK Online centres in the most deprived parts of the borough, providing access to ICT and ICT training targeted at the most socially excluded sections of the community, and the development of CamdenNet—a model website for use by community groups.

**Strategy**

At the strategic level, Socitm’s *IT Trends* report (Socitm 2003a) found an increasing awareness of the objectives of the e-government program and a rising optimism about the potential of ICT to improve the performance of council services among many chief officers. A concern is that, in many councils, the development of e-government strategies will be ICT-led, rather than customer-focused and service-led. This will limit attempts to integrate e-government into the full range of local authority strategies, including Community Plans, Neighbourhood Renewal, Best Value Performance Plans, Agenda 21, etc.

Some councils are already integrating their local e-government into their wider strategic planning, with some good practices emerging. Examples include the City of York, where the council is attempting to achieve ‘step change’ in performance by integrating the opportunities presented by local e-government into its ‘Best Value’ review of access to services. Extensive consultation led to a customer service strategy, strongly underpinned by e-government practices. Similarly, Sunderland has brought together all of its strategic policy working, spanning ‘Best Value’, ‘Community Planning’, regeneration, ICT and e-government, into a single organizational unit reporting to the chief executive. Lewisham has developed a coherent linkage between its corporate objectives and e-government plans as revealed in its published e-government strategy (Lewisham, undated) and the wide range of supporting initiatives. In contrast, Knowsley’s ‘Community Information Program’ (Knowsley 2000) has emerged from a wide range of local telematics and community-based initiatives. Camden appears to be developing a blend of clear leadership from the top, coupled with community involvement in prioritizing its plans for implementing local e-government.

The preparation of business cases for change is well established in Surrey County Council, including the case for retaining the status quo. Expecting service heads to argue their case if they believe the public is better served by leaving things as they are is one of the fundamental aspects of the ‘Best Value’ challenge process. Bringing the case for e-services into the Best Value regime in this way ensures that the review process challenges any decision to remain unchanged in the face of the opportunities presented by e-government.

Tameside has developed an inclusive borough-wide strategy called e-Tameside. Businesses, voluntary organizations, public bodies, schools and colleges have signed up
to e-Tameside. The focus on social inclusion has emphasized the importance of developing ICT skills across the local community. At the centre of their drive for change and improvement is a 12-year program of organizational development and cultural change (initially called Tameside 2000 now Tameside 20:20 Vision). This has been led from the top. It has meant transforming the culture of the organization to one focused on its customers and outcomes. Its aim has been to build the capacity of the organization to deliver its priorities. It has involved six-monthly Tameside 20:20 Vision seminars led by the Chief Executive to all managers and a sample of staff. The contents are cascaded to all staff.

Tameside’s e-government vision goes far beyond improving services electronically—it permeates the whole of the council strategy in developing its community leadership role. Tameside’s strategy has the following priorities:

• support for businesses, the development of the local electronic marketplace and a business portal into public services and public procurement
• development, promotion and take-up of e-learning from basic skills through to further and higher education based on the Tameside Passport to Learning and the establishment of a qualifications framework and local targets
• development of a borough-wide network with local access points in libraries, voluntary organizations, businesses, schools and colleges and special measures for hard-to-reach groups
• speedy implementation of electronic service delivery coordinated with partners and taking maximum opportunity to improve services and their efficiencies
• social inclusion measures to ensure that barriers to equality of opportunity are removed
• inward investment and the attraction of European and central government funds.

There is a clear hierarchy of plans including a Community Strategy, Corporate Plan, Best Value Performance Plan, Service Business Plans, Employee Development Reviews, translating citizens’ priorities into objectives for individual employees, and partnership plans, such as the City Pride Economic Development Plan.

Executive commitment

In authorities as diverse as the East Riding of Yorkshire, Newham, York and Ipswich, a committed and informed chief executive and elected leader of the council are prerequisites for any council to move at the speed necessary to improve services to meet the expectations of the public and of Government. Those councils that are moving fastest towards e-government demonstrate a clear vision, accompanied by a strong steer from the top of the organization. The people who are leading the way demonstrate knowledge of the possibilities that the advances in technology bring, coupled with a clear view of the ways in which the public will demand services. In short, they have developed the enthusiasm, energy, perseverance and wisdom to enable the changes required.

The leader of Tameside Council, elected members and chief executive have given strong support and direction to its e-government strategy. Tameside has modernized its governance structure into a cabinet model and sees e-government as an integral part of the modernization agenda for local government. The council appointed a senior member
of the cabinet as its ‘e-champion’. The council’s webmaster, who is based in the ICT department, reports directly to this e-champion.

In Lewisham Council, councillors and senior managers maintain the momentum and drive towards implementing local e-government and modernizing services at the highest level. New political and management structures mean that the council works and operates in a thematic and cross-cutting way that facilitates service integration and supports its one-stop-shop approach. The position of ‘Head of e-Government’ was established to build the service and commission partnerships with a ‘Public Management Forum’, external agencies and private sector partners. The authority demonstrates concrete improvements in developing seamless and accessible services, making the best use of new technology and increasing customer satisfaction.

At Camden Council, a wide range of stakeholders provide leadership, support and enthusiasm for the e-government agenda. These stakeholders include the leader, cabinet members, the chief executive and corporate management team, the director of finance, who is also the officer e-champion, the head of e-services and departmental service heads.

In each case, the lead comes from those areas within each organization that are experiencing pressure to change. Where there is a need to change for internal operation reasons, as happened in Social Services in Bromley, the lead can come from there. Where there is a need to change because the community generates the pressure, as in the East Riding of Yorkshire, West Lothian and Torfaen, the lead needs to recognize the customer care issues and come from that perspective.

**Organization**

A catalyst for developing the vision for local e-government and the deep changes required in council organizations has been the establishment of a designated elected member and a senior officer on the management team as ‘e-champions’ for e-government.

In Camden, a strategic management team acts as a ‘modernizing group’ to provide overall organizational leadership for Camden’s e-government initiatives. The group brings together, at a strategic level, e-government, organizational development and resource planning. Also, a cross-party working group of members exists to consider e-government issues. This is known as the e-services working group. Delivering the envisaged organization is a long-term undertaking. The council recognizes that enduring executive and political support is critical to success or failure.

There is a long-standing recognition in the UK that e-government is concerned as much with people and processes as it is with technology. IDEA’s esd-toolkit has built on work in councils such as Tameside, Camden and Lewisham to provide generic, re-engineered maps for over 700 processes performed in English councils. Councils such as Hertfordshire County Council have re-constructed their services and business processes around particular customer groups (e.g. children’s services encompassing education and social services) and are now reconfiguring the services to be delivered through e-enabled channels. Elsewhere, Liverpool Direct is a contact centre initiative that is driving change and is re-engineering processes to support customers’ requirements. The East Riding is
an example of a rural authority that has re-constructed its services for multichannel delivery throughout its diverse communities.

In many councils, there is a belief that the organizational structure, which in the past has served the authority well, is no longer appropriate for information-age operations. Organization by vertical function enables a high degree of specialization, but this specialization is often accompanied by an internal orientation. Communication across, and co-operation between, functions can also be problematic. Progress in this form of organization is often limited to incremental improvements. Camden Council has recognized that, in order to gain ‘step-change’ improvements in service effectiveness and efficiency, and to create a truly customer-focused, responsive organization, a radical change in organization design is required. Re-creation of the council is facilitated through the harnessing of new technologies. A council officer explains:

E-government is about delivering citizen focused service, high quality service, continuously improving service, at reduced cost—and all those things are important. It’s about delivering change, and supporting the council’s strategic direction. It isn’t about the technology… I think that’s one of the interesting things, because we are recognized as delivering high quality services. I think it’s because we’ve got to that stage, and recognized that we’ve probably got as far as we can get with the present way of doing things—we could make incremental improvements—but we couldn’t make a radical shift.

…and the only way to do that is to find some mechanism to effect that change, and the obvious mechanism is e-government… I think there’s a desire here for real change, and how do you do that? Well, you do it through ICT. The idea is ICT is a change agent.

Camden is moving from a functional, silo-based form of organization to a holistic, integrated structure. Such a change has dramatic implications for the distribution of power across the organization. In becoming more responsive to customer needs, Camden will devolve decision-making responsibility, whenever possible, to the front line, customer interface.

Delivering this ‘Virtual Town Hall’ model of organization requires changes to the roles, responsibilities and work patterns of authority staff. There must be a willingness on the part of council staff to change. Equally, resistance on the part of staff can provide a significant barrier to progress. Tameside has re-organized itself into 20 service units reporting to four strategic directors, in order to become more responsive to the needs of its citizens and customers. Each service unit has its e-champion. This approach has helped to break down departmental ‘silos’ that often act as a powerful barrier against change. Support from the highest levels in the organization has enabled the ICT unit to focus considerable resources on developing a web-enabled environment for new systems. Half of its 30 strong team is now dedicated to integrating the back-office systems with the website developments. The ICT function has a clear set of priorities—driven by the remit to make all its systems available electronically by 2003 (two years before the government’s deadline). Moreover, the methodology employed involves challenging and changing existing processes. As a result of this approach, e-government at Tameside is
doing more than simply adding a technological veneer onto current ways of doing things. Implementation is managed by developing action plans and targets.

Tameside’s strategy is kept under constant review and is subject to consultation with the public through the Citizens Panel. Partnerships are being extended as more organizations are encouraged to sign up to e-Tameside. A team of partners oversees and develops the strategy and progresses the related action plans. At the heart of the drive for improvement has been a formal program of organizational development and cultural change—Tameside 20:20 Vision. This vision recognizes that the ‘traditional model’ of a local authority, i.e. inward-looking, process not outcome driven, hidebound by rules and obsessed with structures rather than systems, would never be able to deliver improved services. That is why the council embarked on a major program of organizational development. The program sets out a culture in which better services for local people act as the focus for every employee.

In its early stages, the organizational development program focused on clarifying responsibilities, decentralizing decision-making, delegating responsibility, improving internal and external communications, developing a customer focus, investing in the development of staff and developing the management team. The program introduced business and performance management systems. A key measure of their success has been about how Tameside has improved its financial management. In 1992, inadequate budget planning coupled with a shrinking resource base led to a budget crisis. Eight years on, the success of the organizational development program in ensuring sound budgetary systems was evidenced by the council’s external auditors.

Tameside refreshed its organizational development process in 1995. Their approach followed the work of the W.Edwards Deming Institute. Specifically Deming’s philosophy puts quality at the very centre of everything that is done and emphasizes the concept of continuous improvement within a framework of systems thinking. Tameside commitment to continuous improvement has become a fundamental part of its organizational development program. A staff survey in 2000 showed that over 70 per cent of staff were satisfied that they had a clear understanding of their job and two-thirds of staff were happy with the levels of supervision and support received from their line manager.

**Resources**

Resourcing is a basic question that arises whenever local e-government is discussed. Plans require transformation of access to services and introduction of new processes, often alongside established operations and in a context of rising demand. The case for partnership working comes out of this complex equation. But so does the case for changing the way in which resources are identified, divided up and invested.

In West Lothian, the council is trying to get away from the culture of ‘annuality’ in budgets and in planning, to look at a longer timescale. In that scenario, a decision to invest all development resources into a single service one year can be backed up by clear plans to move that investment into other areas in later years. The concept of sharing and investment in the places that will generate the best returns for the whole community can only operate effectively if this approach is engendered, and trust between services is developed. Including partners in this approach represents a further challenge. It is not just a question of sharing out the resources for development. There are implications for the
costs of sustaining individual services, while staff are involved in implementing change processes and new service channels. Further, experience from councils such as Three Rivers is that the introduction of new channels brings increased demand and new support needs.

Joined-up working requires collaborative planning, funding and sustainability. Medium-term, joined-up funding, such as has been seen in the National Grid for Learning and People’s Network developments, can move the whole agenda forward. However, the UK Government has recognized the need to support this agenda by joining up and rationalizing both the strategic planning agenda and the funding that results. The White Paper ‘Strong Local Leadership—Quality Public Services’ (DTLR 2001) promises changes in the demands for strategies and plans. It recognizes that local government is required to produce 66 separate plans and strategies and to maintain them.

The issue of fragmented funding remains to be addressed. Councils seek funding for local e-government initiatives from a variety of sources. They are using Local Government Online funding. Many of them have gained Invest to Save funding and, more recently, are participating in national projects. In Scotland, councils have used the Modernizing Government Fund, and in Wales the National Assembly committed to provide additional funding in 2002/3 and 2003/4 for the progression of projects identified within IEG statements. Across the UK, councils have secured European Union funding, National Lottery funding, service-specific grants such as Wolfson Challenge funding in libraries, and regional support. The Research Officer, East Riding of Yorkshire, offers the following view:

It is important to develop the skills to match funding opportunities with the good ideas coming from the people in the organization. We make sure we always have a range of projects ready on the starting blocks, with good business cases made, so we can just start them off if a funding chance arises.

Sustaining change is a key issue. Once a change has been implemented, it has a knock-on effect on all other elements of service that touch it. It impacts on the staff and the managers who need to develop new skills to ensure the new channels or new services are flexible and responsive, and remain viable and usable. It impacts on those people who are supporting and sustaining the traditional channels. There is a need for constant review of the outcomes and assessment of the new opportunities that they bring. As the Corporate Change Manager at Bromley Council states:

There is a need for someone to be keeping an eye on the vision, and reminding people what the vision is about and why. The day-to-day problems of running services and budgets can result in people taking their eye off the big picture.

Every change that takes place within an organization has an impact on the wider organization. The sort of transformational changes that are implied by a re-thinking of the whole supply-and-delivery chains for e-government have a wider impact on the rest of the organization. Raised expectations of customers in one service area, for example, will
result in raised expectations in another, unlinked service. Increased consultation and involvement in planning for one customer group will spill over into other customer groups because there is always overlap between groups. The act of e-enabling consultation through one extra channel to one area of business will require all non-e-enabled channels to be made available through the e-enabled channel, impacting on the parts of the business that, on the face of it, are not expected to change.

Evidence from UK councils is that plans need constant evaluation and refocusing as the process of change progresses. Dynamic change has to become the steady state of a modern local authority. In Surrey County Council (SCC), a Performance Wheel was introduced as a tool to help teams to improve their performance, taking into account the four perspectives of a ‘balanced scorecard’ (Kaplan and Norton 1995). The SCC Performance Wheel is designed to help the council’s management to focus better on how they are doing at a high level. However, to be really effective the priorities need to be broken down into greater levels of detail, and activity at a service, team and individual level.

Priorities, agreed by the executive, constitute the key priorities towards which the whole council is directing its efforts.

A new process to link priorities from corporate to service levels involves the creation of Service Plans and Service Commissioning Agreements

![Performance wheel](image_url)

*Figure 6.1 Performance wheel.*
Service Plans are high-level plans for all services. The purpose of the Service Plan is to:

- provide a clear statement about what the service is striving to achieve
- link Surrey County Council’s key priorities, service priorities, service performance and resources.

The plans are developed through a process of staff consultation and involvement to ensure input from a cross-section of the service, as well as ownership, commitment and understanding. Agreement is required from the Executive Director and from relevant executive portfolio holders. SCAs represent the Service Heads’ personal commitment to the delivery of their Service Plan. Agreement for the SCA is required of both the Strategy Team and the Executive.

A Corporate Risk Management Group (CRMG) is leading the work on risk management throughout the council. Membership of the group includes representatives from all the main service streams, along with the borough solicitor, internal audit, risk management, health and safety and human resources. The borough treasurer chairs the group. The identification of corporate risks is being done by CRMG with the aid of the Audit Commission’s National Risk Assessment Tool for Local Government Audits. For each risk identified, an officer is nominated to provide assurance that the risk is being addressed. At service unit level, unit managers are required to address key risks in their business plans.

A comprehensive risk register is being created which summarizes both corporate/strategic risks and service area risks, along with a note of who is responsible for managing each risk. The register will then be monitored by CRMG and progress reports will be sent to members.

For Tameside, measurement, the application of statistical process control and systems thinking are the heart of continuous improvement and review. All Tameside’s managers are tasked with applying continuous improvement, and that means measuring their processes and outcomes. These performance indicators are built into their business plans and, through time series run charts, form the basis for reviewing the progress of improvement projects.

Delivery of the UK’s e-government vision requires considerable capital investment. Transformation of public services is expected to bring associated transaction economies through the increased use of lower-cost channels and process-redesign efficiencies. However, the cost of delivering an appropriate infrastructure will not be met through operating-cost reductions alone. The change program at Camden already receives significant funding from within the council’s resources. The Camden Connect team has been brought into the base revenue budget at a cost of £0.5 million per annum. In addition, a capital program now totalling in excess of £3 million has been established to support e-government initiatives. This is indicative of the support for change at the highest levels of the organization. But, again, the level of investment required cannot be met in entirety from internal sources.

An e-forms project in Liverpool has successfully web-enabled 12 of the organization’s most widely used internal forms and has streamlined associated processes. One of the more successful quick wins for this project involved miscellaneous expenses paid to staff by bank transfer. Previously, staff were required to complete paper-based forms, which
would follow a procedure of several authorizations before submission to the business unit for payment. Under the new e-forms arrangements, staff are asked to complete a form giving bank details. If a member of staff wishes to claim expenses, the online form is completed and submitted to the manager for authorization, which is achieved by the manager forwarding the e-form from their mailbox. The form is then processed by the business unit and paid straight into the individual’s bank account, normally within three working days. This has helped the process to be automated, reducing the need for double handling, and consequently has sped up the whole process and reduced the need for paper-based forms and records.

The council’s intranet is a valuable tool to which staff have access. It displays all the latest news, job vacancies, policies, etc. It provides an additional channel to communicate information to staff, for example, via message of the day, which automatically appears when staff log on to a PC, updating staff about many issues including key ICT and legal issues. Liver-pool’s rooms online project has provided staff with the ability to reserve meeting rooms in municipal buildings online using the intranet. It is possible to select from a wide range of accommodation with facilities to suit requirements, including equipment and catering.

Social workers, health staff and schools use C-NET, a web service developed for and by children in care, to work more effectively together. It is hoped to provide increased support to children, parents and carers and is another example of how Liverpool is leading the way in using new technology to improve services. C-NET will also be accessed through TV set top boxes and WAP phones, while members of the public without computers will be able to log on to the site through the network of one-stop shops which are currently being rolled out across the city.

For Camden, ICT enables further efficiency gains through the opportunity it offers to achieve a more satisfactory work-life balance. Many of the Virtual Town Hall’s staff work flexibly in both hours and location of duty. Effectively employed ICT enables more staff to adopt full or part-time teleworking and to deliver more services while mobile in the community. These possibilities will dramatically reduce the need for expensive office space.

**Technology infrastructure**

The following technology infrastructure projects are of interest because of their innovative nature:

- the 12,000 smart cards currently in circulation in schools in the northeast of England, which are being used to record attendance as part of the school registration process
- Cornwall’s smartcards, which went live on 1 April 2002 and are used for bus payment, car parking payment, as library cards and in schools
- Suffolk’s digital television based services, which will include information on anything from the opening times of leisure centres to child-care availability
- Somerset County Council’s partnership with the police and five district councils providing digital television based information on local services available in each postcode area
- Leeds City Council’s web-based electronic tendering system, which allows suppliers to apply for council contracts electronically
• Newham’s electronic marketplace covering stationery, IT products and protective clothing
• Brent’s customer relationship management system, which will improve customer service by storing all phone, email and fax communications; Brent’s customers will, for example, be able to report abandoned vehicles in their streets electronically and view progress on their removal
• the West Sussex consortium’s establishment of secure networks between county and district councils to provide joined-up customer service
• Surrey’s central website allowing the County Council, District Councils, local Police, Ambulance Services, Health Authority and the Army to rapidly share information about major incidents or emergencies, such as flooding
• Bromley’s solution for sharing information between social services, health, housing and benefits across Bromley, Bexley and Greenwich
• Wolverhampton’s streamlining of technology to link the various agencies which support its bereavement centre
• Liverpool, Kingston upon Hull and Rotherham developing electronic licences and permissions and opening up all access channels to customers around a single point of contact
• The National Land Information Service, which provides electronic property search facilities to solicitors
• Liverpool’s local land and property gazetteer. The gazetteer will be used to support the city council’s e-government agenda and in particular its customer relationship management system. In effect, the authority will have access to two key databases: a people database and a property database. It is expected that implementation will be completed by the first quarter of 2003.

The Government Gateway is a major national technology infrastructure project designed to sit between web access points, such as local authority websites, the UK Online and other specialist portals, and back-office applications. Its aim is to provide secure, authenticated access, to accurately route transaction requests from users to the back office and the response from the back office to the user. Customers will be able to access services for which they have enrolled from any web access point that has been configured to work with the Gateway. The Gateway will also be used to enable joining-up information from multiple agencies to a single access point. Councils will be able to transact electronically with other councils, departments or agencies, or any other entity with a Gateway connection, and hence provide seamless, one-stop service to customers.

The Gateway has five functions:

• authentication (from username and password to strong digital certificate)
• registration and enrolment—creating an account, and selecting which services to use
• payments (into councils and from councils)
• secure mail
• secure transaction routing (point-to-point).

The benefits of using the Gateway derive from these functions being managed, operated and supported centrally. For example, it is because a customer’s registration and enrolment details are held centrally that services can be accessed from any Gateway-configured point. A single, centrally managed authentication per session means that users
can access services from multiple agencies easily, without having to authenticate themselves to each service provider individually. The logon process for the Gateway authenticates the user for the services for which they have enrolled, meaning that the user is presented with only those services they are authorized to use. Individual councils will be responsible for choosing which services they wish to make available via the Gateway. Councils will also be responsible for maintaining the known facts against which users will be authenticated when enrolling for a service. The known facts are stored centrally, at the Gateway hub.

In deciding which service to make available via the Government Gateway, councils will select those services that require some form of authentication. This means that those transactions or parts of transactions that require authentication at level 1, 2 or 3, but not those at level 0 will be routed via the Gateway. Services designated ‘level 0’ are likely to be of the ‘information provision’ type and councils will provide these services directly rather than via the Gateway.

- Level 0 Informal transactions
- Level 1 Personal transactions
- Level 2 Transactions with financial or statutory consequences
- Level 3 Transactions with substantial financial, statutory or safety consequences.

(Levels 2 and 3 require the security offered by authentication using a digital certificate—specifically non-repudiation—as opposed to simply username and password at Level 1. Services/transactions classified at Level 0 do not require authentication.)

The Office of the e-Envoy’s Gateway team has worked on a pilot project to deliver an online ‘View Council Tax’ service to Sunderland and Sedgemoor councils. The plan is for the Gateway to be used to authenticate citizens wishing to use the service by checking ‘Known Facts’ about the user (e.g. council tax account number, address, name), which are stored at the Gateway, with an identical set held at the local authority. The pilot has yet to deliver a working system. Meanwhile, there is an urgent need to develop plans to increase the number of services available through the Gateway if councils are to meet the Government’s 2005 target.

Unfortunately, the Gateway has been dogged by delays, technical problems, cost overruns and a failure to engage public service organizations in the centrally managed project. Some civil rights organizations have also questioned the constitutional legitimacy of a single, centralized approach to authentication. As a result, many councils are adopting their own user-identification mechanisms for low-level authentication. This leaves unresolved the issue of securely transferring data between organizations, for example, between social care and health.

Despite all this activity, the Government Gateway remains unproven. It is no surprise, therefore, that some councils are developing their own approaches. These include the following:

- Southampton issuing ‘home made’ digital certificates that are valid for services within authority boundaries. Southampton took this decision for speed and cost.
- Tameside planning to store strong digital certificates in the authority on behalf of customers, enabling remote and mobile authentication.

These are not the only examples of work underway in UK councils. Other examples can be found at Bracknell Forest, Cornwall and the North East Regional Smartcard...
Consortium. Cornwall has piloted a citizen smart card, known as the Cornish Key. The pilot delivered 50,000 smart cards to Cornish citizens, initially for use in libraries, car parks, on the buses and in a secondary school.

Developing the technology infrastructure to support multiple channels of access is an issue that is being addressed by a growing number of UK councils (FITLOG 2000). Hertfordshire recognized that people made contact with the council through a number of channels and that the critical element in developing a consistent response across these channels was a common technological platform providing access to a single source of information. The county therefore set out to design and build a database capable of holding the answers to all of the questions it might be asked and, more importantly, to begin to change the way the authority managed its information.

A small number of councils across the UK have been piloting delivering services through digital TV. Suffolk councils are developing a TV-based query service so that people can report a problem or ask for help at the click of a button from their sofa. They are also providing easy access to information; anything from swimming pool times to childcare contacts will be just a touch away. A key objective is to reach many more people than through PC-based services. The second phase of the digital TV roll-out will deliver transactional services so that local citizens can pay their council tax, and book theatre tickets and leisure facilities using their credit cards. Paying for local services will not be introduced until councils are convinced the technology is sufficiently secure. People across Suffolk have been consulted to test their attitudes towards electronic services and their views are being taken into account as new digital TV-based services are being introduced.

The main appeal of digital TV is that it is seen as having potential for crossing the digital divide and ensuring that electronic services reach the maximum number of people. As well as digital TV, Suffolk is launching web-enabled kiosks that will let people plan journeys or even search online for job opportunities.

In partnership with the police and five district councils, Somerset County Council is also launching a digital TV-based initiative. Council services will be presented on the basis of a postcode search, so that a citizen can quickly establish what is available in their local area without having to negotiate their way through different councils. Both Somerset and Suffolk are linking their websites to their digital TV channels, which means making sure the content and presentation fits the new formats. A number of new services are under consideration, such as informing people of their local Neighbourhood Watch contacts to help eradicate crime. Ultimately people will be able to use digital TV services to report stolen or dumped cars and to find information about the fire service and local schools. They may eventually be able to make housing repair requests and report faults through their TV.

Liverpool is typical of many UK councils, with all of the council’s libraries opening seven days per week, offering free Internet and email access, and street-based kiosk information services being introduced. Liverpool has the largest local government call centre in the UK, with over 200 seats taking around 30,000 calls per week and growing. The Liverpool Direct call centre has operated 24 hours a day and seven days a week since December 2001. A wide range of information and advice can be provided, and payments for Liverpool council services can be made over the telephone. The vision for a 500-seat call centre offering first-point-of-contact telephone resolution and an expansion program
is well underway to deliver 80 per cent of the city council’s telephony. As a joint venture company, Liverpool Direct will also have the capability to deliver third-party business.

In recent local elections, Liverpool took part in the e-democracy pilots along with Sheffield City Council. Under this pilot, Liverpool Direct call centre provided the customer contact point to enable voting by phone and also provided information and advice relating to a range of enquiries about the e-democracy pilot from citizens. In addition, it provided the customer contact for the Sheffield pilot.

A network of one-stop shops has been implemented in areas around the city in order to provide services directly at the heart of the local communities. As part of Liverpool’s social inclusion agenda, a translation service has been introduced in each of the shops. This has allowed citizens to communicate freely with advisors, request services and gather information on services, benefits and education, etc. Six one-stop shops have been rolled out around the city with a further six in development in the next two years.

The role of business in the local economy is important to the well-being of communities. In order to encourage the investment of business in the city and its people, Liverpool has launched the Liverpool Business Centre. The centre provides a one-stop shop for business, providing support, information and advice to new businesses. It also aims to attract inward investment and provide ongoing support to existing businesses. The centre’s online business directory is an extensive database of businesses in the city.

Customer-focus centres support the one-stop shops and provide joined-up working for delivery of council services. Staff who undertake the processing and fieldwork functions of council services from across portfolios have been consolidated in the customer-focus centres, enabling Liverpool to provide a more joined-up approach to the customer. In developing the customer-focus centres the intention is to upgrade the office environment for the staff and to encourage tele and mobile working, hot desking and use of intelligent office technology.

Liverpool launched an ICT bus in May 2002 to deliver ICT taster sessions across the city. The bus has full Internet access through wireless connectivity. The idea behind the project is to provide access to IT systems and the Internet and wherever access to services may be deemed difficult, or where there are large numbers of Liverpool residents. The bus is visiting places such as shopping centres, residential homes, schools and institutions.

A fundamental part of Liverpool’s change agenda is the development of a robust ICT platform, one that will support Liverpool’s aspirations, drive costs down and help deliver the concept of intelligently led local government. Liverpool has implemented an e-business suite, which is modelled around a single database and full application integration. This technology is replacing all of the council’s previously existing 230 legacy applications and 500 databases. In this model all customer contact is channelled through a customer relation management (CRM) system. Processes, and in particular customer contact, have been re-engineered to radically improve customer contact with the council. Particular gains have been made in the use of customer contact as a rich source of intelligence and actionable knowledge to improve and develop services.

The CRM project has developed and is developing ways to improve customer contact by improving both the reach (i.e. availability, ease of access, location) and richness (i.e. quality, resolution, fulfilment) of customer contact. Customers no longer have to provide information on more than one occasion as records can be updated or created at first
contact. Archived records will then show the citizens’ request details from previous visits, which will work towards achieving a ‘360 degree’ view of the customer. Staff from one-stop shops or Liverpool Direct will be able to access the same customer information, thereby enabling joined-up services. The generation of the request can be input from any of these locations, and the foundations have been laid to handle Internet service requests.

Lewisham’s AccessPoint one-stop service brings together over 40 services into one central location. On average 12,000 visitors attend per month to access services including council tax, housing benefits, education benefits and awards, blue badges, bus passes, skip licences and Inland Revenue Services. The council’s corporate contact centre CallPoint receives over 1.5 million calls a year. This multi-service centre responds to enquiries including revenues and benefits; environmental services like refuse collection, street cleansing, road maintenance, parks and abandoned vehicles, blue badges and skips and scaffolding licences. Longer weekday hours and weekend opening are available to customers using AccessPoint and CallPoint. A 24-hour payment line exists for rent, council tax and business rate payments.

**E-skilling**

There are new skills that will be needed across the workforce and within the community as e-government is implemented. There are also skills required to underpin the process of change.

Liverpool’s Education and Lifelong Learning Portfolio is working to ensure all citizens are well educated, to improve the quality of education for people of all ages and to help schools raise attainment. Each teacher and pupil in Liverpool has been given an IP address. All Liverpool libraries are now open seven days per week offering free Internet and email access. There are three city learning centres based at community schools around the city, which provide citizens with access to ICT. The three city learning centres in Liverpool are a key element of the Excellence in Cities initiative and have a major impact on learning in city schools by providing a focus for the very best in education for young people. They provide local facilities, which are improving education standards and skill levels, so promoting local facilities and enabling the social inclusion agenda. They are linked into the community grids for learning and give students low-cost online access and central learning resources, from home, from libraries and from other public access points. The intention of these centres is to improve access to, and use by pupils and adults of, the latest technology. They will also assist the improvement of attainment levels through use of that technology to help reduce truancy figures and improve employment prospects, acting as test beds for innovation and new ways of teaching and learning.

In a joint initiative with Speke City Learning Centre and the Speke/Garston Education Action Zones, the centre has been equipped with a fixed interactive whiteboard, as well as teaching resources, and is also developing a fully mobile network, with 30 laptops and a server, which will travel around partner schools in the south Liverpool area as well as being used at the centre.

In Tameside, there is a commitment that all citizens of Tameside who want to work should be qualified to the European Computer Driving Licence (ECDL) standard. As a
part of this initiative a junior version of this qualification is being implemented in
primary schools. Additional funding has been secured to develop the Tameside passport
to learning, an Internet-based individual portal that will provide a managed learning
environment to take people from basic skills through to further and higher education.
Tameside Council’s own workforce of 5,000 staff, the great majority of whom also live
in the borough, is being enrolled for ECDL. Other schemes that have developed from
these initiatives include:

• a technicians’ training scheme with Tameside Enterprises to develop more ICT
  specialists in the community
• ICT training schemes for Help the Aged, local Indian community centres and two local
  businesses

Involvement and participation in the processes of change across the whole of local
government will offer the best chances for everyone, in every community, to gain the
most from the transformation. The more ideas there are, the more likely it is that the best
ones will be available and useable across more organizations. One of the strengths of
local government is its diversity. Another of its strengths is its non-competitive,
collaborative environment.

Lewisham’s people management strategy recognizes the role and involvement of its
staff as the key to the development of integrated and accessible services for local people.
A Front Line Academy (FLA) has been created as a forum of communication and support
for front-line staff. Around 190 staff have attended Customer Champion workshops,
which provide an opportunity for staff to examine the changes impacting across the
council and to share experience and best practice, empowering staff to resolve customer
enquiries. These staff have been integral to supporting the cultural change necessary to
deliver excellent customer-focused services. A regular newsletter is circulated to around
1,500 staff, which highlights change issues affecting front-line staff, publicizing other
FLA activities, as well as learning and development opportunities. Service improvement
workshops between front-line and back-office staff, and suggestions from staff, have
resulted in positive service improvements being implemented, for example, separate
queuing systems to reduce waiting times for customers with disabilities, and lower desks
to aid customers who are unable to stand easily.

A series of management ‘road shows’ in Liverpool has helped communicate the
message of change to middle management. In addition, the market research organization,
MORI, was commissioned to conduct staff surveys. In Camden, consultations included
discussion workshops, public meetings and questionnaires. This exercise uncovered
considerable enthusiasm for the plans, but also significant issues. The latter included:
‘how to address the “digital divide” among borough residents; how to ensure that existing
language barriers are tackled; how to find ways of creating “social capital” through face-
to-face contact at the proposed community access points; and how to develop
opportunities for services that are innovative and also integrated with mainstream
services and “area-based initiatives’.’ Lewisham’s consultation strategy includes the use
of a wide range of methods and techniques to ensure that integrated and accessible
services are designed to meet customer needs and, importantly, to track satisfaction with
services.
Simple ways of re-engaging with people may prove to be the most effective in the short term. In West Lothian, the council is using electronic records of past library usage to contact ‘lost borrowers’ to see if they can regain their interest. The message is simple. They advise people of recent book acquisitions that have similar subjects, or the same authors, as books the person borrowed while they were active users of the library service. They invite the lost borrower to return to use the service. They have had some success in regaining interest. More importantly, they have had some success in re-engaging those people in a dialogue with the council.

It is also being recognized that councils must make maximum use of every contact they have with a citizen or community group. Technology offers an improved ability to reach and consult with citizens, but there is a limit to citizens’ tolerance and enthusiasm for being consulted. In Welland and Torfaen this fact is recognized, and attempts are being made to make maximum use of every contact and to re-use results wherever they have a continued relevance.

As far as publicity is concerned, councils are introducing more targeted approaches. The East Riding of Yorkshire markets its SaySomething website to young people in the area. The council’s research officer explains:

We realized after the project had been running for a while that the keywords were wrong. Young people don’t surf the web looking for words like questionnaire or consultation. Even the project name SaySomething didn’t help people find us by accident. You need to think in the language of the street to be really accessible.

The Better Connected 2003? survey (Socitm 2003b) found that, although the responsiveness of councils to email contact had increased, there remains room for improvement, particularly as expectations of electronic communications are widely considered to be more immediate:

• 78 per cent of those who received an email responded within ten days compared with 60 per cent in 2001
• 67 per cent of those who received an email responded within three days compared with 53 per cent in 2001.

Lewisham’s consultation strategy includes the use of a wide range of methods and techniques to ensure that integrated and accessible services are designed to meet customer needs and, importantly, to track satisfaction with services. Lewisham uses customer satisfaction as a key outcome measure of the success of its AccessPoint and CallPoint services. Results from a range of consultation techniques, including weekly phone and exit surveys, annual surveys, focus group meetings and visits to community groups, show continuously improved performance and satisfaction with services across a number of local performance indicators developed by the council. Regular mystery shopping exercises are carried out. A mystery shopping exercise was carried out by a disability task group, which highlighted issues regarding accessibility. Lewisham’s corporate objectives have since been changed to reflect the need to improve accessibility to services for their disabled customers.
The diverse range of different community groups living within Lewisham has encouraged the council to identify their needs in relation to accessible services in a variety of ways:

- employment of two signers to provide services for AccessPoint customers with hearing impairments
- information signs in the five most common community languages to guide customers through AccessPoint services
- CallPoint offers voice forms in the four most common community languages: Turkish, Somali, Bangladeshi and Vietnamese
- availability of large-print forms for partially sighted people and Braille versions for people with severe visual impairment on request.

There are more general ways of ensuring that local needs are considered. In North Norfolk the particular needs are those of retired people, many with good IT skills but many without. North Norfolk’s access strategy is to build partnerships that maximize the geographical coverage of access points. They see that marketing the new services through a non-threatening environment such as post offices, where these are still available, is likely to be more successful than a ‘council officer in a suit’ trying to introduce new channels to people. They have also recognized that there is very little likelihood of broadband Internet connectivity becoming available to the public in the near future. They have taken this into account in developing their website. It is very light on graphics, ensuring that the pages will actually load when local people access them.

Of course, it is essential to recognize that ‘local communities’ are not a single homogeneous entity, but a whole series of communities of interest and place. Success depends on identifying these various communities and producing content that is relevant to each of them. In areas where the local authority has taken the lead in facilitating local content production by local people, as in Cornwall, Camden and Carrick, knowledge about the local community has enabled changes within the council, and greater understanding of the council has improved relationships with the community.

The vision for Tameside was developed through a series of workshops and detailed socioeconomic research, and involved senior members and managers. It set the council’s vision for its community and its role in its delivery. It recognized the council’s primary community leadership role to ‘maximize the well-being of people in the borough’, six years before this became a duty on all councils. It set out a number of interrelated policy objectives around issues like the local economy and lifelong learning, which were shared with partners and, at that time, formed the basis of partnership development in the borough. These objectives have been refined through systematic reviews, large consultation events, development of the community strategy and an ongoing analysis of emerging national and regional priorities.

**Partnership and collaboration**

Councils such as Sunderland and Tameside are working through so-called ‘Local Strategic Partnerships’ with other local stakeholders to develop the range of services, including e-services that their communities need. For some of the largest councils, such as Lincolnshire, Liverpool, Kent and Sheffield, strategic partnerships have been
introduced with a vision to transform the authority’s performance in conjunction with private sector knowledge and expertise, using ICT as a key instrument in the changes required. In these strategic partnerships, the supplier provides expertise and know-how to transform existing services and to develop new services. There is evidence, too, of new entrants coming on to the local e-government ‘map’. In particular, conditions in some of the new unitary councils appear to foster innovation in local e-government initiatives. New leadership, coupled with a desire to raise the profile of the authority by fostering partnerships with local technology companies and other organizations is apparent in councils such as Bracknell Forest, Windsor and Maidenhead.

Barnsley takes a ‘business case’ approach to a new level in a strategic partnership with the private sector. Using ICT as an element in an integrated philosophy and founded on the concept of managing information across the whole council, a framework agreement sets out the arrangements for undertaking transformational projects (which are not previously determined in the agreement). Business proposals can be made by either of the partners and are worked up jointly. Staff from the private sector partner are located within the council. This arrangement secures genuine partnership working across the whole of the council’s change agenda.

Tameside recognizes the need for a high level of co-operation with partners and collaboration with regional and national strategies to successfully attract inward investment and to be effective in their support for business, education and training. An ‘e-team’ of partners has been established which meets regularly to oversee and develop the strategy as well as to progress the related action plans. It is based on existing collaborations and its membership is open. Project officers have been appointed to support the team. Business and voluntary organizations are being invited to sign up to e-Tameside, so that there is an active membership for consultation, for awareness raising and for sharing best practice.

Tameside, Kirklees and Waltham Forest are a unique combination of partners at different stages of e-government development. They participated in a Pathfinder project to deliver a proven, transportable and transactional local authority website that can be either implemented in its entirety or as selected modules that can easily be tailored and badged to meet local requirements. A mentoring and secondment program was developed for use by other councils. Tameside is developing some of its ‘flagship’ projects to build upon the Pathfinder partnership and to extend overall value to the wider local government community:

• Digital television—development work to provide access to the website via digital television.
• ICT access points—outreach facilities for hard-to-reach groups, such as older people, single parents and ethnic minorities, based on an existing implementation program and linking with the program for establishing ICT learning centres in libraries.
• The promotion of the European Computer Driving Licence (ECDL) throughout the partnership as an essential qualification for those in the community seeking work to those already in work including local authority staff. This would also include the development of the junior ECDL in schools to enhance the total skills base within the community and to promulgate this further through partners.
• Further development of the borough-wide broadband network, which is being put in place to provide high-speed links between ICT access points, schools, colleges, public offices and higher education.
• The expansion of the ICT technician training and employment scheme due to start in April 2001. This has been established to address the local skills deficit. It currently provides a rolling program of training and job placements in cohorts of twelve, for both young and older people. The intention would be to replicate this throughout the partnership.
• Smart cards—the development of the Tameside passport to services, learning and health to take advantage of smart card technology.

Tameside recognizes the importance of comparison and learning from others to help drive improvement. The council leads and participates in a wide range of national, regional and bespoke benchmarking clubs. In many instances, where no clubs existed the council has created them. The council has also been involved in joint work with Warwick Business School, the Institute of Local Government Studies (University of Birmingham) and the Kings Fund, in developing new ways of working, as well as forward-looking networks such as the New Local Government Network and British Telecom’s Public Policy Forum.

Lewisham is working through a strategic partnership with the Inland Revenue and Benefits Agency that has enabled the council to develop a wider range of services from a single location. The Inland Revenue deal with and resolve issues such as ‘Pay as You Earn’, Self Assessment and Minimum Wage, and the Benefits Agency offers a one-stop advice and information solution to customers. Lewisham is the lead authority in the Life Events Access Project (LEAP, 2002). LEAP is a partnership of five councils between Lewisham and the London Boroughs of Ealing, Lambeth, Camden and Newcastle City Council. The main objective of LEAP is to map selected customer-facing council services with the intention of clustering these around life events such as:

• having a baby
• starting, changing school or leaving school
• moving home
• changing employment status or starting a business.

The LEAP standards and process maps are available nationally to all other councils.

Lewisham is also part of two successful consortia that have received national project funding. The first is LAWS (Local Authority Web Sites). The project aims include:

• development of an architecture that will allow for data to be entered, accessed and displayed across multiple client applications
• development of content management tools that will permit devolution of content entry throughout the organization
• development of content that is accessible to all, including blind and partially sighted, the elderly and non-English speakers.

The second partnership, Base.gov, involves Lewisham, Knowsley, Leeds and West Sussex. Base.gov aims to provide an entry level to e-government solution by using a range of affordable technology and systems, and to implement technical standards in
local government, for example electronic forms, CRM and smart cards. The solutions are developed within each council and use a range of technologies, which are packaged together to form a more holistic package.

The development of mutually beneficial partnerships is essential to the delivery of change and investment on the scale required by Camden. Camden’s solution to this predicament was to develop a partnership with the private sector. A public-private partnership (PPP) model, as opposed to outsourcing, was the preferred solution. However, Camden pulled out of negotiations with its preferred partner in the final stages of the procurement process. The basic funding model, intended to be cost neutral over the longer term, was that efficiency savings would fund the establishment of the new front office or Virtual Town Hall, and the ICT infrastructure needed to deliver it. It would also be funded by the release of costly accommodation as a result of increased flexible working and the movement of both front and back office council staff out of central buildings and into a chain of community access points across the borough.

Through its neighbourhood renewal strategy, the government has provided the mechanism for each region to establish a local strategic partnership. In Liverpool, Liverpool’s chief executive chairs the local strategic partnership. The partnership has delivered a community network infrastructure to support different community services and community chat rooms which take account of customer feedback and consequently play a part in the decision-making process. Alongside the local strategic partnership, a critical component of Liverpool’s ambitious change agenda sought to establish an innovative strategic partnership with the private sector. On 13 July 2001 Liverpool set up a joint venture partnership, Liverpool Direct Limited (LDL), with British Telecommunications plc (BT). This partnership has resulted in an 11-year contract to the value of £300 million to provide customer services, and ICT, revenues, benefits, human resources and payroll services. The partnership provides a £60 million investment package for the improvement of services. The aim for LDL is to lead and transform ICT within the council to underpin the delivery of customer service excellence combined with greater levels of efficiency and effectiveness.

In the case of Welland Partnership, the partnership was originally conceived by a group of five chief executives. In some partnerships, it would have been difficult to survive the change of even one of these people who had a personal involvement in bringing the partnership into being. The Welland Partnership has already survived the departure from the five councils of three of the original five chief executives. The momentum is now such that it is sustained by interest at every level of management across all five councils. People have seen the benefits. They have built up the trust that enables them to see the benefits from being in the partnership even when the work in progress is not of immediate benefit to their individual council. The whole has become truly more beneficial than the sum of the parts.

**E-democracy**

Recent research by IPPR (2003) and IDeA et al. (2003) suggest that local e-democracy is still in its infancy. The most common area of local e-democracy activity found is aimed at strengthening the public’s understanding of the democratic processes of the council, everything from online provision of searchable databases of agendas and minutes in
Chelmsford to web casting of council meetings in Camden. Some councils offer local people the chance to voice opinions online during live web casts of council meetings, or enable citizens to find out what happened, such as whether their ward councillor was present and how they voted. Some ward councillors also run their own individual websites, designed for or by them. Some are based on the model of Councillor.info, a pilot project by the LGA (Local Government Association). Many councils use the Internet for consultations on a fairly regular basis, such as with their local citizens’ panels, and some councils carry out full public consultations on local issues, including local planning decisions. New technology has also offered solutions to particular situations, such as connecting parish councils to the district and county in South Norfolk and allowing remote citizens to have equal access to services, as in Argyll and Bute. Both of these initiatives have allowed citizens greater access to information and more opportunities to have their say on issues.

Previous reviews of local e-government have shown that it is crucial to understand the preferences of the citizens that councils are trying to reach. In terms of supporting participatory democracy, councils recognize that young people are the most likely segment to be interested in using new technology and new media. New media, including SMS text messaging, interactive digital TV and instant opinion polls, are being deployed in Lancashire, in some cases specifically with young people, as in Cheshire and St Albans.

The Wiltshire and Swindon Pathfinder project is encouraging the development and linkage of community-based websites. In North Norfolk, Carrick and the East Riding of Yorkshire, work is being done to join up with communities and use the technology to provide people with a stronger and clearer voice. In each of these cases, the councils and their partners are learning new things about the concerns of their local communities that were not clearly communicated through traditional channels.

Liverpool’s drive to modernize the democratic decision-making process is demonstrated by the establishment of area committees. This places the democratic process at the heart of community, encouraging involvement in decision-making and enabling active involvement by residents and businesses. Liverpool has appointed 11 area committees to facilitate the participation by local residents in decision-making and to develop a partnership working with other public service providers. Effective complaints handling and feedback schemes are essential tools in order to capture the views of customers and citizens. With schemes like Have Your Say, customers and citizens have a chance to comment, compliment or complain about council services.

Recognizing that progress is at an early stage, the £4 million Local e-Democracy national project has been established to examine the potential of new technologies to support or enhance aspects of local democracy. The starting point for the program is democracy rather than technology. While the program is concerned with how technologies help, solutions are not expected to have to be especially ‘hi-tech’.

Pratchett (IDeA et al. 2003) maintains that democracy faces a number of contemporary challenges in the UK. Alongside the concern with falling turnout at elections there are wider challenges that councils and their partners need to address. These include:

- Political management—introduction of directly elected mayors, indirectly appointed cabinets or streamlined committee systems.
• Representation and scrutiny—the role of elected representatives has often been overlooked in the rush to implement executive management of local services.
• Partnership and governance—local council’s relationship with a range of partners raises significant challenges of accountability and co-ordination of policy.
• Community leadership—contemporary discussions tend to pose democratic participation as being a benign form of citizen consultation and engagement.
• Social inclusion and hard-to-reach groups—many groups such as young people, those from ethnic minorities and people from lower socio-economic backgrounds remain difficult to involve in local politics.
• Neighbourhoods and communities—within a local authority area there are normally a wide range of different communities with different needs and propensities to participate.
• New democratic institutions—local democracy is operating in a changing democratic climate in which other organizations are claiming democratic legitimacy.
• New democratic practices—participation and consultation initiatives are now deemed complementary to the practices of representative democracy.

These challenges pose enormous opportunities for e-democracy and for linking citizens as both consumers of services and participants in local democracy. Projects within the local e-democracy national project, therefore, are being designed to address a number of different aspects of contemporary democracy, including:

• to enhance or deepen some aspect of democratic practice
• to address the democratization of particular policy areas or issues
• to address the democratic deficit by focusing upon particular groups or stakeholders in the policy process.

On a wider front, the government has consulted on an e-democracy policy that could have significant impact on the way central and local government consults and involves citizens in policy and decision-making (Cabinet Office 2002). The policy outlines two interdependent tracks, e-voting and e-participation. The e-participation track describes ways in which ICT could be used to enhance opportunities for government at all levels to seek the views, knowledge and experience of people in order to improve policy and decision-making. E-voting is intended to provide more convenient ways of taking part in both local and national elections. A series of pilots has been undertaken in local elections with mixed results, particularly in terms of participation and turnout (ODPM 2003c).

Change in e-government as constant challenge

The effective management of joined-up services and outcomes presents councils with even greater challenges. There is a clear need for some people to stop doing some things, and to recognize that other agencies and other people are better placed to manage those outcomes. There will be a need to manage new things in new ways, with different types of controls and performance measures. More new skills will be needed. The culture that has an appetite for change expects these sorts of changes, and adjusts as needed to allow the changes to be successful. Across local government, people need to develop these new skills and new ways of working, and to get on with adapting to the new millennium.
A recent report, *Message beyond the Medium* (Audit Commission 2002) suggests that the following barriers exist to sustaining delivery of local e-government. These barriers are:

- lack of and fragmentation of funding (cited by 80 per cent of the 354 councils surveyed)
- lack of ICT skills and knowledge among staff (30 per cent)
- reluctance to change (23 per cent)
- inadequate resources—staff/time (17 per cent)
- too many overlapping initiatives (15 per cent)
- lack of elected member interest (13 per cent)
- low take-up among service users (13 per cent)
- lack of interest from other senior staff (11 per cent)
- difficulties working with partner organizations (9 per cent)
- lack of public access to technology (8 per cent).

In conclusion, our most recent research (IDeA and Socitm, 2003) suggests that there are three broad challenges that face councils in implementing e-government and delivering real value to citizens in England and, more widely, across the UK. These are:

1. mainstreaming e-government
2. building capacity within and without
3. reaping the rewards.

Mainstreaming e-government comprises:

- bridging the gap between innovations in service areas and corporate visions, plans and resource allocation
- overcoming short-term, project-based funding to sustain progress and support dissemination of learning and roll out of products
- finding ways of sharing service-based knowledge horizontally and vertically within councils and more widely across the sector.

Many of the innovations featured by IDeA-Socitm are changing people’s lives for the better and enabling improved business performance locally. At the same time, the evidence shows that these innovations often operate independently of councils’ plans for their localities, for improvement or for e-government. Local e-government projects have often come about largely because of the drive of professionals to use all means possible to improve services. Nevertheless, for many councils, the focus of their e-government plans has been around developing their corporate infrastructure—the building blocks of e-government—rather than on improving core services.

The recent Audit Commission report, *Patterns for Improvement* (2003), analyses the first set of Comprehensive Performance Assessment (CPA) results and offers advice to councils trying to enhance their corporate effectiveness. It identifies that councils perform well when they have:

- political leadership that focuses on change and continuous improvement, and makes—and sticks to—tough decisions, even in politically sensitive areas
- strong community leadership based on a shared vision for delivering local priorities and joint strategies with partners
• clear frameworks for managing performance that support council priorities and link to planning and budget setting
• people-management strategies that harness staff energies and skills to deliver council objectives
• a robust approach to procurement, based on a well-developed mixed economy
• a good understanding of their local context and the diversity within local communities in order to identify and meet the needs of those communities.

The report goes on to advise councils that these corporate strengths directly influence patterns of performance at a service level. The same set of criteria can equally be applied to those councils aiming to enhance the effectiveness of their e-government program.

Integrating e-government innovations in service areas into mainstream plans is crucial. Many such innovations are subject to short-term, project-based funding, often in the form of government or EU grants. Without finding ways of recognizing and supporting these projects in corporate plans, councils run the risk of disenfranchising their citizens by allowing services which have raised expectations locally to stagnate. Equally, funding organizations need to consider the appropriateness of funding regimes that encourage silo-based applications from isolated service areas within councils.

In addition, the learning and benefits (expected or otherwise) which emerge as such projects unfold need to be captured and exploited by the organization as a whole, giving members and senior officers a corporate view of the impact of technology on services and outcomes for citizens. Viewing local government as a sector, steps need to be taken to spread the word of service-based innovation more widely. Many councils have disseminated knowledge and experience within the professional and service-based networks, but often they do not have the capacity and resources to share these innovations across a wider audience.

The capacity issues for smaller councils can be even more significant. They may be relying on the outcomes of national projects and regional and sub-regional partnerships, before proceeding with full implementation. The aim to conclude the national projects, supported through the Local Government Online program, within the next few months is challenging. The aim to ensure their adoption in all appropriate councils, across the whole of the country, by the end of 2005 will challenge the capacity of all sectors and all people concerned.

Building capacity within and without comprises:

• exploring a range of access channels and supporting ICT infrastructures to develop ‘a new public sphere’ for improved democratic participation and local governance
• councils taking a lead in guiding, encouraging and supporting community and voluntary groups to use ICT to take an active role in shaping new services and managing their communities’ futures
• developing a more ‘knowledge intensive’ public sector with the enthusiasm and skills for ICT, where service and ICT professionals, policy makers and councillors all recognize the strategic importance of leveraging technology.

Projects such as eastserve.com in Manchester demonstrate the potential for using new technology as a vehicle to revive a sense of citizenship and local responsibility. This project is part of a major regeneration effort, offering local people the chance to work together to develop skills and confidence, and to take an active role in shaping services
and managing their communities’ future. The development of community portals centred on 11 market towns in the Welland Partnership area is an attempt to provide focal points for participation that recognize natural communities rather than local authority boundaries. In Carrick, the council has invested heavily in the basic infrastructure to improve communication and networking between public and community groups. This network has already supported the development of Carrick’s community plan.

These projects represent the exploration by councils of a range of access channels and supporting ICT infrastructures to enable improved democratic participation and community engagement. Councils have the opportunity to lead in the creation of a new, online public sphere where citizens and communities can come together to share information and to discuss and debate local issues. It is too early, however, to be prescriptive about the shape of the infrastructure that needs to be developed. It is for central and local policy makers to encourage innovation, experimentation—and the sharing of experiences and learning.

Having said this, active steps need to be taken to unlock capacity from within the community and the voluntary sectors to enable local people to shape and deliver e-enabled services. This particularly applies to disadvantaged groups who tend to distrust government. In Northampton, the Alzheimer’s Society has played a key role in framing the authority’s service for people with dementia. In Sunderland, low employment aspirations in isolated estates are being combated through community-managed electronic village halls. Councils have a key role to play in guiding, nurturing and encouraging voluntary groups, seeking out and then devolving funding to community groups and businesses. It is only by tapping into people and groups with interest and commitment that councils can be confident of delivering the sustainable services which citizens want.

This poses challenges for the internal workings of councils. If councils are to lead in the development of information-rich communities in the localities they serve, they must become such organizations themselves, able to recruit and retain quality people. In many of the cases described in this chapter, we see examples of key professionals within individual councils acting as civic entrepreneurs, innovating on behalf of the citizens and communities they serve and exploiting the potential of ICT. There is a need for this role to be recognized and valued, and these people need to be given time to work ‘on the business’ as well as ‘in the business’, a key point from the report, Local E-government: Learning from the Best in New Zealand (IDeA and Socitm 2002b).

Councils must recognize the strategic value of the information they hold and the skills within their corporate ICT functions. There is a need to bring together these sets of skills and consider them at the strategic level in relation to community priorities. Making a Difference, a recent report (Socitm 2003c), presents evidence pointing to a correlation between overall council performance and the performance of the ICT function. The analysis suggests that a council with an ICT service that is above par will almost always achieve at least a fair CPA rating, if not a good or excellent one.

Reaping the rewards involves:

• capturing the stories and anecdotes, as well as the facts and figures, which illustrate the range of tangible benefits coming from e-government—including unexpected ones
• actively marketing new services and delivery channels
• understanding and managing citizens’ expectations of council performance by involving them in service development and standard setting

Since 2001, IDeA and Socitm have charted the progress that councils are making in terms of understanding and articulating, and then planning and implementing, local e-government. Councils have articulated their vision in different ways, and have initiated programs that tackle the change from a range of perspectives. There continue to be disparities in the speed of progress being made, but the analysis of the second round of IEG statements in England shows that councils’ progress towards 100 per cent of services being e-enabled by the end of 2005 is accelerating.

However, with time marching on towards the 2005 target and ICT spending within the public sector steadily increasing, the calls for e-government to demonstrate its value are becoming more widespread. There is also increasing recognition that the UK government’s delivery agenda depends most critically on the performance of local public service agencies and councils in particular.

Our research demonstrates that e-government can deliver tangible improvements in services and positive outcomes for citizens. However, it is clear that these outcomes may not be planned or easily measured, nor will they always be a direct result of the plans contained within IEG statements. If e-government is to be used to improve core services, then its success or failure must, in the main, be judged by the performance of the relevant service. However, traditional performance indicators do not always capture the flavour of the impact that service improvements are making, nor are they necessarily appropriate for new services. In Sunderland, the council has made a conscious effort to encourage its staff to capture comments, stories and anecdotes from the users of their electronic village halls. These, combined with more quantitative measures, should reveal the true impact of the service.

In aiming to extend the reach of services and to engage local people in shaping the services they require, councils cannot assume that there will be a rush to use them simply because they are there. Building take-up requires a range of measures appropriate to the service and the locality. In Manchester and Sunderland, the new community centres are not badged with council logos or branding and the promotion of the service to the community lies in the power of local word-of-mouth. In contrast, the strong branding of Liverpool Direct is part of the attempt to engender trust and confidence by presenting a new, confident image of a council tainted by past poor performance.

The majority of local e-government services are not online, self-service offerings. Nor do they need to be to have a positive impact on people’s lives. Evidence of this is found in Telford and Wrekin’s partnership project to improve the exchange and use of data between key agencies that provide services for children and families at risk, and in Derwentside’s broadband infrastructure support that enables locally delivered health services. When it comes to deploying a wide range of technologies across all service areas, the importance of mediated, face-to-face contact is often still paramount.

Marketing and face-to-face contact are also important in terms of understanding and managing the expectations of service users. Citizens can play a range of roles in respect of local government services—user, participant, contributor or intermediary—and their expectations of these services will vary with the particular role they are playing. Their satisfaction is not dependent entirely upon the quality of services they receive. Judgements of fairness, trust and accountability all play their part. Only by offering an
increased range of methods for people to access services and contribute to their development can councils rise to the challenge of meeting citizens’ complex needs and expectations.

However, councils must not be under any illusions that the business case for e-government lies in the improved handling of enquiries or in new methods of access to services. While developing the infrastructure for call centres and customer relationship management systems may have been the main focus of attention up to now, in most cases, this effort will only bring the level of service in line with citizens’ expectations. As such it is unlikely that this effort will be appreciated. Ultimately, the impact of e-government will be felt through councils and their partners working together to deliver new and better services that deliver outcomes important to the people in the locality they serve. The most important outcomes, and the ones that will prove sustainable, will be those that local people themselves suggest.

Notes
1 The author thanks Martin Greenwood and Mary Wintershausen (Society of IT Management) and Fred Baron and Matthew Wolstenholme (Improvement and Development Agency) who contributed to the material contained in this chapter.
2 http://www.idea-knowledge.gov.uk/.

Bibliography


The e-public administrative process in Japan

Masahiro Fujita, Takahiro Izawa and Hiroki Ishibashi

Introduction

E-Japan Strategies\(^1\) indicate the philosophy to change the Japanese industrial, social, and administrative structures through the e-Japan process. Thus the introduction of IT to the public administrative process, the theme of this chapter, not only addresses administrative reform including the improved efficiency and sophisticatedness, but also addresses the promotion of related industries, which is one of the characteristics of local e-government initiatives in Japan. Namely, in introducing and proliferating the various administrative information systems, economic vitalization triggered by the information-related equipment manufacturers and software vendors, among others, is expected. As a result, many local governments (prefectures and municipalities) and joint collaborations among municipalities are outsourcing system construction and processing, which is another characteristics of Japanese local e-government progress.

Though the municipalities are the public administration organs directly interfacing with the residents, the municipalities are navigated by the prefectural governments, which are navigated by the national government. This hierarchical structure is also applicable to the local e-government initiatives; the national government, Ministry of Public Management, Home Affairs, Post and Telecommunications (MPHPT), communicates e-policies to the prefectures, which in turn communicate them to the municipalities.

Local e-government initiatives in Japan follow the e-Japan Strategies. Under the powerful navigation and abundant financial support extended by the national government, the pioneering local governments serve as the “model” to proceed with the pilot project, which are expected to be followed by other local governments. Accordingly, the majority of the local governments which are not yet developing remarkable local e-government initiatives to date may be in the process of accepting the policies and measures suggested by the national government, duplicating the preceding cases.

The case studies were conducted for Hyogo Prefecture, which has typical e-prefecture initiatives; Mitaka City, Yokosuka City, Okayama City and Ikeda City, relatively pioneering e-municipalities; Hyogo E-Municipality Promotion Council and Hanshin
Wide Area (seven cities and one town), which have joint collaborative initiatives among the municipalities. The authors firmly believe that these local governments indeed portray the future of local e-government in Japan.

**E-government-initiatives by the national government**

The several initiatives launched by the national government contribute to lay the foundation of e-municipalities. The Ministry of Public Management, Home Affairs, Post and Telecommunications (MPHPT) provides the e-policies to the local governments, which are followed by the localities in their implementation. In November 2002 MPHPT established “The Program to Promote E-Government and Local E-Government” to disclose the image of the new administrative service by the local governments and the master schedule including the processes and milestones (for details see Eifert 2004). The program addresses (1) enhancing the integrated public administrative network and Resident Basic Register Network System (RBRNS), (2) establishing the organizational certification infrastructure and public personal authentication infrastructure, (3) establishing an e-application system and public service fee receipt system, (4) the electronic return of local taxes, (5) e-procurement, (6) a time-schedule to roll out e-voting.

The first step is to promote the infrastructure both in the central and the local governments:

- Each local government to build internal LAN and to furnish one PC to each public officer.
- Enhance Local Government WAN (LGWAN²) as the general administration network connecting the local governments.
- Enhance the Resident Basic Register Network System (RBRNS).³

The second step consists in MPHPT building the instruments to certify the authenticity of the person (both sending and receiving) via the Internet:

- Certify system of the public administrative offices (organizational authentication system).
- Offering an authentication service for the resident (public personal authentication service).

In the third step local governments are to promote the electronic window service, i.e. download administrative forms and accept electronic applications.

**Digitization menu by local e-government**

In turn, at a local level offering a service directly to residents, the municipalities provide the specific service to residents in a focused manner within geographically narrow scope while the prefectures supervise several municipalities under the jurisdiction in the wider scope. In proceeding with e-government at a local level, IT is tapped in the front office service—accepting residents’ requests—to the maximum extent without changing the
back office system—the internal processing system inherited from the past. In general, e-prefecture initiatives focused on the infrastructure to follow up the municipal telecommunication platform while the municipalities have many e-front-office service menus.

The resulting information system of local e-government as shown in Figure 7.1 is now being configured.

**General description and findings**

**Characteristics of the e-local public administrative process in Japan**

In order to follow the degree of progress in realizing the local e-government in Japan, the characteristics of the Japanese local administration paradigm are identified. First of all, the e-initiatives among the prefectures are similar. Reflecting the hierarchical structure ranging from the national, prefectural and municipal governments, the municipalities make the e-investment from the point of providing the public service directly to the residents. Thus the municipalities build and enhance the specific and concrete information system and applications, which naturally results in a wide array of policies. On the other hand, the prefectures are making
e-investment to improve the overall level of the wide area under their jurisdiction such as the enhancement of the information system within the jurisdictional territory. Accordingly, e-prefecture initiatives tend to be in common; such as “to enhance the information network under the prefectural jurisdiction” or “to co-ordinate the co-operation and alliance among the municipalities”.

Another characteristic is that the joint establishment and operation of the system prevails, especially among the municipalities. Japan has 47 prefectures and about 3,200 municipalities. As mentioned, the municipalities should directly serve the resident, which means a unique service fitting local features is required. Such unique service initiatives are currently implemented by only a small number of pioneering municipalities. The financial burden on the smaller municipalities to realize local e-government is still huge. It is especially difficult for towns and villages to build their own internal network (LAN) and information system. Considering this situation, the national government is guiding smaller municipalities by the joint establishment and operation of a system. In this context, the prefectural government is expected to serve as the coordinator in joint efforts. As a result, the prefecture and the municipalities are jointly proceeding with the pilot projects under the national initiative. The institutional organizations aiming at the joint development and operation among prefectures and municipalities are being established nationwide to conduct the joint development and pilot experiments of e-application, e-bidding and e-procurement.

**Agenda for the e-local public administrative process**

As outlined above, local e-government projects are progressing through pilot experiments with financial support from the national government, then the development and introduction of a general-purpose system based on the results of the pilot experiments followed by institutionalization of the joint initiatives. Local e-government initiatives in Japan are, on the other hand, facing the following important challenges.

First, local governments are suffering from the extremely tight financial situation. Local e-government requires huge investment, but the local governments currently do not have the financial capability to fulfill the investment requirements. Including the cases referred to in the following sections, only a small number of local governments are investing in local e-government by self-financing. The majority are building up the local information infrastructure with a national subsidy from central government. As the local projects subject to national subsidy are based on a uniform project scheme, the systems installed for the local governments in Japan are very similar. In order to achieve “e-investment fitting to local conditions and background”, which is essential for the municipalities whose main mission is to provide an administrative service close to the residents, securing their own financial source is an important issue on the agenda.

Second, local public administration is currently at a major turning point; their is a move to merging municipalities, which is actively promoted by the national government to improve the administration efficiency. This is another factor that delays the implementation of e-municipality. If municipalities introduce their own information system separately, they would go through system integration if merged. The municipalities facing a potential merger in the near feature are taking a wait-and-see approach because they are concerned that the system would have to be restructured upon
the merger, if it went ahead, even if they make major e-investment at this stage. The merging of municipalities will result in significant restructuring of the Japanese local public administration paradigm, which is largely affecting and delaying local e-government initiatives.

Third, the human resource required to promote local e-government initiatives is poor. In local e-government, in order to ensure the safety and reliability of the network and the system, a human resource equipped with the knowledge and technologies of advanced, high-level information security is needed. Such a human resource is in extremely short supply, especially among the municipalities. There is currently no integrated and systematic approach to training local government officers in IT, as flexible employment in line with IT progress is not possible under the current public staff hiring scheme. The existing officers learn the job process and skills mainly through on-the-job training. In local e-government initiatives which should be a platform for the coming sophisticated information society, the staff who maintain a safe and reliable information network are definitely insufficient.

Local e-government initiatives by government bodies at a local level

Prefectural and municipal government

In identifying the municipalities actively introducing a unique information system, the “e-city ranking survey” conducted by the Nihon Keizai Shimbun (or Japan Economic Daily Newspaper) in FY2002 is a good reference. During this survey, questionnaires were sent to all cities in Japan and each municipality was graded numerically according to various evaluation parameters. Among the parameters, use of the Internet in retrieving hospital information and minutes of the meetings and in reserving the public facility use were the important parameters in the grading.

In this survey, Mitaka City (Tokyo Prefecture) and Okayama City (Okayama) were no. 1 in the overall evaluation. Both cities are not only actively enhancing the infrastructure and providing information on the web but also developing e-initiatives unique to their own city. In Mitaka City, information systems are readily available for easy and convenient use by citizens, such as the library referral system and information on lifelong education on the web. In Okayama City, the urban planning information system using the geographical information system (GIS) is established. Other pioneering cases with positive results include Yokosuka City (Kanagawa) with an e-bidding system application, and Ichikawa City (Chiba) with a public facility reservation system application. The municipalities using the Internet very actively in providing information to citizens, besides those referred to above, are Sapporo City (Hokkaido), Nishinomiya City (Hyogo) and Kani City (Gifu), though this list is not exhaustive.

Joint collaboration

Currently, in Japan, nearly every prefecture organizes a prefectural council to promote joint municipal initiatives in realizing local e-government to study the development and rolling out scenario of potentially shared specific applications.
The fact that joint municipal initiatives are promoted at a prefectural level has something to do with the background that the integrated public administrative network (LGWAN) is, basically, institutionalized by the prefectural network operation center (NOC) unit.

Joint municipal initiatives are to reduce the human resource and financial burden as well as to establish an additional public service network for citizens tapping the LGWAN, the inter- and intra-network infrastructure for local public offices. Joint municipal initiatives are to proceed with package outsourcing of the information system related work of the municipalities. Gifu Prefecture, for example, is outsourcing the prefectural inter-and intra-office information system work to a private company, while the municipalities under its jurisdiction establish the incorporated foundation for the joint system development and operation.

Besides Gifu Prefecture, pioneering cases of joint municipal initiatives include “Osaka local e-government association” in Osaka Prefecture, “Hyogo local e-government association” in Hyogo Prefecture, and “Tokyo ward, city, town and village local e-government association” in Tokyo Prefecture.

Another approach emerging is that municipalities traditionally tied up with various projects to date are establishing a collaborative alliance in e-municipality efforts besides those of the promotion council or similar covering all the municipalities under the prefectural jurisdiction. As the alliance is not a prefecture-wide approach, it enables joint introduction of an information system well matched to the circumstances and realities of the region-wide area in an effective manner. The collaborative alliance between seven cities and one town in Hanshin Wide Area in the southern part of Hyogo Prefecture is one such case. In realizing area-wide local e-government initiatives, “Hanshin Wide Area Administrative Zone Council” serves as the program coordinating body providing the necessary administrative work to support the initiatives.

**Characteristics of local e-government in Japan**

Before presenting the results of the case studies we would like to summarize our understanding and view of local e-government in Japan. It is clear that general-purpose computer-based information systems prioritizing the improved back-office work processes will shift to the Internet (web technology)-based IT for the sake of better communication with citizens. Although such a shift is already emerging in all municipalities, it is next to impossible to switch all the existing information systems to a new system tapping web technologies in all of about 3,200 municipalities in the very near future. As described earlier, lack of a financial base, potential mergers among the municipalities and the lack of a human resource equipped with knowledge of the required new technologies are the major challenges in fully realizing local e-government.

On the other side of the coin, e-government is the key to implementing the e-Japan scheme, so the national government is assumed to further promote e-government initiatives as a national policy measure. For example, e-Japan Strategies was reviewed in July 2003 to include the promotion of a one-stop service scheme by enhancing the portal sites. Furthermore, citizens indeed expect improved efficiency of administrative procedures as a result of the e-public sector and mutual communication between the public sector and citizens. There is no doubt that the national initiative and citizens’
expectations will push forward local e-government initiatives. Furthermore, pioneering local governments have already participated in model pilot projects under the national initiative and are awarded a national supporting fund to realize local e-government.

Having said that, however, the majority of the municipalities are quite conservative and are not eager to be the first in applying a new scheme. The public administration does not assume the first-runnership, nor tolerate any failure. On the other hand, if other municipalities are successful with a new service scheme, citizens request a similar service for their own municipality. Accordingly, the typical approach taken by the municipalities is to introduce IT and/or factors that contributed to the precedent success cases implemented by pioneering localities, and to follow these cases. For small- to medium-scale municipalities suffering from a strict budget, it is more difficult to establish all of the information system on its own. As a result, joint systems of establishment and operation are expected to increase. Consensus on the promotion of joint initiatives may be difficult to reach owing to differences in opinion and intention, which may be resolved during the course of the consultation. These conditions mean that it is now required to control the cost and to offer administrative services covering a wider area, reflecting the wider territory of citizens’ daily lives.

Another important factor is citizens’ participation in actively requesting the system construction. The conventional legacy system was built to improve the internal efficiency of local governments, but a web-based system facilitates two-way communication with citizens. For example, the pioneering cities selected in this research built their system through a partnership with citizens. This approach is expected to be taken by the cities following the pioneers.

In our analysis, we tried to identify major differentiating characteristics depending on the size of the localities, but no significant differences were identified.

This suggests our view for progress in local e-government in Japan, that the majority of the prefectural and municipal governments will duplicate the processes taken by the pioneering model governments, irrespective of the size of the localities.

We firmly believe that the case studies of the pioneering local governments in the following section can project the profile of local e-government in Japan in the future.

**Case studies on Japanese local e-government**

**Case selection**

As explained first of all, local e-government projects in Japan will be developed driven by the pioneering local governments implementing the model exhibited by the national government. Accordingly, the future development of local e-government in Japan can be projected by analyzing the local governments involved in the national pilot project. Second, as it will be important in the future for public administration to fully reflect citizens’ needs, local e-government initiatives reflecting citizens’ needs are extremely important. Third, in considering future mergers among the municipalities and the proliferation of a wide-area public administration scheme, the scheme applied by local governments initiating the information service covering a wide area transcending the municipal boundary is also important.
Considering the above three parameters, the following cases are referred to in this research.

For the prefectural level, Hyogo Prefecture was selected as it provides a typical example of promoting local e-government among the prefectures. Hyogo Prefecture, located near the center of the Japanese mainland, has an area of 8,392 km², the largest area among six prefectures in the Kansai region. The population is about 5,550,574 (2000 national census), 2.8 percent up from the 1995 census.

For the municipal level, Okayama (Okayama Prefecture), Yokosuka (Kanagawa), Mitaka (Tokyo), and Ikeda (Osaka) were selected as the pioneering cities among about 3,200 municipalities nationwide, which will be followed by or referred to by the remaining municipalities.

- Okayama City has an area of 513.28 km² with the population showing a steady increase in the period after the Second World War, reaching 626,642 in the 2000 national census. The express road and transportation network covering the wide area are being enhanced with the Seto Bridge, Sanyo Express Road, and Okayama International Airport.
- Yokosuka City has an area of 100.62 km², and is situated within 50km of Tokyo and 20 km of Yokohama. It has a population of 428,645 (2000 national census).
- Mitaka City is geographically located near the center of Tokyo Prefecture, about 15 km west of Shinjuku Urban Center. Mitaka City is a typical suburban residential city with an area of 16.50 km² and a population of 171,612 in the 2000 national census.
- Ikeda City is located in the north-west of Osaka Prefecture, about 15 km from downtown Osaka. The area is 22.11 km² extending narrowly from the north to the south, with the population being a little over 100,000.

Hyogo local e-government association and Hanshin Wide Area Administrative Zone Council were selected as cases of joint collaboration among multiple municipalities. Hanshin Wide Area (seven cities and one town: Amagasaki City, Nishinomiya City, Ashiya City, Itami City, Takarazuka City, Kawanishi City, Sanda City, Inagawa Town) has an area of about 650 km² extending between Osaka Prefecture and Kobe City (Hyogo). The aggregate population in the 2000 national census was 1,687,915, about 30 percent of the Hyogo prefectural population. This is the area devastated by the Great Hanshin Awaji Earthquake in 1995.

Visions and strategies

As in the case of many other prefectural governments, in Hyogo Prefecture, the e-Hyogo initiative is based on the rolling out of the infrastructure (Hyogo Area Information Network) to reduce the digital divide within the prefectural territory. Hyogo Information Highway is a high-speed optical fiber information and communication network, enabling access to the network within the short distance irrespective of the location within the prefecture.

Large urban cities with a population of about several hundred thousand are implementing fundamental restructuring of the key system of the
### Table 7.1 Summary of selected case-study cities (municipalities) in Japan

<table>
<thead>
<tr>
<th></th>
<th>Okayama City</th>
<th>Yokusuka City</th>
<th>Mitaka City</th>
<th>Ikeda City</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
<td>626,642</td>
<td>428,645</td>
<td>171,612</td>
<td>101,516</td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td>513.28 km²</td>
<td>100.62 km²</td>
<td>16.50 km²</td>
<td>22.11 km²</td>
</tr>
<tr>
<td><strong>Local e-government program</strong></td>
<td>Okayama City Local Information Water Supply Service Concept</td>
<td>Yokusuka Information Frontier Plan</td>
<td>e-Mitaka Plan</td>
<td>Joint development of wide-area information offering system among small municipalities,</td>
</tr>
<tr>
<td><strong>Features</strong></td>
<td>Local Information Water Service Concept (Activate the local area by installing information infrastructure).</td>
<td>Introduced advanced information system through a public-industry-academia alliance.</td>
<td>E-Mitaka policies are promoted through a partnership with the local residents.</td>
<td></td>
</tr>
<tr>
<td><strong>Process and status</strong></td>
<td>Established the master plan in March 2000.</td>
<td>Established the program in FY1995.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>E-Application Since 2001, nursing case insurance and corporate tax applications are received via Internet.</td>
<td>E-Bidding Started the e-bidding system operation in 2001 in line with the bidding scheme reform.</td>
<td>Multi-payment Network Pilot operation is underway for payment of charge/fee the applications/notifications to the city office.</td>
<td>Offer Wide-area Local Information Local traders' information can be searched from mobile phone or PCs. Map display is possible combined with GIS.</td>
</tr>
<tr>
<td><strong>Okayama City</strong></td>
<td>GIS Combining with GPS environment information, disaster prevention/dischase information, other public information are now offered.</td>
<td>E-Application Under studying the format to apply city office-wide.</td>
<td>Library Book Search Municipal library books can be searched via Internet web page.</td>
<td>Welfare Support Information Pet animal shaped robot at the single-dwelling senior citizens' home can check his/her safety and send public information.</td>
</tr>
<tr>
<td>Library Book Search</td>
<td>Cross search system for Okayama Prefectural Library is in operation.</td>
<td></td>
<td>Event Information Offer information on lifelong learning classes at city social education hall.</td>
<td>Library New Arrival Search New arrivals to the public libraries can be searched on the web page.</td>
</tr>
<tr>
<td>Event Information Manabiton</td>
<td>Okayama lifelong learning information is in operation.</td>
<td></td>
<td>Library Book Search Books of the Municipal library can be searched on the Internet web page.</td>
<td></td>
</tr>
</tbody>
</table>
city office and the specific public administrative service information system, both internally and in communication with citizens.

Okayama City first installed information infrastructure within the municipal territory represented by the “Okayama City Local Information Water Supply Service”, followed by various projects intended to activate the communities in the city and to promote advanced interface between the city office and citizens.

Yokosuka City is involved in aggressive e-city efforts in the area directly related to public services provided for citizens by realizing intelligent public administration using the Internet and an “Integrated Community Card System” such as the promotion of e-applications, the enrichment of the personal authentication infrastructure, and of the integrated GIS.

Mitaka City has a history of serving as the field for various e-demonstrations and experiments accepting proposals by the national government and private companies, so it aims to be a municipal community enabling collaboration among the public authorities, private companies, citizens and NPOs, among others using IT. For example, Mitaka City is proceeding with the pilot operation of cutting-edge programs such as “IPv6” and “Multi-Payment”. The common feature of these three municipalities is the ability to introduce relatively large-scale information systems by aggressively taking part in the projects supported by national subsidy and other assistance funds, attracting the cooperation of private vendors.

However, even in the case of the small- to medium-sized cities with a population of around several tens of thousands to a hundred thousand, such as Ikeda City, there are unique initiatives undertaken by enhancing the cost performance and use of the subsidies. Ikeda City, jointly with the surrounding municipalities, introduced a system to transmit local information using mobile phones as one method to cut costs.

**Hyogo Prefecture**

Hyogo Prefectural Government established the “Hyogo IT Strategy”, e-Hyogo program, in February 2001 to promote IT strategies, making the three-year-period from FY2001 through FY2003 the priority period for focusing attention on e-Hyogo, reviewing the program annually.

To date, the trunk information and communication network is almost complete including the Hyogo Wide Area Network (Hyogo Information Highway and Prefectural Office WAN). In the future, amid the drastically changing social and economic situations, following the central government initiatives such as e-Japan, Hyogo aims at a local society where the prefectural citizens can use IT-based local and regional information and communication infrastructure.

In FY2001, the “Hyogo Information Highway”, was built, a high-speed, large-capacity (1.8Gb per second, about 1,400 km) information and telecommunications infrastructure connecting key locations in the prefectural territory. Moreover, Kencho-WAN (or Prefectural Government Office WAN), was installed as the common infrastructure to realize e-prefecture. “Hyogo Information Highway” is opened to private companies free of charge, so that IT can activate the local economy, including the promotion of information-related industries, and reduce the digital divide.
The Hyogo prefectural initiative for “e-kencho or e-prefecture” is positioned as a part of “enrichment of information content”. The e-kencho initiative is intended to improve the local administrative service and to realize a streamlined and effective local administrative system. To achieve e-kencho by the end of FY2003 (target), prefectural information will be shared with citizens, online application and notice procedures will be established, and administrative procedures will be processed electronically and paperless.

**Okayama City**

The basic targets in building local e-government for Okayama City are: (1) to realize effective municipal administration, (2) to improve the added value to the administrative service, (3) to facilitate citizens’ understanding of administrative operations and to enhance public involvement in the operation. The main clients of the administrative service are the citizens. Accordingly, in forming the e-municipality, a client-oriented administrative service is at the center of the development of information-related policies. The priorities are to enable the universal use of IT including Internet, for any and every citizen in receiving the administrative service and any other needed public service at any time, and to let citizens participate in the various communities.

Aiming at the affluent citizens’ life and the activated regional economy, “Okayama City Local Information Water Supply Service Concept” (to be referred to as “Okayama City Concept”) was launched in 1999. Okayama City, through “Okayama City Concept”, is to put forward Okayama as “LIT City” or “high value-added information city with an optical cable based information environment”, domestically and internationally.

In promoting the citizens’ use of IT, Okayama City is aiming at the participation of the citizens, who are the key players in this initiative, while the public sector, private business, and NPOs and other players involved are to assume responsibilities as well as fostering mutual partnership as appropriate. Thus, Okayama City expects synergy effects among the players which in turn will increase the benefits of IT in citizens’ daily life. In this context, the city office or public sector is to develop public policies leading to and stimulating the expansion of the citizens’ use of IT as soon as possible.

**Yokosuka City**

The “Yokosuka Information Frontier Plan”, e-Yokosuka basic plan, corresponds to the “IT” section of the “Yokosuka City Basic Plan” which is the integrated general program from Yokosuka City. The “Yokosuka Information Frontier Plan” is an administrative program providing the basic directions and policies of e-Yokosuka measures. The “promoting plan”, the implementation plan, is included in the Plan, which led to the “1st phase 4-year promotion plan” (FY1996–99). During the first phase, the use of IT in public administration was given top priority, and active measures were taken such as to improve public officers’ IT skills and to enrich the information and communication infrastructure.

Currently under the “2nd phase 4-year promotion plan”, the promoting plan is reviewed to proceed with the e-Yokosuka initiatives and intelligence-embedding of the public administration; i.e. e-application format, integrated city fire authority information,
personal authentication infrastructure, e-procurement system, integrated GIS, public comment procedures via Internet.

Yokosuka City is taking the following strategic scenario in proceeding with the e-city office. The backbone information system is being reestablished by revising the main frame system to an open system. All of the system will be shifted to the client-server system by FY2005 (target). After the information security policy is established, the contents of the electronic data form will be disclosed. IT will be used to introduce an effective administrative work evaluation system with objective indicators. The evaluation results will be disclosed.

Yokosuka City has many public and private research institutions (such as Yokosuka Research Park). Through the very active partnership between the city authority and the research institutions, enabling the use of advanced telecommunication technologies, Yokosuka could apply various information systems, leading the way for other localities. In the future, the city will continue to promote research exchange and support projects initiated by the industry-academia-public partnership, which aims at the revitalization of the local economy by creating the growth potential for new industries.

In line with the afore-mentioned approach, Yokosuka City will actively support emerging venture start-ups, SOHOs, and any other new form of business in the telecommunication field so that they will be the significant player in the local economy.

**Mitaka City**

Mitaka City Master Plan, which was newly enacted in 2001, refers to local e-government as one of the policies to firmly establish transparent and fair municipal governance. The specific policies listed are: offering information that is easily understood by citizens, progressive and prompt disclosure of information, and applications/notices via electronic media.

The future municipal governance profile is “effective and open local government”. The basic program labels the “Project to use IT for the betterment of life, work, and daily living” as the highest priority. The characteristics of the project are as follows.

First of all, “use of IT in municipal administrative operation” is the subject of focused study. Mitaka City introduced machines to issue certificates (such as resident’s certificate) in 1996, established a lifelong learning system enabling class reservation via the Internet (1998), and rolled out the school Internet connecting schools and the community (since 1999). Furthermore, Mitaka City achieved a one-stop service by opening the general integrated window (1999) and by establishing the municipal interoffice LAN and groupware (since 2000), and conducted organizational reform. Currently, Mitaka City is proceeding with the local e-government pilot project, a part of e-Japan plan, “Multi-payment” in the e-school Mitaka model project, and the demonstration operation of the IPv6.

Furthermore, in “establishing an institutional framework for the use of IT”, the “Council Method” was introduced and an information policy coordinator who previously worked for a private entity was newly appointed (2002) in order to meet the advanced expertise. Also in order to meet the networking era, the institutional framework was further enriched by revising the 1984 Mitaka City Ordinance on the Protection of the
Personal Information (2002) and by enacting the security control standards (2002). In the future, the city is to establish an integrated security policy and to acquire ISMS.

Ikeda City

Ikeda City released area revitalization measures making use of sophisticated IT in 1995 and has been involved in establishing various concrete systems. The program lists the promotion of the Internet use in the city as top priority. One of the measures to be taken is to roll out the information infrastructure throughout the city with CATV network.

Ikeda City, instead of building up the information infrastructure on its own, established a wide-area information-offering system jointly with neighboring municipalities: two cities and two towns of Toyono Region (Toyonaka City, Minoh City, Toyono-chou, and Nose-chou). Ikeda is attracting attention as a model case for small municipalities, which cannot make large investment on their own, to materialize a certain scale of the information-disseminating capability by establishing a single network system jointly in the region.

The system operation is centered on the alliance with the CATV provider, the public-private third sector company, and will further invite alliances with other private entities, welfare associations and citizens.

Project organization and executive commitment

In the case of Hyogo Prefecture, the project is organized in two sections: a section to promote the use of IT internally in the prefectural government or e-prefectural government, and a section in charge of e-local initiatives to plan and promote the establishment of an information network within the prefectural territory and the use of IT in citizens’ daily life. Similarly, in Okayama City and Yokosuka City, as in many prefectural governments and cities of a certain size, separate departments are involved: the computer processing department and the planning department.

Recently, in order to promote local e-government initiatives more specifically and strategically, an increasing number of local governments are organizing the promotion council to include as members not only public officers but also well-informed persons and citizens’ representatives. In this type of organizational scheme, the Chief Information Officer (CIO) in charge of overall strategies is appointed from the public office, as in the case of private companies, to promote IT internally in the public offices, to establish action plans, and to establish security policy. In the future, local governments will be required to promote more strategic policies and measures, which will lead to an increase in organizational schemes similar to the one mentioned above.

On the other hand, in the case of many small- and medium-sized municipalities, the computer processing department and e-city planning department are not clearly separated. In Mitaka City, as it used to outsource much of the internal computerization work, there is not an established computer processing department. The planning department is in charge of the use of IT internally in the public offices and the operation of the resident basic resister network.

Hanshin Wide Area (seven cities and one town) has an organization to coordinate the wide-area public administration, which also serves as the coordinator in coming up with
local e-government initiatives covering the wide area. However, in the case of joint collaboration among multiple municipalities which are above a certain size, it may be difficult to apply an integrated system because of the differences in the status and surrounding situation of each municipality, organizational framework, and past history. As has happened for the seven cities and one town in Hanshin Wide Area, an organizational body is required to identify the specific needs relevant to the wide area and to promote projects.

**Hyogo Prefecture**

The sections in charge are E-Prefecture Office Desk and E-Hyogo Desk. E-Prefecture Office Desk is mainly involved in the information and communication infrastructure for the prefectural administration such as the use of IT in the prefectural office, introduction of administrative applications, operation of the prefecture web page, and installation of Kencho WAN. On the other hand, E-Hyogo Desk is mainly involved in local initiatives for the prefectural territory such as the installation of the “Hyogo Information Highway” as the local information network and initiatives related to the citizens’ daily life.

**Okayama City**

In order to carry out the local e-government initiative in a comprehensive and planned manner, Okayama City established “e-Okayama City Promotion Council” and “Internal Network Administrators’ Panel” to strengthen the framework to promote the inter-/intra-office and local schemes. “E-Okayama City Promotion Council” is to promote e-Okayama City policies and measures, while the Internal Network Administrators’ Panel studies the networking of inter-/intra-office and application of IT in the back-office work such as the high-speed connection with branch offices, replacement of PCs let to officers, conducting interviews on request, and skills training, among others. The members constituting these bodies are as follows.

E-Okayama City Promotion Council:
- Council members (24): Deputy Mayor(s), Treasurer, Chief Education Administrator, Water Work Administrator(s), General Director-level Executives
- Supervisors (23): General Manager of e-Okayama City Policy, Section Managers in the relevant offices in charge
- Promoting staff (42): one Section Deputy Manager or Chief from all offices
- Supporting staff: one from all sections.

Internal Network Administrators’ Panel:
Members (42): promoting staff of the above-mentioned Council, serving also as a communication channel in case of an internal emergency.

**Yokosuka City**

Yokosuka City, in order to carry out the e-Yokosuka initiative in a comprehensive and planned manner, established the “Yokosuka City IT Strategy Council” and the
“Headquarters to Promote e-City Office”. Yokosuka IT Strategy Council, under the chair of the Mayor serving as the city-wide CIO with 19 participating organizations of industries, academia and the public, studies the city-wide organizational scheme and e-strategies, which are set up as IT Basic Strategies. The Headquarters to Promote e-City Office is headed by the Mayor, CIO and CEO of the City Office, and is made up of departmental general directors and other top executive officers, to initiate the internal organizational scheme to promote e-city and to draft e-policies and measures to be implemented by the city, which are reflected in the e-City Office Strategies.

Mitaka City

In order to promote e-city comprehensively, Mitaka City organized a “Council to Promote IT City Mitaka”, which involves citizens, universities and other research institutes, industries, public and public-service bodies, to study the policies and measures including pioneering and leading experimental projects. Mitaka City IT Policy Coordinator, a part-time specialist, is nominated to be involved in the planning and coordination of the city-wide IT policies from an expert point of view.

Ikeda City

In Ikeda City, the IT Policy Section, Comprehensive Policy Department, is taking the leading role in the comprehensive study of the inter-/intra-office and local policies and measures. As in the other cities, the institution to promote e-Ikeda initiatives is headed by officers in charge of e-policies.

E-service and e-participation applications

Historically, most local governments processed back-office work with a general-purpose host computer. Recently, such a system is being changed to a client-server system to improve the interface with residents, namely the front-office work. This reflects the fact that the proliferation of the Internet enables citizens to have easy access to the local governmental offices.

In this research, the cases providing an advanced information service to citizens were selected. Common applications widely introduced are accepting e-applications, e-bidding, provision of information via web page, and GIS.

Hyogo Prefecture

Hyogo Prefecture set up the web page http://web.pref.hyogo.jp/ transmitting various types of information in August 1996, which was renewed as “Hyogo Dream Information” in October 2001. The information which used to be posted by the prefectural organization was reorganized into the field of topics to improve the access efficiency. Furthermore, in order to serve the citizens better, the information posted is increased to include the “Hyogo Prefectural Law and Regulation Database” covering the prefectural ordinances, regulations and orders, prefectural plans and programs, financing system information,
statistical and other quantitative information, and information on the bidding for public construction works.

E-bidding: scheduled to start the pilot operation at the end of FY2003.

E-application: in FY2001, the issues to be addressed in processing the application and notice procedures electronically and system functions were investigated. Since FY2002, the system development has been in place for procedures that are easy to process electronically, as simple identification is sufficient and application charges are not required. By the end of FY2003, part of the system was scheduled to be in full operation.

Library Information Network: a system enabling cross-searching between the databases of Hyogo Prefectural Library, Kobe Municipal Libraries Information Network and six private university libraries (located in Hyogo) is already in operation.

Okayama City

E-application and issue: citizens can receive the public service from a public terminal installed in the household or the community center in the area, interactively talking to public officers visually on the display. They can fill in application forms and submit the forms via the terminal, and print out the issued certificate locally. For the authentication of the citizen, a previously issued electronic certificate is stored in the USB key, which is inserted in the public terminal upon application. If an issuing fee is accrued, the Internet banking payment system is used.

Remote public service and health consultation: citizens can benefit from a consultation service on municipal service, welfare service, or health by interactively talking to public officers visually on the display.

E-neighborhood association: a network system to promote exchanges between the public administration and citizens, and between the citizens, is established using multimedia content including images and voice information.

Yokosuka City

E-bidding: Yokosuka City started reform of the bidding scheme and the institutional and work process so that a fair competitive environment was secured, and then the e-bidding system was introduced in September 2001. Yokosuka City system is unique in the sense that the system introduced was tailor made for the city, searching the best-fit bidding system for the city and fully reflecting the searched results. In particular, the Yokosuka system is an effective one, friendly both to the public (placing the order) and to the private (being awarded the order), is linked to the municipal financial and accounting system, and is excellent in terms of potential extension and flexibility.

Integrated community card system: Yokosuka City Integrated Community Card is currently studied to integrate the public service functions, enabling easy and safe access to municipal procedures and public service via Internet or via kiosk terminal, with the private service functions, such as the use of transportation, for shopping, as an accumulated point card, and consultation ticket for medical institutions, into a single IC card.

Integrated geographic information system (GIS): Yokosuka City introduced integrated GIS into the municipal offices and opened a Web GIS system for citizens’ use,
“Yokosuka My City Guide”. Lack of coordination, especially between departments involved in controlling major geographical information (water works, tax, agriculture, fire and urban planning departments in the case of Yokosuka City) prevents the local government from introducing an integrated GIS. In Yokosuka City, in the first place, the urban planning department served as the coordinator among all the concerned departments in establishing an integrated GIS. After that, a planning coordination department was independently established as the new hub organization with budgeting authority on GIS, which led to the smooth introduction of an integrated GIS.

Library information search system: currently, the municipal library is offering an Internet-based library search service and reservation for book lending service. Yokosuka City is scheduled to reorganize the municipal library, making it a future citizens’ information center. “The Future Library” (tentatively named) will be launched as the hub in the e-Yokosuka initiatives in realizing the around-the-clock operation and IT help-desk functions.

**Mitaka City**

Electronic payment service pilot operation (multi-payment-system): Mitaka City started a pilot operation for the e-payment of administrative service charges and fees in autumn 2002, the first of its kind among the Japanese local governments, in order to facilitate the local e-government initiative. This pilot operation is conducted as part of the local e-government promotion pilot project sponsored by MPIIPT. Mitaka City system is unique in enabling electronic payment of charges and fees related to applications and notices via the Internet. Specifically, fees which used to be payable at the counter of financial institutions with the statement of payment issued by the city office can be paid via ATM or Internet payment from a personal computer at home with the e-payment system.

Lifelong learning information-offering system: a system is already installed for the various lifelong learning classes opened in the municipal social and educational hall, which can be searched by subject area and discloses the class synopsis; applications for entry can be submitted via Mitaka City web page. Also if citizens want to use the municipal social and education hall to organize classes, reservations can be made on the Mitaka City web page by purpose of use. The city web page also has a bulletin board for event information for municipal organizations or similar.

Library network system: Mitaka municipal library established a system to search the library and the lending status via the Internet web page. Events at the library are also posted on the web.

**Ikeda City**

Local information-offering system: Ikeda City, using the “Model Project to promote wide-area local information and communication network system” by the Ministry of Postal Service and Saving in FY1998, decided to build the “Toyono Net”, a wide-area information-sharing network system which enables any and every citizen to be exposed to various types of information within the region, transcending the municipal/town boundaries, from the Internet, i-mode (available on the mobile phone), and public kiosk terminals, open for use by any person. In rolling out the “Toyono Net”, three cities and
two towns decided to jointly establish the system and to disseminate the information on the Toyono Region on the web.

The information on the web, serving the vitalization of the city center, covers information about 25,000 traders, regional and facility information, map displays with the GIS, tourism and hiking route information, event information, and information related to the newly applied nursing case insurance. The information conventionally confined in the separate municipalities/townships is networked for the Toyono Region base and is shared among the participating municipalities/townships to materialize the wide-area-based service to residents.

Social welfare support information system: Ikeda City, by using the already installed GATV network, connected a pet animal-shaped robot, serving as an at-home welfare service support terminal, located at single-dwelling senior citizens’ homes or the assisted senior citizens, with “Ikeda Sawayaka Public Corporation”, the welfare service support center. As the robot is embedded with a quasi-animal reaction function (to react and communicate as living animals) it can serve as a communication support, such as checking safety and communicating welfare/administrative information. Thus the information and communication system to support welfare service is complete with due attention to privacy.

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**Joint collaboration**

Hyogo Local E-government Association is involved in the following applications.

E-application system: research and development is carried out to realize a common system jointly used by the participating municipalities to carry out online the current manual administrative procedures conducted at the municipal office—where the citizen visits the office, fills in and seals the form for submission. Major functions to be embedded in the system include the following:

- Presenting application forms: transmitting a list of the required format, guidelines on preparation, the application format.
- Preparing and transmitting the form: supporting the citizen in filling in the form, designating the file to be attached, electronic signature.
- Accepting the application form: receiving the application form, informing the applicant of the receipt, referring to the relevant department/section.
- Inquiring about the status of the application process: preparing processing status of the application, controlling the payment record or any other relevant history record, sharing information for screening.
- Informing the applicant: letting the applicant know the result of the completion of the screening, registering the screening result to the domain accessible by the applicant
- Receiving the screening result notice: the applicant receives (downloads) the screening result.

Public facility reservation system: a system to post vacancy information about the halls and sports facilities under the municipal jurisdiction, a draw for allocation of reservations (in case of multiple applications), reservation, and calculation of the lease fee, has now been researched and developed. Major functions of the new system include the following:
• Facility guide: information on the details of the public facilities—name, facility outline, lease charge, available hours, closed days
• Inquiries for the vacancy: information on the space availability by the lease unit; reservation status, unavailable days
• Allocation and reservation: acceptance of the reservation, inquiry and cancellation; in case a draw is necessary, the application is received, processed and the result of the draw is controlled. The system is available for registered members, so the system can register the use and reply to the inquiry.
• Lease charge payment control: controlling the payment of facility lease charge.
• Track record: controlling the track record of the facility use.

Hanshin Wide Area (seven cities and one town) is carrying out the following applications.

Wide-area library book search system: the book reference information of the public libraries in seven cities and one town are integrated into a single database with a high-speed cross-search function. The user can easily locate the requested book on the web page.

Public facility reservation guidance system: the system offers information on the public gymnasiums in the area. If space is available, the citizens can apply for a reservation or for a place in the draw from a public terminal or personal computer at home.

The system also serves as the portal site for seven cities and one town. The web page provides the public facility directory, including the address, outline, charge structure, which is accessible by citizens in the Hanshin Area from public terminals, mobile phones and personal computers. Consultation and inquiry via email is also available.

Disaster rescue network system: upon the outbreak of a disaster, the evacueed citizens and affected citizens can register their status (safety of him/herself and the family, extent of the damage, and the evacuation point), which can be retrieved by citizens inside and outside Hanshin Area.

A web page accessible by mobile phone is created on the Hanshin Wide Area site to post hospital information; emergency call number, acceptance of emergency patients, address, available discipline and to call the applicable medical institution directly from the searched result via mobile phone (Tel To function).

Technology

As previously mentioned, the various work processes conventionally processed in the host computer are now shifted to a new system, the client-server system. Work processes can be done on the Internet by letting PCs to all officers and by building the inter-/intra-office LAN.

Needless to say, effective IT investment should be based on a cost-benefit analysis, but project evaluation, limited not only to the IT arena but the project in general, has not been done in the Japanese public administration so far. Especially in the case of IT-related projects, the data on the benefits are difficult to identify, so there is no data available at this moment for the evaluation. However, it is now increasingly required to conduct a detailed evaluation of the IT project before deciding the next phase of e-investment.
Hyogo Prefecture

With inter-/intra-office LAN, the infrastructure to share information internally is ready. Also each officer is provided with a PC.

Hyogo Information Highway, the local backbone IT network, is an optical fiber network of 1.8kb per second bandwidth, with an installed total length of 1,400km.

Okayama City

With inter-/intra-office LAN, the infrastructure to share information internally is ready. Also each officer is provided with a PC.

Okayama City Local Information Water Supply Service Network installs the high-speed backbone within the municipal territory using the sewage system providing 100 Mbps access line to each household and 1 GBps access line to each office. The first phase was completed in 2001, installing approximately 24-km trunk line and approximately 9-km branch line.

Yokosuka City

The licensing rights for ready-made software available on the market with basic function such as the search and the attribute input required for the concerned authorities were purchased in realizing the integrated GIS. Furthermore, Web GIS was established on an internal LAN enabling all public officers to access and use the GIS. In the system development of GIS, the city office contracted with the professional system integrator to outsource the system design, which enabled the system to be neutral for all departments.

In establishing the GIS for disclosure to citizens, private ASP (application service providers) are fully used, which, according to the city, will improve the system satisfaction level in the context of the public service, will operate the system stably without intermission and will ease the development into the GIS under the wide-area partnership.

Yokosuka City Integrated Community Card is aiming at a single IC card usable for the public service, including procedures at the city office, and for the private sector such as for the use of transportation, for shopping, as an accumulated points card, and consultation ticket for medical institutions.

Mitaka City

The inter-/intra-office LAN is ready and each officer is provided with a PC. The “Ubiquitous Network Mitaka Model” was configured using radio LAN, user authentication technology, motion picture transmitting technology in IPv6 environment. The subject of the pilot operation is an integrated educational support system and a citizens’ service system, the contents of which can be used by citizens in schools, the household, regional mutual exchange, off-campus classroom, individual learning, citizens’ university and the use of motion pictures. During the pilot operation, the individual authentication technologies and operating interface will be evaluated. The demonstration experiment started in January 2003.
Ikeda City
The inter-/intra-office LAN is ready. “Toyono Net” web page posts the facility/shop information, tourism/public facility information and recommended web pages. The web information can be obtained not only from personal computers but also from a public kiosk terminal located in the city and from mobile phones (in i-mode). In posting the information on the web, 1:2,500 base map issued by the Japan Geographical Survey Institute is processed with GIS editing software to plot the various types of information on the map.

In developing Toyono Net, the priorities were to introduce the service to i-mode, the promising service in the mobile phone market, and the full use of GIS (geographical information system).

Especially with regard to i-mode, the number of subscribers and uses has increased dramatically since the start of service in February 1999 and exceeded five million i-mode enabling handsets in March 2000, attracting attention as an effective telecommunication tool.

E-skilling
In many local governments, the department in charge of e-policies is leading the e-skilling of the officers. Besides the use of office automation equipment, training related to information security has recently been given special emphasis.

Hyogo Prefecture
Internet Skill Training Sessions were set up to improve citizens’ information literacy. Namely, the strategy of the Hyogo Wide Area Network is to be implemented, paying attention both to the physical and human information infrastructure.

Okayama City
Okayama City is nurturing the IT skill of each public officer in order to develop various projects by identifying the residents’ needs followed by prompt decision making, to be equipped with the good cost-management capability and smart management sense, and to put emphasis on the project result, verification, and review. Specifically, a scheme to share information among officers using the office LAN, electronic conferencing, and an electronic bulletin board is established.

At the same time, IT skill training is offered to familiarize officers with the various software applications such as Microsoft Excel, Microsoft Access, Microsoft Power Point and WEB editing tool.

Yokosuka City
Yokosuka City is actively engaged in the IT training of public officers to improve the basic IT competence of all officers, to identify the potential leaders in promoting e-Yokosuka who will be assigned responsibility for information throughout the municipal office. The five priorities in training are: the needs and advantages of the e-Yokosuka
initiatives for the organization, handling of the information, basic competence in using the information system, technologies and sense in offering the information, and the rules in the network.

In order for the personnel to acquire these basic competences, the information policy section and human resource section jointly prepare the training menu for beginners, intermediates, and advanced users. Moreover, a separate training menu is prepared for management and staff. The selected training for management is designed not to make the person an advanced user but to be equipped with the skill required to give appropriate instructions to the staff actually involved in the day-to-day work using IT.

Mitaka City

Outdoor Action (OA) training to familiarize officers with PCs has been conducted to promote office automation in the city office. But in order to promote e-Mitaka in the future, the basic competence required for local government public officers is not only to use IT equipment but also to positively use the information. Also the media communication capability and the competence to transmit information including images and voice over of the narrative information are emphasized. Accordingly, the public officers’ required competence is identified and then training programs are established to nurture basic knowledge addressing the sophisticated use of IT in optimum ways and specialized fields. The city points out the necessity to conduct well-organized public officers’ e-skilling effectively and within a limited time span.

Ikeda City

The e-skilling targeting public officers is conducted in the city office. There is particular emphasis on the protection of information security following established security policy.

Motivational basis of G2C and C2G relations

As of 2000, 100 percent of the national government ministries/agents and prefectures, 83.6 percent of the cities and wards, and 61.6 percent of the towns and villages had set up a web page. The information transmitted by the public administration is now shifting from conventional paper media to Internet media.

The accessibility of the web page is a major priority. In 2000 MPHPT started to study the optimum profile of the web accessibility considering issues unique to Japan, and then, in 2003, publicized and started distributing “web helper”, an application to check web accessibility.

In the future, the Internet is expected to serve as the communication tool between public administration, citizens, and companies. To date, many local governments are providing the information one-way only, but there are initiatives available for the interactive exchange of the information, using a web page or information network, as outlined below.

Hyogo Prefecture
Residents can directly email comments on the public administration to the web page. Also a mail magazine giving public administration guidance via email is issued. The administrative procedures are partially through the web page, such as to accept e-applications.

**Okayama City**

In the projects of “e! City Office” and “e! Neighborhood Association”, Okayama City is mutually exchanging information with residents.

**Yokosuka City**

Yokosuka City set up the city web page in 1996. Various services are currently on the city web page, such as transmitting municipal policy information, offering Web GIS system, disclosing the city assembly information, and offering space for web page created by the citizens.

The city also conducted a demonstration operation of the citizens’ portal site system which offers the most recent information for the respective user via the Internet in 2002. Once a user registers an information request, a web page dedicated to each user reflecting the registered requests is developed. A push technology based system analyzes the users’ attributes and automatically provides the necessary municipal administrative information.

**Mitaka City**

Besides the Mitaka City Office web page, there are various municipal portal sites indicated by the field of contents, such as “Mitaka Mall”, “Mitaka Child Care Network”, “Mitaka, City of Future”, all of which are established and operated by Town Management Mitaka Inc.

“Mitaka Mall”, municipal virtual mall: in order to contribute to the vitalization of the shopping mall in Mitaka City, Mitaka Merchants and Industry Association and Town Management Mitaka Inc. took the initiative in establishing the promotion council formed by Mitaka City and private business in the city from the preparation phase. Currently, about 100 companies and stores are participating.

“Mitaka Child Care Network”, community-wide child care support page: the page includes a system to receive questions and consultation on child care via email or the web to be answered by the experts. Also, information from the city and general citizens can be posted on the page and related applications can be done on the web. Not only public information but also information of private individuals is posted. The citizens are actively taking part in adding or renewing information.

“Mitaka, City of Future”: in order to simulate the future of the municipal society, new town management projects using IT are implemented in various fields such as culture, education, and environment. The activity reports of these projects are disclosed on the web page to actively reflect the citizens’ opinion.

**Ikeda City**
Ikeda City is participating in “Toyono Net”, the network system providing information covering the wide area, which provides an enabling environment for citizens to use not only city-based information but also wide-area information covering neighboring cities and the town.

**Identifying users’ needs**

Web pages so far have been built mainly for local governments to transmit tourism and local information externally, but the role of the web page is now being reviewed. One of the effects of setting up a web page is the development of citizen participation. Local governments can transmit public administrative information to the residents via the web page and the mailing list. In turn, the residents can easily communicate their needs and their opinions or comments to the public administration as they can access the public offices from their PC at home. Recently among the local governments, as one way of inviting public comments, the policies are disclosed and a questionnaire is conducted on the web page, because the Internet is effective as a tool to easily reflect the residents’ opinion on the policies.

On the other hand, the conventional approach and structure taken in offering the public service may be changed as the citizens’ participation is progressed. To date, it is understood that local governments which “fully grasp the local information” can most effectively offer that public service. However, recently in a mature society with wide-ranging personal recognition and needs, there is a limit for the local government to distribute the resource in the optimum manner throughout its jurisdiction. As the players offering the public service in each community, the roles of the NPOs, volunteers, ordinary citizens, and private bodies are now being reviewed. In the case of Okayama City, for the “e! Neighborhood Association” System using the Ministry of Economy, Trade and Industry (METI) “e! Project” scheme, the information tools for the collaboration among the neighborhood association communities are used in order to support the community development participated in by residents.

**Partnership and cooperation**

The web page on the Internet recently started to embed a system for collecting public comments besides transmitting information from the city office. As in the case of Mitaka City, the citizens’ initiatives are emerging in drafting and implementing the various local e-government policies and measures after defining the division of responsibilities between the public administration and the citizens.

**Hyogo Prefecture**

By effectively using telecommunications technologies, Hyogo Prefecture strengthens its capability to disseminate the prefectural administrative information and wide-ranging charms of Hyogo locally, nationally, and internationally, and to promote the sharing of information with citizens, which is the starting point for the citizen “participation in and collaboration with” the prefectural administration.
Specifically, the public relations and public opinion hearing via the web page on the Internet are enhanced, the prefectural administrative information is offered through a field of easily understood topics, the mail magazine is sent out, and the public opinion posting function on the web page is enriched. Also by introducing the past public hearing cases, opportunities to communicate with citizens will be increased.

As the ways to promote citizen participation and collaboration, the status of public opinion is introduced on the web page by which the web page is positioned as the portal site for the citizen participation into the prefectural administration.

Okayama City

A public and private joint-venture third sector company, LIT City Co. Ltd, was established in May 2001 with the business objectives to develop and disseminate broadband contents to households using an optical fiber network installed by Okayama City and to conduct and maintain the related networks. LIT City Co. Ltd is an IT venture consortium with members from Okayama City and private companies from within and outside the city. LIT City is not limited to the work outsourced by Okayama City but opened to the outsourcing by business entities in general and other local governments. LIT City is already acting as the practical operating partner for e-Okayama City initiatives. This way of approach should be introduced by other municipalities under the same concept and approach in the future.

Furthermore, the following measures are taken to enhance the environment supporting the citizens’ use of IT.

Information Plaza & IT Help Center: the existing public and private facilities will be enriched as the activity base for the personal exchange between the citizens and information volunteers. The operation of such facilities will be gradually handed over from the public-private partnership to information volunteers or NPOs.

PCs: the recycling of used personal computers out of the public and private offices is promoted. The support instruments are provided for the neighborhood associations to purchase the PCs.

Information volunteers: the information volunteers are the lecturers for the IT classes for citizens and support the citizens’ IT use. With the collaboration of the private sector, educational institutions and welfare organs, the information volunteers are publicly recruited at the earliest possible date among the retired ex-public officers, ex-private company employees, and from other relevant institutions.

Local IT leaders: among the information volunteers, local IT leaders, who can design and realize e-local community vision, will be nurtured.

With these measures, Okayama City is aiming at the “electronic neighborhood association”, which is the citizens’ participatory community network.

Yokosuka City

Yokosuka City, through the community IC card and integrated GIS allowing citizens to use the information infrastructure and applications built and introduced by the city government, is to realize the citizen participatory public administration operation.
Mitaka City

Mitaka City concluded the partnership agreement with “Mitaka Citizens’ Plan 21 Conference” involving the citizens before the drafting of the Master Plan and the Basic Program (since 1998). All the provisions in the draft were posted on the web page and opinions invited via email. Moreover, an electronic citizen conference room was set up. The city also emphasizes collaboration with the NPOs, such as the “Senior SOHO Support Salon, Mitaka” and “Child Nursing Care Convenience Space” for supporting child care. Currently, the city is involved in opening a citizens’ collaboration center (tentatively named) and also proceeding with the “Mitaka; City of Future” Project.

Mitaka City is contracting many functions related to the town management to “Town Management Mitaka Inc.”, which organizes personal computer training sessions and develops the child-care support system.

Ikeda City

The promotion of the e-Ikeda initiatives will shift the administrative service from “mass marketing” to “one-to-one marketing”. One-to-one marketing offering an administrative service to meet the specific needs of the service-receiving citizens, is limited to a handful of people at the moment. IT developments will enable the service to meet the wide-ranging needs of every citizen.

Aspects of resource allocation

For the local governments to further pursue e-government projects, from the mid-term perspective, it is necessary to change the public officers’ mindset and to accumulate the know-how under the initiatives of the group in charge of information policy planning and information system. Though the local e-government related group is not such a large organization in most of the localities at this moment, some localities have already started institutional reform to promote local e-government projects such as upgrading the group in charge from the section to the departmental level.

As for the knowledge accumulated in the group in charge of e-policies, action is being taken to proliferate such know-how to all public officers through e-skilling and knowledge management. The basic approach in local e-government initiatives is as summarized in Figure 7.1. In order to implement effective local e-government as indicated in Figure 7.1, a larger budgetary allocation to the departments in charge of local e-government initiatives is expected in the local governments.4

Notes

2 LGWAN is the communication network which enables the distribution of advanced information by mutually connecting internal organizational networks of local governments.
The LGWAN-based applications currently in operation include exchange of electronic documents, retrieval of laws, ordinance, white papers and various bulletin boards.

3 The Resident Basic Register Network System (RBRNS) newly adds a resident’s code to enable the administrative processing related to the resident registration beyond the judicial territories among the cities, towns, and villages. MPHPT is enhancing the RBRNS regarding it as an instrument to increase convenience for residents and to streamline the public administration of the central and local governments.

4 The following are the total amounts of expenses covering the equipment purchase, equipment rental/lease, circuit use, equipment and software maintenance, outsourced personnel expenses, outsourcing (outward contracting) fees/safety and security measures, training, and other miscellaneous expenses in FY2001, as far as recognized by the department in charge of local e-governments subject to the case study (amounts are given per year): Hyogo Prefecture Yen 1.4 billion, Okayama City Yen 1.4 billion, Yokosuka City Yen 1.2 billion, Mitaka City Yen 715.96 million, Ikeda City Yen 191.49 million.

Bibliography

This chapter explores many of the challenges that US local governments confront and the solutions they found in their pursuit of e-government benefits. First, a snapshot picture of the status of local government activities is provided. Against this backdrop, we examine four “best-of-breed” local government agencies according to the model identified in Chapter 1 of this book.

E-government activities also encounter a number of challenges: specifically, horizontal coordination and channel conflict, cost-benefit opacities, legal and ethical liabilities, and technical limitations. Relying on a comprehensive survey of US local governments, the following section provides a fairly clear, albeit brief, understanding for where local governments stand as a whole in the US. The remainder of the chapter then explores the four “best-of-breed” case studies.

Progress to date: a local government snapshot

In 2002 the International City/County Managers Association (ICMA) conducted one of the most comprehensive reviews of the status of e-government in American local governments. The ICMA surveyed the chief administrative officers in every municipality and county with a population of 2,500 and larger. Approximately 7,844 local government jurisdictions received the survey, and roughly 53 percent responded. While previous surveys had been conducted, the ICMA survey was one of the first attempts to establish an empirical baseline of e-government activities. The results of the survey are examined below.

As noted, with the exception of the over 500,000 group, the survey tapped roughly 55 percent of their total population. On the larger jurisdictions, roughly 35 percent responded. In examining the population characteristics of the sample, 25 percent derived from populations of 2,500–4,999, 25 percent derived from 5,000–9,999, and 25 percent from 10,000–24,999. Twelve percent of the sample came from a population of 25,000–49,999, and 7 percent from 50,000–99,999. The greater than 100,000 population segment reflects roughly 5 percent of the sample.
According to the survey, 74 percent of respondents indicated that they have an established website, and 60 percent of those jurisdictions without a site indicated that one would be established within the next 12 months. In terms of the daily management of the jurisdiction’s website, 26 percent indicated that the IT department is responsible for this function, while 24 percent indicated that day-to-day management is performed by the city/county manager’s office. The remaining 50 percent stated that maintenance responsibility is left to any of the following departments: finance, communications, library, or business development.

With respect to citizen involvement in the e-government vision, only 10 percent of the sample stated involved citizens in the determination of what services to provide online. Of those 10 percent, the vast majority of the citizens indicated that they would like web services to request services, conduct financial transactions, register for community events, log formal complaints, and obtain council meeting minutes.

In terms of policies and formal procedures, 64 percent of the respondents claimed that they had no formal policy on website privacy and 92 percent did not provide options for the visually impaired. Only 11 percent allowed paid advertising on their jurisdictional websites.

In terms of financing e-government, 76 percent of surveyed respondents indicated that there is no separate budget item for e-government. Figure 8.1 illustrates the distribution of budgetary allocations for those jurisdictions with separate e-government budgets. A full 97 percent of the sample indicated that e-government efforts were being funded from general revenues.

![Figure 8.1 Budgetary allocations of jurisdictions with separate e-government budgets, USA (source: ICMA 2002).](image)
Levels of development

Using the e-government typology established by the United Nations and American Society for Public Administration, three composite indices were developed to assess the level of their e-government efforts. Level One is defined as an enhanced web presence that offers email communication and forms for download. Level Two is an interactive web presence offering online form completion and submission, as well as email and downloadable forms. Level Three is a transactional web presence, which offers web-based transactions, such as payment of taxes, fines and fees, or utility bills. A composite index was developed to determine the local government’s e-government level.

According to this sample, small municipalities (populations less than 50,000) appear to be least engaged in e-government activities. Fifty percent of small municipalities offered Level One e-government services. Only 26 percent of small municipalities offered Level Two services, while less than 4 percent offered Level Three e-government services. Although the small municipalities are less engaged in e-government activities, the case study of Conyers, Georgia (discussed below), provides detailed experiences and narrative of one small municipality offering transactional web services. Approximately 83 percent of medium municipalities (populations of 50,000 to 249,999) offered at least one Level One e-government service, and 50 percent offered Level Two services. However, only 21 percent of medium municipalities had achieved Level Three status. These findings highlight that the majority of the medium-sized jurisdictions are engaged in some level of transactional web services. The case study of Virginia Beach, Virginia (discussed below), offers an example of a medium municipality extensively engaged in Level Three e-government services.

According to the survey, 85 percent of large municipalities (populations of 250,000 to 499,999) had achieved Level One services, and 55 percent offered Level Two services. Yet only 35 percent were offering transactional, Level Three, e-government services. Scottsdale, Arizona, is discussed below as a case representing large municipalities. Very large municipalities, those with populations over 500,000, have achieved the highest levels of e-government adoption. Almost 90 percent of very large municipalities meet the Level One threshold. 77 percent of very large municipalities offer Level Two services, while 35 percent offer Level Three e-government services. Seattle, Washington, the last case study provided below, has numerous transactional services on their website. Not surprisingly, level of development does appear to be related to jurisdictional size. As discussed above, larger jurisdictions have higher levels of e-government adoption, thus supporting previous findings that population is a strong predictor of technological innovation (Moon 2001; Bozeman and Bretschneider 1986).

How local governments implement e-government

Not only are the levels of e-government adoption important, the manner in which e-government applications are implemented is critical to understanding the nature of public sector information technology. In terms of the presence of information technology departments, there is a significant disparity between small and large jurisdictions. Only
28 percent of small municipalities have IT departments, a sharp contrast to the roughly 85 percent of medium, 80 percent of large, and 100 percent of very large municipalities. Another notable difference based on population size occurs in the area of in-house versus outsourced website applications. The small municipalities use in-house sources for website applications far less than their larger counterparts. For example, only 28.5 percent of small municipalities develop applications in-house compared with 55 percent of large municipalities. However, the operation and management of a jurisdictional website involves many more facets than just application development. In fact, the majority of all jurisdictions conduct website design and management tasks in-house, thus suggesting substantial investment in internal capacities.

**Barriers to e-government**

According to the data collected via the 2002 ICMA E-Government Survey, local governments faced several barriers to successful implementation of e-government. The most typical barriers, regardless of type or size of government, were “lack of technology/web staff,” “lack of financial resources,” and “lack of technology/web expertise.” Table 8.1 demonstrates the top three barriers facing each category of municipalities by size of jurisdiction. Concerns about technology/web staff and expertise are particularly troubling as the need for investments in internal capacity and knowledge typically increases along with the level of e-government adoption.

**Table 8.1** Top three barriers facing each category of municipalities, by size, USA (%)

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Small municipalities</th>
<th>Medium municipalities</th>
<th>Large municipalities</th>
<th>Very large municipalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of technology/web staff</td>
<td>45.4</td>
<td>47.8</td>
<td>50.0</td>
<td>–</td>
</tr>
<tr>
<td>Lack of financial resources</td>
<td>37.1</td>
<td>54.0</td>
<td>65.0</td>
<td>44.4</td>
</tr>
<tr>
<td>Lack of technology/web expertise</td>
<td>33.1</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Issues regarding security</td>
<td>–</td>
<td>45.7</td>
<td>–</td>
<td>44.4</td>
</tr>
<tr>
<td>Issues regarding privacy</td>
<td>–</td>
<td>45.7</td>
<td>60.0</td>
<td>55.6</td>
</tr>
</tbody>
</table>

Source: ICMA (2002).
Changes resulting from e-government

E-government initiatives are grounded in changing services and operations. When asked about the changes that resulted from their e-government efforts, the most common change cited by small municipalities is the increased demand on staff (see Table 8.2). Medium and large municipalities alike viewed increases in citizen-elected/appointed officials as the biggest change. Large municipalities and very large municipalities also perceive re-engineering of business processes to be the biggest change resulting from e-government. In a follow-up survey of the selected local governments who identified the “changed role of staff,” the most common types of changed roles for staff include task expansion and task reorientation. According to these local governments, task expansion includes answering more email inquiries, while task reorientation includes re-skilling employees to serve as web masters.

Budgeting for e-government

Given that one of the biggest barriers to e-government implementation, according to surveyed local governments, is a lack of financial resources, it is important to understand how the jurisdictions allocate their budgets. The majority of local governments, regardless of size, do not have separate IT budgets. This creates problems in times of budget crises because the funding for technology and e-government applications is easy to transfer to other programs. Figure 8.2 illustrates the e-government budget process for municipalities according to size.

USA case reports

Case selection

The following case studies provide an overview of the e-government best practices in United States municipalities. In order to determine which cities to include in the analysis, several publications and awards programs were consulted (including the Center for Digital Government and Government Technology magazine’s Best of the Web Awards, a best-practices study conducted by the Civic Resource Group, MuniNet Review, and municipal website assessments conducted by Darrell West of Brown University). In addition, the cities selected represent a range of population size, which can be useful for extracting the best practices most relevant to particular local governments. Empirical data presented on each case comes from the International City/County Managers Association 2002 E-Government Survey dataset. Furthermore, the descriptive narrative offered in each study has been generated through personal interviews with the CIO or city manager of each jurisdiction.
Table 8.2 Top three changes resulting from e-government implementation for each category of municipality, by size, USA (%)

<table>
<thead>
<tr>
<th>Change category</th>
<th>Small municipalities</th>
<th>Medium municipalities</th>
<th>Large municipalities</th>
<th>Very large municipalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased demands on staff</td>
<td>23.4</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Increased citizen contact with elected/appointed officials</td>
<td>22.4</td>
<td>42.5</td>
<td>55.0</td>
<td>44.4</td>
</tr>
<tr>
<td>Changed role of staff</td>
<td>16.3</td>
<td>35.1</td>
<td>45.0</td>
<td>44.4</td>
</tr>
<tr>
<td>Business processes re-engineered</td>
<td>–</td>
<td>35.7</td>
<td>55.0</td>
<td>66.7</td>
</tr>
</tbody>
</table>

Source: ICMA (2002).

Figure 8.2 E-government budgetary process by size, USA (source: ICMA 2002).

Virginia Beach (Virginia), Conyers (Georgia), Scottsdale (Arizona), and Seattle (Washington) have been selected for inclusion in this chapter. Each jurisdiction has approached the e-government process in a unique manner, which provides evidence to the scalability and applicability of e-government in all sizes and forms of government. The demographics and characteristics of each jurisdiction are offered for comparative purposes, both within and outside of the United States.

Each of the selected case studies represents unique demographic and geographic characteristics. For example, Virginia Beach is located on the coast of the Atlantic Ocean,
while Seattle is located in the northwestern region of the United States. Conyers is located in the southeastern region while Scottsdale represents the southwestern area of the US. Beyond the geographical differences, the demographics of the case studies also vary. According to the 2000 US Census, the population of Virginia Beach is 425,257, with a median age of 32.7 years and a median household income of $48,705. Conversely, the population of Conyers is 10,689 with a median age of 30.4 years and a median household income of $35,789. In Scottsdale, the population is 202,750 with a median age of 41.0 and a median income of $57,484, according to the 2000 US Census. Seattle has a population of 563,374, with a median age of 35.4 and a median income of $45,738.

Small jurisdictions are defined as those that have less than 50,000 inhabitants; Conyers, GA, is the case study representative of this category. Medium jurisdictions have 50,000 to 249,999 inhabitants, reflected by Virginia Beach, VA. The large jurisdiction category contains populations of 250,000 to 49,999,000, represented by Scottsdale, AZ, while the very large category, represented by Seattle, WA, includes populations greater than 500,000. With a clear framework for understanding the current state of e-government in US municipalities, the following case studies will provide narrative and explanation of leading-edge practices in selected local governments.

Profiles of local e-government

Guiding principles and strategy

This section details the nascent stages of e-government for the selected case studies. It offers a glimpse into the history of the organization, provides an overview of the organizational culture, and outlines the goals associated with e-government for each jurisdiction.

Virginia Beach, Virginia

In March 2000, the Mayor of Virginia Beach, Meyera E. Oberndorf, established a special commission on e-government (http://www.vbgov.com/). The goal of the mayor was to quickly identify and form a committee to serve as the voice of the citizenry with respect to e-government initiatives. The committee formation was announced via press releases and city website postings. Interested citizens were encouraged to apply to serve on the advisory committee. Only Internet-based applications were accepted to ensure familiarity and comfort with the web. The application process lasted for two weeks and generated 65 interested participants. The application to serve included information on where the potential commissioner lived and why they thought they should serve on the commission. Additionally, some candidates submitted resumes to further demonstrate their capacity. The mayor and chief information officer (CIO) reviewed the applications and selected seven district representatives and four at-large representatives. The candidates were selected based on their qualifications; however, the selection also considered community leadership and previous governmental involvement. The resulting commission is diverse in terms of gender, ethnicity, age, technology expertise, and leadership in order to provide an accurate cross-sectional representation of the community. Furthermore,
according to David Sullivan, CIO of Virginia Beach, the city made a concerted effort to produce a politically balanced commission that includes advocates and opponents of the general governmental workings in order to ensure that the commission does not act as a rubber stamp for the mayor or City Council.

The role of the commission is to advise the mayor, City Council, and government departments on how to successfully identify and implement e-government projects that could enhance the governmental operations in Virginia Beach. The nature of the commission is purely advisory and their responsibilities include developing a strategic vision of the e-government initiative, researching and considering e-government technologies and applications for implementation, and increasing the knowledge base about e-government and its associated benefits and challenges. Furthermore, the commission is charged with soliciting citizen and business input into the design of the e-government plan of action. Networking within the community is the primary method employed by the commissioners to elicit citizen input. The commissioners represent a variety of stakeholders and use their contacts to meet with the groups and discuss e-government in face-to-face settings. The efforts have involved community, civic, and commercial groups. Additionally, surveys are circulated via the Virginia Beach website on a consistent basis. These surveys assess a variety of areas related to government services and allow another mechanism for citizen input. A citizen survey specifically related to e-government services has also been conducted and its results have helped set the agenda for the VBGov initiative. Finally, the website offers the opportunity for citizen input via a comment/suggestion form.

The commission meets bimonthly to discuss e-government strategy, share research on e-government, and listen to the requirements of citizens and businesses for the system design. The meetings have included guest speakers from other e-government agencies, brainstorming sessions on new technologies, and in-depth discussions on varied e-government topics. Recent agenda items have included e-mapping demonstrations, cable franchise agreements, inclusion of crime statistics on VBGov.com, legislative updates, and development of policies on issues such as public information access. Continual input, extensive research, and lengthy discussions have facilitated the work of the commission and fostered a unique commitment to the e-government model.

The commission has also developed comprehensive goals and measurable objectives for the e-government project. The full listing of the goals and objectives is available online at the Virginia Beach website (http://www.vbgov.com/). Table 8.3 demonstrates some of the key goals and objectives of the project.

The Commission originally projected all goals to be achieved by the end of 2002. However, due to several confounding factors, only 70 percent of the goals have been attained. One of the main causes for the minor delay in goal achievement involves business process re-engineering.

Conyers, Georgia

The leadership in Conyers, Georgia, developed a five-year technology plan in 1998. When the city hired Rebecca Woolcrot as manager, she promptly identified e-government as the future of Conyers government. In 1998, the city contracted with an application
service provider (ASP), to conduct a needs assessment of the city’s technology situation and to recommend an iterative approach to achieving e-government. Prior to this, the city had a static website presence but sought to incorporate more cutting-edge service offerings into their online carte du jour.

**Table 8.3 Excerpt of Virginia Beach e-government goals and objectives**

<table>
<thead>
<tr>
<th>Goal</th>
<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 24/7 accessibility of Virginia Beach government.</td>
<td>All public information will be available electronically, while maintaining privacy and confidentiality of individuals.</td>
<td>Kiosks and computers dedicated to e-government will be available to all citizens at no cost.</td>
<td>All services available electronically will allow for telephonic and computer input.</td>
</tr>
<tr>
<td>2. Government services and information will be delivered electronically.</td>
<td>One-stop shopping will offer a complete collection of city information and services.</td>
<td>Access to other government agencies will be available through the city’s portal.</td>
<td>Citizens will be notified of public business through web postings in a timely manner.</td>
</tr>
<tr>
<td>3. Virginia Beach government will be interactive.</td>
<td>The website will provide a vehicle for citizens to input ideas, frustrations, comments, and concerns for appropriate government consideration.</td>
<td>Departments will respond to citizen questions and problems in a timely manner.</td>
<td>Citizen participation and communication will increase.</td>
</tr>
</tbody>
</table>

Source: own presentation.

According to Ms. Woolcot, the role of government is to improve the quality of life for its citizens and, in her vision, technology is the means to the end. The contract with the ASP allowed the city of Conyers to develop a systematic approach to e-government, progressing from assessment to architecture implementation and culminating in the launch of e-government. The entire plan took approximately 18 months from start to finish. The overall goal is to provide any available government service in an electronic format and, eventually, to establish a paperless government.

Although Conyers did not implement formal advisory committees, the city manager feels that they do have strong city council and citizen support. Furthermore, the e-government vision includes continual marketing of the plan to encourage citizen attention and participation. As the city has gained state and national recognition for their e-government implementation, citizen input has increased, as has usage of the available applications.

**Scottsdale, Arizona**

Scottsdale has long been vested in the use of information technology to further enhance the efficiency and effectiveness of government. The main focus of the city’s e-government initiative is to leverage the capacity of technology and the Internet in order to better service the community. Furthermore, the city seeks to develop tools that enable
citizens and businesses to serve themselves in applicable areas. Finally, Scottsdale is committed to using technology as a new way to engage citizens and encourage participation. In outlining the overarching goals of the e-government initiative, Carder Hunt, CIO, also notes city objectives, including creating a virtual city hall, pushing efficiency, and reducing the current governmental fragmentation via technology.

In creating the e-government vision and its overarching technology plan, the city of Scottsdale is currently in the development phase. In 1992, the city hired an outside firm to create a technology plan, which led to the migration to an ATM client server network environment. Since then, the city has held annual summer retreats to revise the goals and objectives outlined in the 1992 plan. In May of 2001, the city contracted with another private company to create a strategic plan for technology. The plan includes an assessment of the current situation, as well as a five-year plan for implementation. The plan is currently being reviewed by the city prior to its finalization.

In addition to the strategic plan, Scottsdale has created a technology board to provide an advisory capacity to the IS department. The board consists of nine members, including two assistant city managers and department heads. This group also facilitates organizational ownership of the various e-government initiatives by lending executive support across traditionally stovepipe departments. The technology board also reviews ongoing projects to help mitigate potential failures or complications.

In terms of citizen input, Scottsdale has several innovative approaches to gathering feedback. Part of the due diligence for the development of the new technology strategic plan involved the use of focus groups. The consulting firm ran two focus groups to gain citizen input on what projects and topical areas should be undertaken in the e-government initiative. In addition, the city’s webmaster also ran independent focus groups to test out the new design for the city’s website, released in January 2003. Finally, Scottsdale seeks citizen input via its website, as well as in hard copy, on a continual basis. Clearly, the combination of internal oversight, outsourced planning, and citizen input creates a dynamic innovative environment with strong stakeholder support for the e-government initiative.

Seattle, Washington

Seattle, Washington, is located in a hotbed of technology, given its proximity to Microsoft and other leading technology corporations. Accordingly, information technology is part of the long-term development plans for the city. Given the pervasiveness of technology among the Seattle citizens, e-government was a logical progression for the jurisdiction.

In the mid 1990s, a middle manager with Seattle city government decided that the Internet should be used to engage the citizenry and disseminate information. The manager was employed in the Executive Services department, which came to house the first Seattle website, specific to the Executive Services department. Then, on the impetus of a council member, Seattle developed a citywide website that launched in 1995.

Following the initial web presence, the city decided to institute a “One Seattle” website policy, which mandated a common look and feel to the official city site. This decision also prompted the creation of a chief technology officer (CTO) and a Department of Information Technology, responsible for the implementation and
maintenance of the website. However, the desired standardization has occurred slowly, according to Seattle’s acting chief information officer, Sylvia Shiroyama. Currently, the individual departments produce the content for their portions of the city site; however, the IT department does handle content management for small departments.

In the past year, Seattle has undergone significant changes in its approach to e-government. A new governance structure was recently launched in order to ensure that the critical stakeholders are engaged in the move to e-government. There are two main bodies composing the new structure, the department information technology managers and the selected business representatives. This group offers guidance for the overall technology policies and decisions of the city. Additionally, the group has convened a web governance board, which is cross-departmental and cross-discipline in nature, in order to ensure that the website adequately represents the divergent interests in city government. Although citizens were not directly engaged in the development of Seattle’s website, they do have the opportunity to comment on the design, structure, and content through online comment forms.

Seattle offers another interesting beginning to e-government. The city began with grassroots implementation and has slowly progressed to a more centralized, strategic approach to e-government.

Each of the cases included in this study offers unique perspectives to the march toward e-government. There are various lessons to be learned from each jurisdiction; although one of the most critical lessons is that one size or approach does not fit all jurisdictions. Although many elements of the various cases presented are distinctive, some issues remain constant across all successful e-government initiatives—executive commitment is one such constant.

**Executive level support**

Executive commitment is the most frequently cited critical success factor for information technology projects. The Standish Group, the Harvard Policy Group, and various other researchers have noted the detrimental effects of lack of executive commitment. Northrop (2002) has ranked top management support as one of the most important lessons learned from her survey of public employees. In addition, Swiss (2003) has noted that top management involvement in public sector information technology projects is critical because of the need to manage trade-offs, such as information access and privacy. Finally, Norris (2003) notes that the most important of the main facilitating factors in technology adoption and innovation is the support of top officials.

Executive commitment involves more than verbal or financial support for a project. The manager must use technology and lead by example in order to foster an innovative information culture. The executives, both elected and appointed, in the following case studies demonstrate the commitment to and adoption of technology that makes their e-government initiatives primed for success.

**Virginia Beach, Virginia**

The major e-government champion has been Mayor Meyera E. Oberndorf. According to CIO David Sullivan, she carries the e-government banner and supplies the political vision
to the process. Additionally, City Manager James K. Spore is committed to improving the government’s business processes through the strategic application of technology. He provides the executive support required by the e-government initiative. Finally, CIO David Sullivan is the implementation champion. He heads the talented team that translates the commission’s vision into reality.

Another critical point to note is the consistency of the leadership in Virginia Beach. The mayor has been popularly elected for the last 13 years, while the city manager has been in place for eleven years. David Sullivan, CIO, has served the City of Virginia Beach for 28 years, in a variety of capacities. Finally, the City Council had been stable for the past 10 years; however, the most recent election saw significant turnover. Despite the change in council members, the support for e-government has only increased. The combination of support and leadership consistency will engender a greater likelihood of successful implementation and advancement of the e-government project.

Conyers, Georgia

As previously mentioned, e-government has been embraced as the new way of operating by all employees at the city of Conyers. In addition, the e-government plan has enjoyed continual support of the City Council. However, the true e-government champion of this jurisdiction is the city manager, Rebecca Woolcot. She brought the vision of using e-government as a catalyst for improving the lives of the citizenry to the forefront with her hiring in 1998. She has been instrumental in creating an enterprise approach to e-government that is rarely seen in other US jurisdictions. In addition, the ASP hired by the city has been key to e-government’s success. It has provided the iterative plan for implementation, as well as deployed the infrastructure, hardware, and software, which make Conyers’ e-government vision a reality.

The authority structure found in Conyers allowed for the city manager to rapidly implement her e-government vision in an enterprise approach. One of the advantages of this structure is the ability to centralize decision-making and improve coordination of information and resources. Another advantage to the centralized authority structure is the provision of direct accountability for the overall success of the initiative to the city manager’s office.

Scottsdale, Arizona

In Scottsdale, there are several e-government champions who foster the goals of the initiative and facilitate technological adoption. The primary champion is Carder Hunt, the CIO of Scottsdale. He is responsible for coordinating the overall enterprise approach of e-government, as well as servicing the individual needs of departments. Additionally, Mr. Hunt credits Scottsdale’s success to the department heads that diligently use technology solutions in their daily operations. For example, he cites the Financial Services department for their ability to leverage automation tools, which has led to such process efficiency gains that now requires only two employees to compile the city’s annual operating budget. Another example is the Water department, which uses intelligent objects in their field work, thereby reducing data entry to a single point.
The authority structure found in Scottsdale allows for the CIO and Information Systems (IS) department to set the e-government agenda for the enterprise, with the guidance and input of the various departments and the technology board. The seniority of the CIO engenders widespread support for his projects, which is clearly a necessary attribute of successful project implementation. This structure also centralizes decisionmaking and increases accountability for the initiative. However, the actual ownership of individual projects for specific departments pushes accountability for maintenance to the departmental level.

Seattle, Washington

The executive commitment to e-government in Seattle starts with Mayor Greg Nichols. According to the CIO, the mayor is a facilitator of technology and provides the goal alignment between technology projects and organizational objectives. He also offers clear statements of the organizational agenda, priorities, and services, which can readily be translated into action across departments.

In addition to the mayor’s support, the city of Seattle has enjoyed a long tradition of elected officials’ support, beginning with the launch of the citywide website in 1995. The support for the technological advancement of Seattle continues today with supportive officials who recognize the transformative power of technology. Various elected officials also offer further support by service on the IT governance board.

Finally, due to the decentralized nature of the city, the department heads offer significant commitment and support for technology investment. The CIO is instrumental in setting the vision for e-government for the city as an enterprise and should be considered one of the most critical executives in terms of support and commitment. Although the power is decentralized in Seattle, the CIO offers the concrete solutions in order to facilitate the vision implementation articulated by the mayor and council members.

It is evident that executive commitment and support is critical to the success of e-government initiatives. Although the case studies offer different perspectives on a similar theme, they all enjoy executive support. Regardless of organizational culture or level of technology centralization, these case studies bear witness to the fact that executive commitment must be present in order to develop successful, lasting technology initiatives. As the case studies progress into more detailed explanation of the current e-government strategies and offerings, it is important to recognize the foundational elements that underlie the successful, award-winning e-government sites.

Organizational, project and change management

This section details the formation of the e-government project plan and provides insight into the plan’s unfolding. The case studies offer various possibilities for other local governments seeking to implement e-government solutions. The cases selected are award-winning e-government jurisdictions, as well as diverse, unique jurisdictions, which provide a host of possibilities to other jurisdictions.
Virginia Beach, Virginia

The leadership for the e-government project in Virginia Beach is multifaceted. The mayor, several city commissioners, the special advisory commission, department heads, and the chief information officer are working together to implement the e-government plan. The structure is decentralized, although the power is concentrated within the elected officials (i.e., City Council and mayor) and the managerial leadership. All commission members have equal power within the group but, owing to their advisory nature, they only offer prescriptive suggestions to the City Council with respect to e-government projects. The CIO and his IT department are responsible for the successful implementation of the prescribed e-government plan and, subsequently, held accountable for demonstrating its utility and value-add. The CIO heads the Communications and Information Technology department and is a direct report to the city manager. Based on the extensive involvement of the elected commissioners, the solicitation of citizen and business input, and involvement of senior management within Virginia Beach, the e-government project appears to be well supported by all key stakeholders.

The overarching goal of Virginia Beach’s business process reengineering efforts involve reducing the number of steps (i.e., enhancing efficiency of process) for any given process, action, or procedure. The effort includes various stages, such as flow-charting existing processes, identifying areas of overlap and inefficiency, and then applying information technology solutions to streamline the approach. For example, one delay in goal attainment occurred when the vision of electronic payments took a back seat to redesigning the business processes in the Treasurer’s office.

Although the goal of offering online payment options was clearly defined by the commission, in flow-charting the existing process, the IT department found that the Treasurer’s office was still using a manual cashier system. So, instead of applying a web-enabled front-end to the existing manual system, they decided to automate the cashier system and then build the e-payment front-end. This decision created time delays in the goal attainment but it enabled the design and implementation of a seamless operation that fosters the time and cost savings associated with e-government.

Clearly, this example identifies the change and impact of business process reengineering through the application of e-government.

Conyers, Georgia

The leadership for the e-government initiative stemmed from the development of the technology plan in 1998. Essentially, the city manager developed the e-government vision, presented it to the City Council for their approval, and outsourced the design and implementation to an application service provider (ASP). However, as the vision has been implemented, Conyers’ city employees have thoroughly embraced the concept and readily established its permanence, according to Ms. Woolcot. As mentioned earlier, the real accountability for the e-government initiative’s success lies within the city manager’s office. This centralization of accountability and power has facilitated the enterprise-wide deployment of e-government. Key stakeholders, including the citizenry, elected officials,
and staff members, support the city’s e-government initiative, which also increases its likelihood of success.

**Scottsdale, Arizona**

The leadership for Scottsdale e-government primarily resides in the technology board. The board, the chief information officer (CIO), and the information systems (IS) staff work together to implement the e-government plan. The majority of the power is concentrated within the elected officials (i.e. City Council and mayor) and the managerial leadership, particularly the CIO. All technology board members provide overview of the e-government initiative and create an enterprise approach to deployment. The CIO and his IS department are responsible for the successful implementation of the prescribed e-government plan and, subsequently, held accountable for demonstrating its utility and value-add. However, the IS department does not provide for the daily operations of the e-government applications developed for specific departments. This makes the individual departments more accountable for the use, and subsequent success, of the information technology applications. Based on the support of the elected officials, the solicitation of citizen and business input, and involvement of senior management within Scottsdale, it appears that the key stakeholders support the city’s e-government initiative.

**Seattle, Washington**

As previously mentioned, the legacy of information technology in Seattle is decentralization. Currently, the jurisdiction has an IT department and CIO, who offer a common infrastructure, hardware, and software, as well as application-specific support. However, the majority of departments also have internal IT staff to provide for the daily technology needs. Accordingly, the leadership for the e-government initiative was equally decentralized in the beginning.

Although Seattle began with a grassroots approach to e-government, they have made serious strides in the direction of centralization, particularly in the form of oversight and public appearance. The city is currently developing a strategic plan in order to more successfully scan the landscape and plan for technological innovation. In addition, with the inception of the IT oversight structure, the CIO expects more centralization and enterprise-wide development to occur in the realm of e-government.

As illustrated by the case studies, there are numerous approaches to designing an e-government plan and crafting the leadership team. However, the role of executive support still retains its critical function in these initial stages of design and implementation. As we turn to an overview of e-government applications and offerings, the focus shifts to the skills and savvy of the CIO and IT staff, which are responsible for product deployment.

**Applications**

**E-services and e-democracy applications**

Following the overview of the leadership commitment and the organization of the project, the case studies now turn to deployed e-government applications. These
applications provide the functionality and convenience commonly associated with e-government to citizens and business partners alike.

**Virginia Beach, Virginia**

In addition to the development of clear goals and objectives, the commission has committed to developing an e-government system that is compatible with, builds upon, and supports the e-government initiatives of the county and the state. Virginia Beach is committed to both vertical and horizontal integration of technology and government services. For example, the first transactional application, online parking ticket payments, was created in conjunction with VIPNet, the state agency that assists other Virginia government entities in providing information services via the Internet, as well as manages the official state portal. The application was jointly funded by the city of Virginia Beach and the state of Virginia. It runs on the state portal and transactions are encrypted with NOVA/VIA KLIX technology. Additionally, all credit card information is transmitted from VIPNet’s application servers using Secure Sockets Layer (https) with 128 bit encryption. The application is available to other Virginia local governments to use, although no jurisdiction is currently taking advantage of the opportunity.

Another jointly developed project is currently underway. It will allow electronic payment of violations. The project is an effort of Virginia Beach, the state Supreme Court, and VIPNet. The system requirements have been developed by Virginia Beach and development is being conducted at the state level. This project will also be rolled out to the other jurisdictions in Virginia. The state has completely funded this effort. More interjurisdictional work has occurred between the state of Virginia, Fairfax County, and Virginia Beach, including the establishment of an online repository of government information based on a citizen-centric taxonomy.

Virginia Beach has a variety of applications and services offered to citizens and businesses via the e-government portal. There are several categories of services provided on the VBGov.com website. Two types of online credit card transactions are offered: eTickets allows for the payment of parking tickets online and EZReg allows online payment for Parks and Recreation classes online. There are several options for keeping informed about government activities. eStream offers streaming media of Virginia Beach government meetings, including live broadcasts of City Council meetings. VBM@IL provides a customizable electronic newsletter subscription. Web chats with the mayor are also offered. The Interactive Citizen Services Guide provides essential contact information for various government services. Leisure services, such as Vbfun.com, offer trip planning assistance via the Internet. Business services include posting of current bids and requests for proposals, online planning commission agendas, and online real estate assessment searches. Extensive library services are offered via the Virginia Beach portal, including an online catalog search. Finally, the portal offers several methods for generating citizen participation. It presents the opportunity to report problems in specific areas, allows for special service requests, and provides online surveys for citizen completion. Overall, the VBGov portal provides high levels of functionality and service accessibility.

In assessing the e-government project of Virginia Beach, survey data collected by the International City/County Managers Association (ICMA) offers richer information and is
used to further expand the narrative. The survey data is self-reported by the City of Virginia Beach and was collected during the spring of 2002. According to the data provided, the City of Virginia Beach’s IT department is primarily responsible for the daily management of the city website. The Virginia Beach IT department is resource-rich with over 50 full-time equivalent employees. This level of resource commitment is found in only 4.6 percent of the survey respondents.

**Conyers, Georgia**

The goal of Conyers’ e-government vision is to transform the government into a paperless environment where technology supports and improves the quality of the life of its citizens. The current menu of e-government services provided by Conyers is almost reflective of the array of services the city provides through its City Hall. The rapid deployment of the assorted services was enabled by the use of the application service provider (ASP) model, which had previously defined offerings in place.

To further expand the narrative on e-services for Conyers, survey data collected by the International City/County Managers Association (ICMA) is used. The survey data is self-reported by the municipality of Conyers and was collected during the spring of 2002. According to the data provided, Conyers does have an IT department that is primarily responsible for the daily management of the city website. The IT department consists of between one and five employees, which is similar in size to more than half (61.8 percent) of other US local government IT departments.

According to the data contained in the 2002 ICMA survey, Conyers offers a variety of services online. The list of offered services rectifies with the previous content analysis of the Conyers portal. Both lists include online payment of taxes, utility bills, fines and fees, online completion and submission of permit applications, online requests for government records, online requests for services, and downloadable forms. However, the City of Conyers does not currently offer but plan to offer online completion and submission of permit applications, online delivery of local government records, and online property registration. Additionally, Conyers neither offers nor plans to offer online registration for use of recreational facilities, online voter registration, and online communication with individual elected and appointed officials. For those services offered in a web-based format, the city also offers a paper option and payment by mail or in person.

Conyers offers a host of online services via its ASP. The website utilizes digital signatures to offer citizens the option of creating their own personal account, which resembles a customized portal. The city ordinances, City Council meeting agendas and minutes, and committee meeting agendas and minutes are offered online in html format. City news is posted online for information dissemination. Other non-transactional offerings include city presentations, listings of community events, and searchable archives of police records, including accident reports, incident reports, fines, and citations. In terms of transaction-based offerings, Conyers has tax payment, security alert bill payment, permit application submissions, and requests for service available. Conyers does not offer services that have been jointly created with other jurisdictions, local, state, or federal.
Scottsdale, Arizona

Included in the variety of e-government offerings available on the Scottsdale website, the city is also committed to using e-government to improve back-end processes and facilitate the streamlining of governmental workflows. For example, the city has developed a community development system, which provides cradle-to-grave coverage of the permitting process. The city used work-flow charting to define the steps in the manual permitting process and the IS department created a web-based system which could provide enhanced utility. The community development system, as the project is called, involved the coordination of four departments. It has provided citizens, businesses, and government employees with the ability to track permitting progress. In addition to reducing the number of steps involved in the permitting process, the system also reduces error and oversight on the part of government employees. The community development system is just one example of the innovative internal applications developed by the city of Scottsdale. In addition, the city has deployed several government to citizen (G2C) and government to business (G2B) applications on its website.

In assessing the e-government project of Scottsdale, survey data collected by the International City/County Managers Association (ICMA) is also used. The survey data is self-reported by the municipality and was collected during the spring of 2002. According to the data provided, Scottsdale does have an IT department that is primarily responsible for the daily management of the city website. The IT department consists of over 50 employees, which is larger than approximately 95 percent of other local government IT departments.

According to the data contained in the 2002 ICMA survey, Scottsdale offers a variety of services online. The list of offered services rectifies with the previous content analysis of the municipal portal. Both lists include online payment of utility bills and fines and fees, online completion and submission of permit applications, online requests for services, online registration for use of recreational facilities, downloadable forms, and online communication with individually elected and appointed officials. Scottsdale offers a comprehensive, targeted list of specific problems and service requests, including topical areas such as code and zoning violations, parks and facilities maintenance, environmental management issues, streets and traffic signal maintenance, traffic engineering and parking issues, recycling/refuse container repairs, abuse of city equipment, and water leaks. The city also uses digital signatures internally for cellular phone authorizations but has not deployed this technology for external applications.

The city of Scottsdale does not currently offer but plans to offer online voter registration. Additionally, Scottsdale does not offer online payment of taxes, online completion and submission of business license applications/renewals, online requests for local government records, online delivery of local government records, and online property registration. For those services offered in a web-based format, the city also offers a paper option and payment by mail or in person. Scottsdale does not offer services that have been jointly created with other jurisdictions, local, state, or federal.
Seattle, Washington

In assessing the e-government project of Seattle, a detailed interview with the CIO, Sylvia Shiroyama, was conducted, in addition to a review of the city’s website. The city did not participate in the International City and County Managers Association’s E-Government Survey of 2002, so that information is not included for this case study. However, the information collected offers a holistic view of the breadth and depth of the organizational offerings.

Although the development of their website began in a decentralized, grassroots fashion, the city of Seattle is also committed to using e-government to work-flow processes. Some of the main features of the e-government site include major re-engineering of basic business systems as they become automated and web-enabled. As the city offers more online transactional services, it re-thinks and re-engineers more processes in order to make the most efficient use of the available technologies, according to CIO, Sylvia Shiroyama.

The city has recently deployed several government to citizen (G2C), government to business (G2B), and government to employee (G2E) applications on its website. Current transactional offerings in Seattle include online payment of parking tickets, online mapping systems, customer relationship management software, citizen contact tracking, online versions of the city directory, events calendar, utility bill payment, and an adjunct site with the city’s TV channel http://www.seattlechannel.org/. For those services offered in a web-based format, the city also offers a paper option and payment by mail or in person.

According to Sylvia Shiroyama, approximately 90 percent of the transactional applications are developed in-house. The design philosophy is a hybrid of traditional departmental offerings and a user group portal. Through the oversight of the IT governance board, Seattle will begin to produce more transactional offerings, including an online permitting system that was originally outsourced but has failed to be delivered.

Currently, the city does not use digital signatures for internal or external applications.

The city of Seattle does not currently offer online voter registration or online tax payments. Additionally, the city does not offer online completion and submission of business license applications/renewals, online request and delivery of local government records, and online property registration. However, many of these transactions are being discussed as Seattle moves forward with its e-government vision. Finally, Seattle does not currently offer services that have been jointly created with other jurisdictions, local, state, or federal.

Clearly, there are myriad selections and offerings for an e-government menu. The case studies begin to scratch the surface and provide an overview of the most commonly developed applications. However, part of assessing which applications to develop entails the creation of a business case, complete with an assessment of costs and benefits. The next section of this study examines how the selected cases justify their application decisions.
Costs and benefits

Virginia Beach, Virginia

In assessing the design and implementation of the e-government initiative in Virginia Beach, it is interesting to note the key barriers faced by the city. Issues related to convenience fees for online transactions, lack of departmental collaboration, difficulty in justifying the return on investment, and issues regarding privacy and security were listed as the major barriers faced by Virginia Beach in the ICMA survey. According to David Sullivan, CIO of Virginia Beach, the main problem with convenience fees for online transactions involves the commission’s stance that fees should not be assessed; however, the parking ticket companies are unwilling to incur the costs of accepting credit-card transactions, so fees must be used. However, the Parks and Recreation department, which has the most used online transactions, does not charge convenience fees, because they feel that their time savings and reduction of non-value-add work compensates for the credit-card transaction costs. The lack of departmental coordination is evidenced by the existence of traditional stovepipe approaches to application development. However, the city is working to create a more unified platform to support its citizen services.

The biggest problem faced by the CIO is the difficulty in justifying the return on investment. The time and money savings that occur as a result of e-government projects are redistributed within the department and are not captured on an enterprise level. The CIO and his team are currently working on creating benchmarks to measure future progress. The issues of privacy and security are similar to those faced by other local, state, and federal governments. The e-government commission has developed a policy to disallow the online presentation of individually identifiable information. Although this information is available via other means of public records, the sentiment that the Internet is somehow more public than the town hall has influenced the commission’s decision. Finally, in the post-9/11 world, security is a paramount concern. The IT department has spent considerable resources on ensuring the integrity of the infrastructure and support systems for the city. Virginia Beach has a security officer on staff and has implemented partner networks with segregated traffic to ensure the security of city data.

The ICMA survey also indicates that the e-government initiative has caused significant changes in the Virginia Beach government. These changes include changed roles of staff, reduced time demands on staff, increased citizen contact with elected and appointed officials, reengineering of business process, and reduction of administrative costs. The overarching theme for Virginia Beach government is customer service. One of the main changes resulting from the e-government initiative is transitioning the citizen-centric focus to web-based services. This has been instilled in the city employees by requiring usage of the city intranet by all employees. The enterprise approach to technology fosters the sense of community and promotes ubiquitous responsibility for the website. Furthermore, all government employees receive extensive training in desktop computing to foster confidence and understanding of the technologies.

Certainly, the power of email has changed communication patterns for most governments. Virginia Beach realized the power of this new medium during a recent expansion effort by the Virginia Marine Science Museum, a city-funded service. The
museum sought to add a marine mammal exhibit to its repertoire, which created serious backlash from all reaches of the world. Within a span of three days, the mayor received over 1,000 emails voicing serious disapproval for the exhibit. Additionally, the City Council members estimate that they receive between 30 and 50 emails daily. The re-engineering of business processes has previously been described but it is important to note the commitment of Virginia Beach to investing in the proper infrastructure and back-end supports for front-end citizen services. Based on the goals and objectives of the e-government project, as outlined by the advisory committee, there is congruence between many of the changes resulting from the initiative and its projected outcomes.

**Conyers, Georgia**

According to the city manager, Conyers has not faced many barriers in the implementation of its e-government vision. In part, the centralized authority structure in place in Conyers aids the city in its enterprise deployment of e-government. Additionally, the smaller size of the jurisdiction has facilitated interdepartmental coordination and information sharing. Ms. Woolcot, the city manager, notes the strong staff adoption of the e-government vision and their commitment to furthering its reach. For example, the city has received several grants in the past few years as a direct result of individual employees researching opportunities, without direction from the leadership, and applying for funding. Additionally, Ms. Woolcot feels that the extension of Internet access to all employees further heightens their commitment to the project, as well as expanding the intellectual capacity of the jurisdiction.

The ICMA survey also indicates that the e-government initiative has caused significant changes in the Conyers government. These changes include reduced time demands on staff, re-engineering of business process, improvement of business process efficiencies, and reduction of administrative costs. In terms of reduced time demand on staff, the city employees have consistently charted work-flow processes and used technology to reduce steps and overlaps in actions. This work-flow charting also feeds into the business process re-engineering by creating a conscious awareness of existing practices and a goal of refining and revising the processes in order to create efficiency gains. Finally, reduction of administrative costs has occurred throughout the course of e-government implementation. The city manager notes that the major savings have been realized in staff positions, which are vacated due to normal attrition but do not have to be replaced. Although cost savings have been realized, the money is not wasted; instead the city redirects the funds to direct service in order to improve the quality of life for the citizens of Conyers. For example, the city has not implemented tax increases in several years but they have used the lapsed salary funds to create new parks and recreation programs, as well as to develop new parks.

**Scottsdale, Arizona**

The key barriers to the design and implementation of the e-government initiative in Scottsdale provide unique insight into the process. Lack of departmental collaboration, issues regarding privacy and security, lack of financial resources, and staff resistance to change were listed as the major barriers faced by Scottsdale in the ICMA survey.
However, according to Carder Hunt, CIO of Scottsdale, many of these barriers have been addressed. The lack of collaboration between departments has been eroded by cross-departmental projects. One example is the community development system (CDS), which offers a cradle-to-grave approach for the entire permitting process. This initiative came at the behest of four departments involved in the various stages of the permitting lifecycle. As a result of success of CDS, many departmental turf issues are being replaced with collaborative system designs.

Privacy and security are consistently listed as barriers to e-government. These issues are salient but with improvements in encryption and security tools, the concerns should become less of a hindrance. However, it is important to note that in the post-9/11 era, security has become a paramount concern for all government. According to the 2002 ICMA survey, Scottsdale indicates that they will incur additional expenditures for new network security equipment and services, as well as making major changes to existing security processes and practices to address issues associated with post-9/11 concerns.

The final two barriers listed by the city of Scottsdale are lack of financial resources and staff resistance to change. In terms of financial resources, the budgetary crises that have plagued the American state and local governments in the new millennium certainly limit government spending on innovative information technology projects. However, with demonstrated utility and strong measures of successful return on investment, Scottsdale is able to persevere with its mission-critical deployments. Finally, staff resistance to change has been addressed by business process re-engineering according to Mr. Hunt.

Through the work-flow process mapping that occurs in the reengineering process, the staff become owners of their new systems, which in turn, reduces the resistance to change. This approach of incorporating the end user in the design phase is central to good project management and has alleviated resistance issues in Scottsdale.

The ICMA survey also indicates that the e-government initiative has caused significant changes in the Scottsdale government. These changes include changed roles of staff, reduced time demands on staff, re-engineering of business process, improvement of business process efficiencies, and reduction of administrative costs. According to the CIO, Carder Hunt, the efficiency gains of the e-government initiative are one of the most critical changes associated with the project. However, he notes that during the initial deployment of e-government projects, parallel processes are often running, which can actually lead to decreases in efficiency and cost-savings in the interim. In terms of reducing time demands on staff, Mr. Hunt sees e-government as a mechanism for leveraging the capacity of the staff members. By improving efficiency, reducing the rate of errors, and increasing the available time of staff, more innovation can occur. This translates into improved quality of governmental services for the citizenry. Clearly, the reduction of costs occurs through the improved efficiency of staff, streamlined work-flow process enabled by technology, reduction of human errors, and leveraging the expanding capacity of the collective knowledge base found in Scottsdale’s government.

Seattle, Washington

As previously mentioned, the Seattle technology culture is primarily decentralized. Although this allowed for creative, grassroots development in the nascent stages,
currently it creates problems for the enterprise vision of e-government. According to Sylvia Shiroyama, CIO of Seattle, the city faces several barriers to e-government success. Although the IT department provides a common infrastructure, some departments maintain unique hardware and software, which limits the integration of applications on an enterprise-wide basis. In addition, the CIO notes that the lack of supporting applications for the various departments is also a barrier. Other barriers include the lack of departmental collaboration, which is currently being resolved through the new IT governance structure; issues regarding privacy and security; and lack of financial resources, due to budgetary constraints. Although the CIO has identified several barriers, she also notes that the move toward a centralized, formalized institution will provide the necessary standards, interoperable systems, and collaboration to overcome the challenges.

According to Sylvia Shiroyama, the e-government initiative has also caused significant changes in Seattle’s government. These changes include reduced time demands on staff, re-engineering of business process, reduction of administrative costs, limited examples of increased revenue, and increased citizen contact with elected officials. According to the CIO, the re-engineering of current business processes is one of the most critical changes associated with e-government initiative. In terms of reducing time demands on staff, Sylvia Shiroyama views e-government as an opportunity to refocus the energy of the staff toward mission-critical services. In essence, by providing information and service delivery via the Internet, the employees of Seattle field fewer phone calls and walk-in inquiries, therefore allocating more time to the individuals who do seek assistance. Furthermore, by improving efficiency, reducing the rate of errors, and increasing the available time of staff, the power of innovation becomes more tangible. This translates into improved quality of governmental services for the citizenry.

As previously demonstrated, the power of e-government is both daunting and exciting. There are a host of challenges associated with successful implementation of applications. In addition to navigating the challenges of e-government, jurisdictions must be prepared to manage the internal changes that result from e-government. Based on the aforementioned studies, it is evident that digital government is more about politics, organizational structure, motivation, and human factors than code and computers. As such, the development of grounded, practical approaches for involving, engaging, and mitigating the human components of information technology is essential for project success. However, the technology associated with e-government must also be correctly specified in order to achieve the desired outcomes of such initiatives.

**Technical infrastructure**

The infrastructure and capacity of a local government is critical to the deployment of e-government. In this section, an overview of the jurisdictional competencies is provided in order to assist other local governments in developing their core infrastructure specific to their interests and abilities.

**Virginia Beach, Virginia**

In terms of the technical architecture and applications utilized in Virginia Beach, the city has robust capacities. For example, nearly every employee has access to a personal
computer and the time management system is deployed via the city network. Additionally, Virginia Beach has recently implemented Vignette, a content management system that has fundamentally altered the website design and work-flow processes of the city. Another area of technical capacity is in the security of the available transactions. For instance, Virginia Beach’s first transactional application, online parking ticket payments, runs on the state portal, and transactions are encrypted with NOVA/VIA KLIX technology. Additionally, all credit card information is transmitted from VIPNet’s application servers using Secure Sockets Layer (https) with 128 bit encryption. Finally, in terms of public access, Virginia Beach offers an assortment of public access sites for citizens to utilize the e-government applications. However, public kiosks are not currently in place.

Conyers, Georgia

The technical architecture in Conyers, Georgia, is also robust for a city of comparable size. T-1 lines are deployed throughout the City Hall complex and wireless is in use in the field. In terms of employee access to PCs, almost all 130 employees have desktop or laptop computers. Furthermore, all police officers have mobile data terminals in their patrol cars. Additionally, the city is currently reviewing new software packages to put their time management system online. In terms of the security of online transactions, the city uses an application service provider to house their services. This allows the city to have less concern over security and encryption while still retaining the same functionality of online transactions. Additional enterprise applications include the pending deployment of a document management system that will further improve the work-flow processes of the city employees and allow for data sharing and integration. Finally, public access to Conyers e-government offerings is available through public access sites, such as schools and public libraries. However, public kiosks have not been deployed.

Scottsdale, Arizona

In Scottsdale, the technical architecture is managed by the CIO and the IS department. The city uses fiber within its governmental campuses, including two local area networks (LANs), and has a wide area network (WAN) to connect three remote sites. Currently, the IS department is building wireless applications, including systems for the Water department and permitting. In terms of employee to PC ratios, Scottsdale has approximately 2,200 full-time equivalents and personal computers on approximately 2,000 desktops. In addition, the city has 370 laptops, with 150 located in the police department. All employees use email and the time reporting system is web-based. Finally, public access to Scottsdale e-government offerings is available through public access sites, such as schools and public libraries. However, public kiosks have not been deployed.

Seattle, Washington

The CIO and the IT department manage the technical architecture and infrastructure in Seattle. Based on the foresight of a government employee, the city created an ordinance
that required all service providers who laid fiber or cable in the city to allow the city to lay fiber simultaneously. This has created an internal private network, including a local area network (LAN). The fiber core allows Internet access to all employees of Seattle.

In terms of employee to PC ratios, Seattle has approximately 90 percent coverage of PCs to employees. However, all employees have access to email and the intranet. In addition, the city’s police department has deployed ruggedized laptops for all field officers. In terms of public access, the city is currently constructing a new City Hall, which will house a public kiosk. Other public access sites in Seattle are available through schools and libraries.

The case studies offer a high-level overview of the technology infrastructure and capacity of the jurisdictions. Consistent with the main premise of this chapter, that one size does not fit all, each municipality has created a unique infrastructure that houses their e-government initiatives. Moving beyond the technology, it is important to consider the human factors associated with technology implementation. One of the most critical factors in managing the human component is the use of quality training, which is the subject of the next section.

E-skilling

High-quality end-user training is central to the adoption of the technology in the workplace. However, many studies have indicated that little attention is given to this success factor in the public or private sectors. Although the public sector places strong emphasis on employee credentials, this focus is typically limited to the developers and specialists in information technology. Northrop (2002) notes that training is critical to the ongoing success of a project and it should be budgeted for and included as a mechanism for continual feedback and support. The case studies presented in this chapter offer best practices in terms of training. Each jurisdiction has formalized training procedures that have increased technology adoption rates and improved end-user confidence.

Virginia Beach, Virginia

Virginia Beach offers an integrated information technology training program for its employees. The training focuses primarily on desktop applications (i.e. Microsoft Office); however the new content management system, Vignette, recently implemented has created a designated page master within each functional department. The approximately 40 departmental page masters receive more extensive training in content deployment, maintenance, and expiration. As the city begins to roll out its next generation of VBGov, the training is expected to increase in terms of document management and service integration.

Conyers, Georgia

Conyers is committed to training its employees in various technology applications. Historically, the city has outsourced its training component to private vendors. However, Conyers has recently installed a training room in the City Hall complex with ten terminals. This room will allow for in-house training on standardized versions of the
Microsoft Office suite, as well as iterative training opportunities for new enterprise applications, such as the forthcoming document management system.

Scottsdale, Arizona

Scottsdale offers various training opportunities to its employees. Often, the e-government projects designed by the IS department are intuitive in nature, so only initial training is required. However, the city offers a variety of professional development opportunities, both in-house and à la carte outsourced options. Currently, Scottsdale uses computer-based training (CBT) as one method of development. Additionally, the intranet is utilized for internal training opportunities. Finally, Scottsdale University offers a variety of courses, which can be taken by city employees with governmental reimbursement.

Seattle, Washington

Seattle offers an assortment of training options for its governmental employees. Training housed under the IT department and CIO is targeted toward improving the skill set of the jurisdiction’s technologists. In addition, the personnel department handles end-user training for various applications and software packages. Currently, web training for all departments is one offering that allows the designated department liaison to learn to create and manage the content of the department’s homepage. Furthermore, the recent introduction of web content management tools has included an online training component. Finally, according to CIO, Sylvia Shiroyama, there is an abundance of informal training that occurs within communities of practice, both within and across departmental lines.

Each jurisdiction offers a different approach to end-user training and assistance. However, the CIOs in the case studies recognize the importance of training, particularly for encouraging technology adoption and usage. Accordingly, they allocate monetary resources and staff time to training endeavors. However, prior to the provision of training or even the development of the application, it is critical to understand the needs of the end user. The following section details how each jurisdiction ensures that end user requirements are understood and built into e-government applications.

Creation of acceptance through end-user involvement

Although stakeholder involvement, including end users, is critical to the success of information technology initiatives, the various opposing stakeholders in the public sector make their involvement tenuous at best. According to Reed (2001), the variety of stakeholder groups in the public sector makes it difficult to include an appropriate subsection and still maintain order and focus on the task at hand, namely the information technology project. Similarly, Brown (2003) has noted the relative paucity of research concerning stakeholder involvement in public sector information technology projects. In her work, Brown has found that although stakeholders are critical to the success of projects according to state CIOs, they are not actively engaged in the decision-making processes surrounding the IT projects (Brown 2003). Furthermore, the conflict and complexity of stakeholder engagement lead to reduced engagement on the part of the
public sector CIOs. However, these case studies offer examples of how to engage stakeholders, particularly end users, in order to reduce the likelihood of project failure.

**Virginia Beach, Virginia**

As previously mentioned, citizen input is central to the development of the Virginia Beach e-government plan. The city has conducted a citizen survey to assess which services citizens and businesses want. According to the survey, the most commonly requested services by Virginia Beach respondents are online service requests, financial transactions, registration for community events, and complaints. Based on the overview of services currently offered on the VBGov portal, these citizen and business indications appear to have driven service selection by the commission.

Beyond the citizen survey, citizen participation and input is encouraged in a variety of other manners. The city has a citizen advisory committee that guides its e-government initiative and provides a sounding board for citizen concerns. The members of the advisory committee present the e-government vision and projects to groups within the city and solicit their feedback. Finally, the city uses feedback forms on its website to gather citizen input about the services offered, formats used, and suggestions for other offerings.

**Conyers, Georgia**

According to the 2002 ICMA E-Government Survey, the city of Conyers has not conducted a citizen survey to determine the focus of their e-government efforts. However, citizen concerns were included in the development of the technology plan, which laid the groundwork for the e-government plan. In addition, Conyers uses feedback forms on its website to gather citizen input about the services offered, as well as suggestions for other offerings. The feedback form is enabled with a tracking system that generates an automated response to the citizen, as well as provides a continual monitoring opportunity.

**Scottsdale, Arizona**

Citizen input is central to the development of the Scottsdale e-government plan. The city has conducted a citizen survey to assess which services citizens and businesses want. According to the survey, the most commonly requested services by Scottsdale respondents are online service requests, financial transactions, and registration for community events. Based on the overview of services currently offered on the Scottsdale portal, these citizen and business indications appear to have driven service selection by the government.

**Seattle, Washington**

According to Sylvia Shiroyama, CIO of Seattle, the city has not conducted an official citizen survey to determine the focus of their e-government efforts. However, citizen concerns are collected through the website feedback form, as well as through issue-
specific web-based surveys offered on the city’s website. Furthermore, the city monitors and tracks the website hits in order to assess their performance levels and satisfaction of citizens. Finally, the city’s TV channel website (http://www.seattlechannel.org/) does have a Citizen Advisory Committee, which provides direction on website content and design. The city uses this group as a guide in the development of the official jurisdictional site, as well as for the TV channel site.

Identifying user needs and engaging stakeholders in the design and implementation of e-government initiatives is critical. Each of the jurisdictions offers a different approach to stakeholder and end-user involvement, based on their specific organizational and jurisdictional culture. Beyond the need for stakeholder involvement in specifying requirements and design issues, stakeholders must also be engaged in the ongoing care and feeding of the e-government initiative. The following section outlines the various partnerships and arrangements that provide the continued support for the e-government initiatives of Virginia Beach, Conyers, Scottsdale, and Seattle.

**Partnership and cooperation**

**Virginia Beach, Virginia**

The majority of e-government services offered by Virginia Beach are developed in-house by local government staff, outsourced to application service providers (ASPs), or purchased from IT vendors and integrated into the governmental databases. The city currently provides the majority of services and applications offered on the portal. The city hosts the website in-house, handles website design, manages website operation and maintenance, and integrates the website with governmental databases. Additionally, the city offers a variety of online procurement options to its departments, including review of property and/or liability insurance online and review and purchase of equipment and office supplies online. The city also utilizes geographic information systems (GIS) to create maps and spatially represent data. These maps are available online to citizens and businesses at no cost.

In terms of governmental policy and procedures regarding the website, Virginia Beach has limited restrictions. The city does have policies on website privacy and security; however, it does not offer web options for visually impaired users or language translation capabilities. Additionally, the city does not allow paid advertising on its website.

Virginia Beach does have an intranet for its governmental employees. The intranet is used in several capacities, including provision of news and information, publishing documents and manuals online, posting job openings, provision of employee benefit forms, online report generation, online procurement tools, virtual collaboration, and expansion of access and data to telecommuting staff. The only topical area offered by the ICMA survey that is not currently used in the Virginia Beach intranet is online training provision.

The final concern of the ICMA survey data involves the financing of the e-government initiative. Virginia Beach employs a separate budget item for e-government, which is developed and submitted by the IT department. The budget exceeds $100,000 annually. In preparing the budget request, Virginia Beach typically estimates most of the costs for
e-government. Finally, the current e-government efforts in Virginia Beach are funded primarily through transaction fees for services provided and general revenues.

**Conyers, Georgia**

The majority of e-government services offered by Conyers are developed in-house by local government staff, developed by consultants and local government staff, outsourced to application service providers (ASPs), or purchased from IT vendors and integrated into the governmental databases. The city currently uses an ASP to provide the majority of services and applications offered on the portal. The city outsources website hosting, design, operations and maintenance, and database integration to the ASP. Currently, Conyers does not offer any online procurement options to its departments. Furthermore, the city does not utilize geographic information systems (GIS) to create maps and spatially represent data.

In terms of governmental policy and procedures regarding the website, Conyers has limited restrictions. The city does have policies on website privacy and security; however, it does not offer web options for visually impaired users or language translation capabilities. Additionally, the city does not allow paid advertising on its website.

Conyers does have an intranet for its governmental employees. Currently, the intranet is not being used for transactional capacities. However, Conyers does plan to offer document and manual publication, job postings, form postings, online report generation, online procurement tools, and virtual collaboration in the future.

The final concern of the ICMA survey data involves the financing of the e-government initiative. Conyers employs a separate budget item for e-government, which is developed and submitted by the IT department. The budget is between $10,000 and $25,000 annually. In preparing the budget request, Conyers typically uses IT vendors to generate cost estimates. Finally, the current e-government efforts in Conyers are funded primarily through general revenues.

**Scottsdale, Arizona**

Most e-government services offered by Scottsdale are developed in-house by local government staff, developed by consultants and local government staff, or purchased from IT vendors and integrated into the governmental databases. The city currently provides the majority of services and applications offered on the portal. The city hosts the website in-house, handles website design, manages website operation and maintenance, and integrates the website with governmental databases. Additionally, the city offers a variety of online procurement options to its departments, including review of equipment and office supplies online. However, Scottsdale does not offer online purchasing. The city also utilizes geographic information systems (GIS) to create maps and spatially represent data. These maps are available online to citizens and businesses at no cost.

In terms of governmental policy and procedures regarding the website, Scottsdale has limited restrictions. The city does have policies on website privacy and security; however, it does not offer web options for visually impaired users or language translation capabilities. Additionally, the city does allow paid advertising on its website.
Scottsdale does have an intranet for its governmental employees. The intranet is used in several capacities, including provision of news and information, publishing documents and manuals online, posting job openings, provision of employee benefit forms, online report generation, online procurement tools, virtual collaboration, expansion of access and data to telecommuting staff, and provision of online training.

The final concern of the ICMA survey data involves the financing of the e-government initiative. Scottsdale does not employ a separate budget item for e-government. In preparing the budget request, Scottsdale uses cost information from IT vendors, cost information from other local governments, and in-house calculations to estimate total costs. Finally, the current e-government efforts in Scottsdale are funded primarily through federal or state grants, municipal bond financing, and general revenues.

Seattle, Washington

Local government staff develop approximately 90 percent of the e-government services offered by Seattle, with the remaining 10 percent outsourced to vendors. The city hosts the website in-house, handles website design, manages website operation and maintenance, and integrates the website with governmental databases. Additionally, the city utilizes geographic information systems (GIS) to create maps and spatially represent data. These maps are available online to citizens and businesses at no cost. Seattle’s IT department hosts web services for community organizations, such as the Seattle Convention and Visitors Bureau, the Trade Alliance, and the Job Initiative. These groups had previous symbiotic relationships with the city that evolved into website development and hosting. Currently, the community groups provide the web content and Seattle handles the set-up, hosting, and maintenance for a nominal fee.

Seattle also has an intranet for its governmental employees. The intranet is used in several capacities, including provision of news and information, publishing documents and manuals online, posting job openings, provision of employee benefit forms, online report generation, online procurement tools, virtual collaboration, and expansion of access and data to telecommuting staff.

In terms of funding, Seattle does not employ a separate budget for e-government. The majority of e-government funding is generated through the general fund for the IT department, although specific projects may be funded on a departmental basis. This approach to funding is another issue that is currently being investigated by the IT governance board, in order to determine if other methods will serve the new enterprise approach more completely.

Policy and legal requirements

In terms of policy and legal requirements, there are a variety of local, state, and federal laws that govern the presentation and distribution of website content in the United States. In particular, this section focuses on accessibility requirements, privacy policies, and security policies.

Section 508 Standard of the Rehabilitation Act of 1973, as amended in 1998, requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, Federal employees with disabilities have access and use of information and
data that is comparable to the access and use by Federal employees who are not individuals with disabilities, unless an undue burden would be imposed on the agency. As local governments are building websites, they are also responding to the call for accessible design. In fact, many states have codified the practice into law. Accessibility policies, resulting from the Section 508 legislation, have become one of the most frequent legislatively mandated policies to appear on US websites. In order to assess the accessibility of the case study websites, the Bobby Analysis tool was used. This tool is available at http://www.cast.org/bobby/ and allows the user to insert an html page for accessibility assessment.

There is significant citizen concern about establishing and maintaining their privacy rights. In the 1950s, the Freedom of Information movement, spurred on by McCarthyism, mobilized people to protect their right to know about governmental affairs, in particular, information collected by the government about the individual. The Freedom of Information Act was passed in 1966 but it had little impact owing to lack of compliance regulations and lack of punitive structures. During the mid-1970s, the Freedom of Information Act was amended to address some of the grievances, such as limiting costs for access to information, and attaching penalties for non-compliance. By 1996, the Act had been amended again to encompass electronic information and transmission. This amendment requires the agencies to offer electronic copies of traditional paper-based documents. However, the lack of real resources to complete the tasks required in the legislation has significantly reduced the value of the amendment. The Freedom of Information Act and Electronic Freedom of Information Act created a venue for obtaining information about government operations. However, they also brought to light issues of personal privacy rights, which are the common context of today’s privacy conversations. Attention to privacy in terms of public sector information technology often involves website privacy and its relationship to website visitors. As such, this section will examine the presence of privacy policies within the case studies.

Security is important to citizens in terms of protecting their personal information. However, many of the security concerns of the general population are examined in the form of privacy legislation. With respect to security itself, the majority of public sector literature revolves around intra-organizational security. Trade-offs are the main tenets of security in local government organizations—i.e., higher levels of security require increased costs, lower levels of privacy, and decreased functionality. Despite the trade-offs that must be made, attention to security for public sector technology is at an all-time high. In fact, leading technology think-tanks, such as the Harvard Policy Group, and federal agencies have produced major reports outlining the critical components of public sector IT security.

**Virginia Beach, Virginia**

In terms of accessibility, the Virginia Beach website does contain a statement on Section 508 compliance. The website offers guidelines about its design that signify a commitment to meeting Section 508 requirements. Additionally, the State of Virginia has also developed accessibility standards for state agency websites. The Technology Access Clause of the Code of Virginia, developed by the State Secretary of Technology, dictates the requirements pertaining to non-visual access to technology. However, examination of
the Virginia Beach website with the Bobby Analysis tool indicates that the city has not met all compliance measures. In particular, the website lacks alternative text for some graphical images and it does not provide explicit labels for form controls.

In the privacy arena, Virginia Beach has a published privacy policy. In the policy, the city states acceptable terms of use and the purpose of the website. Furthermore, the privacy policy notifies the website users that Virginia Beach collects cookies from users. Often in the arena of privacy, cookies are viewed as an invasion of privacy. In fact, the US federal government does not allow the tracking of cookies. In the case of Virginia Beach, the policy stating that cookies are tracked is important because it informs the citizen. However, there is no method to opt out of cookie collection, which would further enhance the privacy policy of the city. Finally, the e-government commission has developed a policy to disallow the online presentation of individually identifiable information. Although this information is available via other means of public records, the sentiment that the Internet is somehow more public than the town hall has influenced the commission’s decision.

Finally, Virginia Beach does offer a security policy on their website, as well. The security policy presented is essentially a disclaimer, stating that the third-party vendors who use the Virginia Beach website for registration and other functions are not part of the city and their security practices are not protected under city ordinance. Internal security policies are rigorous within the city of Virginia Beach. The IT department has spent considerable resources on ensuring the integrity of the infrastructure and support systems for the city. Virginia Beach has a security officer on staff and has implemented partner networks with segregated traffic to ensure the security of city data.

**Conyers, Georgia**

The Conyers website does not contain a statement on Section 508 compliance. Furthermore, examination of the website with the Bobby Analysis tool indicates that the city has not met all compliance measures. In particular, the website lacks alternative text for many graphical images.

In terms of privacy, Conyers does have a published privacy policy. In the policy, the city states acceptable terms of use and the purpose of the website. Furthermore, the privacy policy notifies the website users that Conyers does not collect cookies from users. In addition, the policy indicates that information collected from web forms are used as a public record and/or processing form and may be subject to the Georgia Open Records Act. Essentially, the state of Georgia has required the collection of specific information over the Internet to face the same public scrutiny as other public records transmitted by paper methods.

Finally, Conyers does not offer a security policy on their website. There is a disclaimer about connecting to third-party sites from the Conyers website, but no specific information regarding security is offered.

**Scottsdale, Arizona**

In terms of accessibility, the Scottsdale website does not contain a statement on Section 508 compliance. Furthermore, examination of the Scottsdale website with the Bobby
Analysis tool indicates that the city has not met all compliance measures. In particular, the website lacks alternative text for some graphical images.

In the privacy arena, Scottsdale has a published privacy policy. In the policy, the city states acceptable terms of use and the purpose of the website. Furthermore, the privacy policy notifies the website users that the website collects cookies from users. However, the policy does mention the right of the citizen to opt out of collection of cookies or personal information, if so desired.

Finally, Scottsdale does offer a security policy on their website, as well. The security policy presented concerns credit card transactions. It highlights how transactions are secured using SSL technology. Furthermore, the city has undergone internal changes, such as installing new network security equipment and services, coupled with new organizational security policies and procedures, to prevent any breaches.

_Sea[t][le], Washington_

The city of Seattle’s website offers one of the most extensive security and privacy policy statements of the four case studies. However, the site does not offer a statement on Section 508 compliance. The Seattle website does offer a text-only version of its entire website, which combats the majority of problems encountered in achieving Section 508 compliance.

In terms of privacy policy, the Seattle website offers an extensive policy. The policy covers information collection and use; personal information and choice, public access to information, review and correction of personally identifiable information, use of cookies and applets, electronic commerce, and disclaimers. The city allows for the collection of personal information on a voluntary basis only. The city also indicates that public records on the Internet receive the same legal status as paper-based public records. Currently, Seattle does not use cookies or applets to customize its user interface. Finally, the city states that financial information transmitted via the Internet is not subject to Public Records law.

The final policy area, security, is also covered on the Seattle website’s policy page. According to the website, Seattle has taken several steps to safeguard data and prevent unauthorized access by engaging in authentication, monitoring, auditing, and encryption. The city website states that “security measures have been integrated into the design, implementation and day-to-day practices of the entire operating environment as part of its continuing commitment to risk management.” The security policy presented by Seattle is one of the most comprehensive of the four case studies.

As demonstrated throughout this chapter, each jurisdiction has a distinct method for development, collaboration, and funding of the e-government initiative. However, all of the aforementioned cases do share common bonds of commitment to e-government, involvement of stakeholders, highly skilled technical staff or consultants, and recognition of challenges and changes resulting from e-government. Accordingly, these case studies provide a snapshot of a few of the many approaches to the e-government revolution that is rapidly progressing.

Conyers (Georgia), Scottsdale (Arizona), Seattle (Washington), and Virginia Beach (Virginia) offer high-quality e-government projects for assessment and review. The goal of these case studies is to provide some of the critical factors that engendered project
success and to allow other governmental entities to gain knowledge and understanding about the role of e-government, its potential benefits, and its associated challenges.

Conclusion

As discussed, migrating services online can potentially lead to advances in government responsiveness and accountability through its ability to promote visibility and transparency, productivity and efficiency, and horizontal integration. E-government would seem to be “the answer” or at least one answer to the burgeoning demands confronting modern public organizations. The fourth channel should be able to assist governments in performing many of their service delivery, administrative, and enforcement activities. And for many public organizations they have faced “the point of no return.” Citizens are demanding the ability to pay taxes, renew driver’s licenses, and register school children on-line. And many private providers are insisting that governments procure, invoice, and pay bills online. Yet, in the short history of e-government, challenges have arisen and few understand their full implications on our democratic processes.

In America, county jurisdictions were originally drawn so that a resident never had to encounter more than “a day’s horse ride” from the county “seat” (center of the government activities). What ultimate impact will online government have? Will the elimination of time and distance barriers serve to eliminate redundant services thereby leading to greater centralization? Will the instant communication allow for greater citizen engagement? And will the benefits translate to greater levels of transparency, accountability, and reliability? While speculations abound over whether e-government will fundamentally reshape democratic governance as it has been defined for the past 200 years, few doubt its potential to do so. Perhaps the greatest question is whether the American citizenry is prepared to harness and direct the potential opportunities e-government can offer their participatory democratic processes.

Note

1 Http://www2.icma.org/main/bc.asp?bcid=141&hsid=1&ssid1=44&ssid2=80&ssid3=215.

Bibliography


9
Concluding remarks on national specifics and transfer and adoption of good practice

Helmut Drüke

The concluding remarks try to give answers to the leading questions of the research: what is the status of local e-government worldwide, and what are the national specifics in the profile of virtual town halls?

On a broad empirical basis the book documents the level that local e-government has achieved internationally and the development prospects that are apparent. Unlike many recently published benchmarks which mainly “count” the number of services offered online to identify the pioneers and stragglers on an international scale, this study presents arguments of high quality with a great breadth of analysis. That is the reason why we do not present any kind of metric ranking between the countries or the municipalities. Nevertheless differences in the advancement of e-government are made quite clear.

In addition, the conclusion reflects on the question if and under what conditions good practices that are analyzed in this book can be transferred to, or adopted by, the poorer-performing municipalities in different countries.

Success factors for local e-government in comparison

The case studies were analyzed by reference to a consistent evaluation grid which was largely based on the ten success factors for local e-government. This concept was developed in the framework of the accompanying research for the German focus project MEDIA@Komm (Grabow et al. 2002). But the success factor “Legality” was not taken into account because the legal framework in the countries studied is too different.

The concept of the study enables the differences between the e-government approaches in the different countries to be clearly presented. At the same time, the strengths of each country and the need for improvement are apparent. Different “best practices” can be found for each success factor.
Table 9.1 The success factors for local e-government

<table>
<thead>
<tr>
<th>Guiding principles and strategy</th>
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<td>Organization, project and change management</td>
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<td>Applications</td>
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<td>Benefits and costs</td>
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<td>The right technology and organization of the use of technology</td>
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<td>Co-operation and partnerships</td>
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<td>Sustainable preservation of resources</td>
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<td>Legality</td>
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Source: Grabow et al. (2002).

Guiding principles or visions are only rarely found in the local communities covered in the study. The great exceptions are Tampere (Fin), Tameside (UK), Duesseldorf (G) and Yokosuka (Jap). These cities, among the local communities in the sample, were most radically committed to creating guiding principles for the e-transformation of the municipality, their work and their relationships with their environment. Visions of the e-city and the redefinition of the municipality in the information society are clearly and radically formulated. They act as an “umbrella project”, which means that the e-government project has a clear and fundamental orientation and identity which permits long-term planning and ensures that it will have political support even beyond the end of the term of office of the current political leadership.

All progressive local communities in the study sample have a written e-government strategy, and in most cases this is integrated into a comprehensive municipal strategy and based on a vision. Also here Tampere (Fin), Tameside (UK) and Duesseldorf (G) but also Virginia Beach, Conyers and Scottsdale (all USA) are the leading examples. In these cities the main areas in which information technology is used are defined in the framework of the goals formulated for the city: areas of responsibility are defined, co-operations are prepared and the concept for the complete procedure for the project is prepared. The municipalities that are funded by national programs, as in Germany and the United Kingdom, developed consistent strategies, because of the requirements for receiving the subsidies. The striking thing is that there is no one-size-fits-all strategic approach. Among the most advanced municipalities we find top-down strategies as well as grassroots strategies.

In some local communities in Germany, France and Finland, problems have arisen in the step-by-step development of the virtual town hall, for example from an existing Internet presentation. Once the requirements increase, especially in the development of
secure, legally binding and seamless transactions, it is therefore essential to formulate an overall strategy or a master plan for e-government.

There is general agreement that it is a major success factor if the top political and administrative leadership of the municipality identifies with local e-government. The leading personalities of the town or city are committed and act as leading supporters of the project both internally and externally throughout the project cycle. This commitment is a major condition to ensure coherence between the modernization project e-government and other reform projects in municipal politics.

Especially in France, the USA and the United Kingdom, the personal involvement of the mayor both publicly and within the administration has a great influence on the extent to which citizens, administrative staff and local businesses devote their systematic and continuous attention to the project.

Strong leadership personalities can also play a major role in overcoming motivation barriers in the process of change. “Real leadership means breaking through old habits, pushing conventional thinking aside, finding new approaches wherever they are and whoever developed them, and using them to bring about change in the local communities” (Ferguson, Chapter 6 in this book).

**Organization, project and change management**

In all country studies, the importance of professional project and change management is particularly emphasized. Against the background of tendencies in the modern theory of company organizational models it is remarkable that no clear preference for a specific organizational form comes out of the study. The most successful local communities include communities with a matrix organization and cases with separate task forces.

Organizational forms are obviously chosen on the basis of earlier experience or to implement consulting proposals. But there is agreement on the necessity of central coordination and responsibility to bring together the large number of individual initiatives, ensure that resources are available, provide support between the responsible offices and combine e-government with the other initiatives of municipal policy.

There is a special formal and organizational variant in the United Kingdom which represents dual leadership from the top, i.e. one representative from the municipal council and one representative from the top level of the administrative hierarchy.

If we consider the transformation of transactions and the structural organization in connection with the implementation of e-government—a sub-factor of the success factor “Organization”—it is apparent that e-government in local communities is only just beginning. It is only in exceptional cases that process re-engineering has taken place as a result of the introduction of e-government, with a restructuring of transaction processes, changes in the structural organization, co-ordination with and integration into administrative reform, reorganization of staff deployment and a shift in the distribution of tasks between private companies and the local community. Local communities such as Tameside, Salford, Hertfordshire (all UK), Virginia Beach (USA), Bremen, Hagen and Düsseldorf (G) and Tampere and Espoo (Fin) have made outstanding progress in this area. Tameside stands out as one of the rare cases in which e-government has given the impulse to restructure the formal organization of the city. “Tameside reorganized itself three years ago into 20 service units reporting to four strategic directors, to become more
responsive to the needs of its citizens and customers. Each service unit now has its own e-Champion” (Ferguson, Chapter 6 in this book).

An important aspect of project management is the monitoring of results and process evaluation. Here, the local communities from the USA, the UK and Finland are leading in the application of modern methods which have long been routinely used in industry, such as the key figure system (Espoo, Fin), balanced scorecards and the methods of risk management (Surrey, Salford, UK). US municipalities use widely quantitative and qualitative performance measurement methods (Brown and Schelin, Chapter 8 in this book). In contrast to these countries, evaluations are only used in exceptional cases in France, the Netherlands, Germany and Japan.

**Applications**

Local e-government in its most developed form, i.e. “High end e-government” (see Figure 9.1), means that all aspects of government and administration (public policy formation, decision-making, development and provision of services, participation) are supported by information and communication technology to a large extent. This particularly includes seamless transactions between the administration and its customers and a well-developed participation of citizens in the local community policy formation and decision-making processes via the Internet and new media.

Measured by these standards, local e-government throughout the developed world is now on the threshold of transactions after the first stages of development in which the focus was on the creation of municipal information systems such as administrative guidance, forms, municipal portals and facilities for communication (email, chats, etc.). Simple transactions such as resident registration after birth or in the case of address change, as well as company registration, are well spread. Developed transactions exist in only a few cases.

Advanced individualized transactions such as payment of taxes and charges and e-procurement are relatively far developed in those countries in which the statutory and technical obstacles in relation to transaction security, legally binding transactions and authenticity are relatively low.
This explains why the USA, the United Kingdom and Canada are among the world leaders in all relevant benchmarking studies of online services (see Accenture, Cap Gemini, eEurope). Alongside the standard services in the prize-winning MEDIA@Komm municipalities in Germany, on the other hand, a number of applications have been developed in which legally binding, secure and authenticated transactions are ensured, especially by the use of the verified electronic signature, such as debt collection, residential registration and building permit applications.

Interesting implementations can be found in the social service sector in France and Japan. In Issy-les-Moulineaux, for example, online observation by the parents of children in holiday camps is possible. There is another example in the care of senior citizens in Japan: “Ikeda City connected by using the already installed CATV network”, “the pet animal-shaped robot located in the single-dwelling senior citizens’ house with the centre facilities located in the welfare service support centre” (see Fujita et al., Chapter 7 in this book).
Participation services also vary widely in character. In many cases there is a direct approach to council members and administrative staff, and in some countries there are forms of participation in building permission procedures. Participation facilities on a broad front are especially found in Finnish local communities (see Anttiroiko, Chapter 2 in this book). A special form of public participation in the e-government project itself has been developed in Virginia Beach (USA) with its citizen committee to monitor the project work (see Brown and Schelin, Chapter 8 in this book). The French municipality Issy-les-Moulineaux has installed a system to enable the citizen to participate actively at the council sessions (see Chamoux, Chapter 3 in this book). The option of e-voting, which was once regarded with high hopes, is only used or tested in less important cases in all parts of the world because of the high investment and the low demand. Some examples can be found in the Netherlands (see Leenes and Svensson, Chapter 5 in this book).

Benefits and costs

The greatest benefit of local e-government for the individual town, city or local community, its citizens and the local businesses lies in the reduction of bureaucracy, the increase in transparency and the improvement in access to information and knowledge. In the medium term, major gains in efficiency are also possible in the administration—especially savings in costs and personnel. This is illustrated by a comment from Liverpool (UK):

Under the new e-forms arrangements, staff are asked to complete a form giving bank details. If a member of staff wishes to claim expenses, the online form is completed and submitted to the manager for authorization (the forwarding of the e-form from the manager’s mailbox). The form is then processed by the business unit and paid straight into the individual’s bank account, normally within three working days. This has helped the process to be automated, reducing the need for double handling, and consequently has sped up the whole process and reduced the need for paper-based forms and records.

(Ferguson, Chapter 6 in this book)

This result is confirmed by assessments made by municipalities in different countries. This development results in a strong support of e-government activities. “The website is now regarded as a source of efficiency and organizational development. The fact that online forms are used increasingly, instead of personal visits, means that work is done more efficiently (doing several forms in one go)” (Millingen, NL, see Leenes and Svensson, Chapter 5 in this book).

In Virginia Beach (USA) the e-government initiative has caused significant changes in the government.

These changes include changes in the role of staff, reduced time demands on staff, increased citizen contact with elected and appointed officials, re-engineering of business process, and reduction of administrative costs.
The overarching theme for Virginia Beach government is customer service. One of the main changes resulting from the e-government initiative is transitioning the citizen-centric focus to web-based services.

(Brown and Schelin, Chapter 8 in this book)

But the benefit is far more than just monetary feasibility, it relates to factors such as the image of the location for investors and tourists, and an enhancement in the civic involvement of the citizens.

At present there are no comprehensive economic feasibility studies available anywhere in the world. What can be called on to assess the benefits are selective calculations which are of great importance for the continuation of e-government. One example is Bremen (G):

As a result of the introduction of the debt collection procedure, a total of 60 per cent of the personnel capacity was saved in the local court. For the customers of the administration that meant a considerable improvement in the quality of the administration, faster processing and the provision of assistance via the Internet, so that the latest up-to-date legal regulations are available. The administrative reform and the use of new technology have therefore created a win-win situation for the administration and its customers (especially from the business sector).

(Perschau 2002).

Local communities in the USA, the United Kingdom and Finland are a long way ahead in the application of methods for project controlling, which in the last resort lead to reliable cost-benefit estimates. US municipalities use both quantitative and qualitative methods of performance measurement. Others use methods such as the cost/benefit portfolio (Fin) on the basis of key figures and the balanced scorecard approach (e.g. Surrey and Salford, UK). The two methods are closely linked with the fundamental strategic decisions. The case studies also show that cost-benefit estimates vary widely, particularly as a result of the general conditions, and especially the business model chosen. The use of consistent and uniform standards is indispensable to achieve the best possible cost-benefit ratio. The costs rise significantly where proprietary technology is used.

In general there is little knowledge about the cost-benefit relation, and this is severely felt as a huge gap by practitioners in the municipalities and political officials. ¹

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**The right technology and organization of the use of technology**

The fifth success factor relates to the development of the technical infrastructure to ensure that the “e” in e-government is at a high level. In most of the municipalities the civil officers have the possibility to work with an Internet-enabled PC if not on their own desktop then within the department.

The PC/staff ratio ranges between 50 percent in Finland and about 80 percent in the UK and Germany and (close to) 100 percent in the Netherlands, France, Japan and the USA. At least two-thirds of the PCs are LAN-connected for inter-/intra-office application.
The major challenge here lies, instead, in the areas of standardization and interoperability. But there is still a mixture of widely differing operating systems, technical solutions and specialist applications. The technical combination of applications is therefore complicated, and there are many incompatibilities. Work-flows have not often been implemented, so media discontinuity within the administration and in external communication is still the rule rather than the exception.

The prize-winning MEDIA@Komm municipalities in Germany have made considerable progress in standardization and interoperability with the OSCI protocol (Online Services Computer Interface) for technical platforms, the ISIS-MTT standard for compatible electronic signatures and the “procedural model for the design of the transaction processes of the public administration” (DIN 2003), and this will help to achieve the goals of the future development of European, and in a later stage worldwide, standards for local e-government. In the United Kingdom the national government has provided a nationwide standard with the Government Gateway.

The local communities covered by the study take different approaches to the assurance of integrity, legally binding commitment, authenticity and security in transactions between the administration and its transaction partners.

Electronic signatures are a key technology in the development of virtual town halls. Even though a large proportion of e-government applications in local communities can be implemented without signatures, there are a number of local tasks and associated transactions between the administration and the citizens or business companies in which written form is legally required. The only allowable electronic substitute for the handwritten signature and the requirement of written form in Germany is the so-called verified electronic signature. For some applications, the verified electronic signature with accredited providers is required, or the use of electronic signatures is fundamentally prohibited.

A number of local communities from Germany, Finland and the United Kingdom are relying on the verified electronic signature. A special feature in the United Kingdom is that the central government is following a dual strategy: on the one hand it uses software attributes with various levels of security, on the other hand it subsidizes some pilot projects such as the “Pathfinder projects” in Southampton and Cornwall which use smart card technology with an integrated verified electronic signature on a security level that is comparable with Germany. In promoting the MEDIA@Komm project, Germany clearly places an emphasis on secure, legally binding and authenticated transactions.

E-government “made in Germany” thus typically involves highly developed technical platforms on which many modules are integrated: application servers, web servers, form servers, database servers, signature servers and components, directory services, time stamp services, payment servers, gateways/interfaces.

To assure security the authorities in France follow a different path. The user is identified by comparing the data he enters with the data entered earlier. In terms of transaction security, the French solution depends, in addition, heavily on the smooth operation of the central portal http://www.service.public.fr/. All online payments are handled by this national portal, which is fully in line with the dominance of the national government in the administration. The user is identified by comparing the data he enters with other data entered earlier. The Netherlands does not have a digital signature or a
Public Key Infrastructure. The digital signature is also not relevant in the USA. In Virginia Beach the digital signature is used internally for cellular phone authorization.

Public access points and/or assisted PCs for users who need help in using the PC are widespread in many of the municipalities surveyed. Ahead of the pack are Finland and some avant-garde municipalities in Germany. In contrast these terminals are not deployed in the USA. Japan takes advantage of its technological lead in mobile operating systems such as imode, which is available for the use of mobile phones as an access channel.\(^2\)

**Competence, motivation and qualifications**

In all countries, a lack of in-service training on subjects related to e-government in general is regarded as one of the most important obstacles to the implementation of the virtual town hall. In practice, only the local communities in Finland, the USA and some local communities in the United Kingdom give special treatment to local e-government in their in-house training program.

An outstanding example is the local community of Espoo (Fin) in which top managers in the administration must complete a compulsory 12-day in-service training course. The instrument of staff rotation, which is familiar from the lean management of Japanese industrial companies, is used for example in Tameside and Liverpool. Teams of employees work for up to three months in other local communities on the introduction of IT in general and the co-ordination between the back office and front office in the introduction of e-government. This mechanism was implemented in the framework of the close co-operation between local communities in the United Kingdom.

Liverpool goes a step further in its project for rotation with private companies, i.e. British Telecom, starting with the IT services and call centers. The goal of this bold experiment is training in customer orientation where it is furthest developed, in private enterprise. This far-reaching deployment of personnel is unique and deserves to be monitored further in its effects and requirements.

In Okoyama City (Jap) former teachers are assigned to teach computer literacy to the user. Several institutions give their contribution to find the appropriate people. “With the collaboration of the private sector, educational institutions and welfare organs, the information volunteers are publicly recruited at the earliest possible date among retired ex-public officers, ex-private company employees, and from other relevant institutions” (Fujita et al., Chapter 7 in this book).

Tampere (Fin) and Liverpool (UK) have found a creative means to combine access and training for public users, the Internet bus. The city administration of Tampere “itself has contributed to this area by the Internet bus called NettiNysse. It can be booked free of charge for any group wishing to learn to use the computer and to utilize the Internet. The bus itself has two parts: in the front there is a computer “room” with 11 computers with the mobile and W-LAN connection to Internet, and in the back there is small “auditorium” with a data projector, screen and comfortable chairs” (Anttiroiko, Chapter 2 in this book). The idea in both cities is “to provide access to IT systems and the Internet and wherever access to services may be deemed difficult, or where there are large numbers of Liverpool residents” (Ferguson, Chapter 6 in this book).

In the framework of the MEDIA@Komm-subsidy program in Germany, a learning module was developed to enhance the training and qualifications of the administrative
staff, and a “repository of knowledge” was compiled which offers knowledge and information on the ten factors for success in local e-government, also for training (www.mediakomm.net/eng). A similar knowledge management system has been developed by the I&DeA in the United Kingdom (http://www.idea-knowledge.gov.uk/). It consists of a database in which extensive material drawn from case studies in local communities, experts’ reports and scientific contributions are brought together under three main headings (“The four pillars”, “The building blocks”, “Essential resources”) for the practical benefit of decision-makers in the local communities.

**Creation of acceptance, marketing**

Instruments to integrate the user in e-government activities have to be adapted to the different knowledge and willingness to work with the new systems.

An elementary prerequisite for good e-government is the integration of the staff in the reorganization of business processes which accompanies the introduction of local e-government. A number of British local communities envisage this sort of participation in the re-engineering process (Tameside, Hertfordshire, Salford). Bremen, Esslingen and Hagen (G) follow a similar procedure, but otherwise there is a dearth of activity in this area. The traditional forms of the notification and ex-post instructions are prevalent. An interesting institution has been created by Lewisham (UK) with its Customer Champions whose task is “to review the changes which affect the whole administration and to exchange experience and best practices, thus enabling the staff to solve customer queries better” (Ferguson, Chapter 6 in this book).

Some local communities use intelligent communication concepts both internally and externally to obtain support for the e-government project. In cities such as Cologne or Duesseldorf (both G), a whole range of instruments are used—ranging from the participation of staff representatives in committee meetings to newsletters and intranet forums—in an attempt to create acceptance. Special value is placed on the active role of the administrative management. The MEDIA@Komm municipalities in Germany have implemented a number of initiatives: citizen information offices have been set up, four notable congresses held and portals established.

Especially in Finland and the United Kingdom, the longstanding practice of continuous improvement has had a noticeable positive effect. The staff was therefore already familiar with one of the core elements of e-government, the permanent adaptation of the structural and procedural organization in response to problems. In the East Riding (UK), the discussions about administrative management are placed on the intranet—thus reducing anxiety about the subject.

In Liverpool (UK), a series of road shows on e-government proved a successful way to approach the external user, e.g. the population. An interesting institutional solution to the problem of involving the stake-holders (citizens, business companies and interest groups) was the special commission on e-government that was created in Virginia Beach (USA). Although this body merely plays an advisory role, it is nevertheless an important channel of communication between the political and administrative establishment on the one hand and social groups on the other. “The commission members represent a wide range of interest groups, and they use their contacts to meet these groups and discuss e-government in face-to-face meetings” (Brown and Schelin, Chapter 8 in this book). For
this purpose, Tameside (UK) created a so-called “e-team” with representatives from the different stakeholders in the municipality (see Ferguson, Chapter 6 in this book). Another idea is to maintain extranet services for key stakeholders as in Espoo (Fin). Eindhoven (NL) stands as an example for the problems that arise when no appropriate marketing has been set up.

A third, interesting problem, which requires serious attention, is the lack of awareness of Eindhoven’s citizens of the ESD initiatives. Whereas Enschede has billboards and advertisements to inform its citizens about the electronic counter and its possibilities, Eindhoven has done nothing of this sort. People therefore have to find the websites on their own, which means it takes more time for the new facilities to become widely used.

(Leenes and Svensson, Chapter 5 in this book)

Co-operation and partnerships

Co-operation between local communities to share tasks or just exchange information is a well-developed tradition in Finland. There is no other country that achieves a comparable level of firmly established co-operation. A rather strict form of co-operation between municipalities is realized in Japan because of the decisive role that the prefectures play in the process of digitization of the municipalities (see Fujita et al., Chapter 7 in this book).

Another form is developing in the United Kingdom, and gradually also in Germany: institutionalized co-operation between local communities that is stimulated by subsidies. In the United Kingdom, co-operation is a requirement for the award of subsidies in that pathfinder projects must be carried out by at least three local communities. The MEDIA@Komm transfer campaign in Germany, which was launched in the spring of 2004, aims to develop and supplement the results from the pilot municipalities in co-operation with other pioneering towns, cities and local communities.

Private-public partnerships are generally recognized as a form of co-operation between the public administration and private business, but their implementation has progressed to a different extent in the countries in the study. Helsinki (Fin) has developed e-government in a dual partnership with the company TietoEnator, Media Tampere is a joint venture between Alma Media, Fujitsu Invia, Nokia, the local community of Tampere (Fin), Soon Communications and the University of Tampere with a small proportion of shares.

Tameside (UK) has brought together the partners cooperating in the e-government project in an “e-team” which meets regularly to monitor and carry forward the activities of the project. Project staff of the metropolitan borough support the work of this team “for consultation, for awareness raising and for sharing best practice” (Ferguson, Chapter 6 in this book).

Sustainable provision of resources

Where the e-government initiatives are guided by a strategy, the success of the overall project is not only measured by its short-term results. In such communities it is agreed that a short-term return on investment is not realistic in view of the low demand by
paying customers for online services and their technical base products such as platforms, etc. In Germany, for example, transferring the MEDIA@Komm projects into sustainable long-term business models is still a challenge.

Qualified staff form the backbone of e-government in the local communities. Personnel development is therefore an important way to retain committed employees in the administration. Local communities in Finland and the United Kingdom are far ahead with their practical initiatives in this area, including some of the initiatives already mentioned. Examples include: integration into the practice of continuous organizational learning in Tampere (Fin) and Tameside (UK), rotation measures in Tameside and Liverpool (UK), intensive consultation on all aspects relevant to the personnel in Bremen (G). A largely unexplored area which is relevant to the sustainable provision of resources is knowledge management. Even in the most developed local communities in the study sample, this area is still in its infancy.

**Similarities and differences between the local communities**

Up to this point, the individual case studies from seven countries have been used to reconstruct what approaches and solutions have been implemented in local communities, and where there are outstanding developments. The following reflection summarizes the empirical results and explores the similarities and differences between the procedures in the local communities, paying special attention to the question of where there are distinct national characteristics. This stage of the analysis aims to help us decide what constitutes good practice in local e-government.

**Similarities in local e-government**

The municipalities of the leading group of countries, i.e. Finland, the United Kingdom and the USA, have considerable agreement especially in the success factor “Guiding principles and strategy” and, to a lesser extent, in the success factor “Organization, project and change management”.

- The project is based on comprehensive guiding principles.
- It is integrated into a comprehensive strategy.
- It is controlled and steered with professional project and change management, *ex-ante*, *in-progress* and *post-mortem* evaluations and modern cost-benefit assessments.

The central figures are the mayors as the political representatives and the city managers, who manage the public administration in a similar way to the chair of the Board of Directors in private enterprise.

Another common element is the great importance given to “co-operation and partnerships”, which is especially strong in Finland and the United Kingdom. Long-standing experience with co-operation and competence in co-ordination management has existed for many years because there is a tradition of openness to private business. Countries such as France and Japan have much ground to make up in this area.

Almost unanimously, obstacles and hindrances have been specified. The items that, regardless of the country, were mostly named are:
• lack of financial resources due to budgetary constraints
• gaps in the set of qualification required to work with new technologies and work systems
• staff resistance to change
• management resistance to new role pattern
• traditional stovepipe approach resulting in a lack of departmental collaboration
• lack of regulation especially to assure security and privacy
• uncertainty about the return on investment.

As a result of this section a universal good-practice core can be identified characterized by a high performance with regard to the factors political leadership, project organization, cost-benefit assessment, co-operation and e-skilling. But nevertheless marked national specifics exist when it comes to the configuration of these good-practices.

Main differences in the approach to and the local realization of e-government

Differences in the approaches to and realization of local e-government can be identified between individual countries, and also between groups of countries. This is especially striking when the hallmarks, i.e. the specific character and basic characteristics of the type of local e-government in a specific country are analyzed (see Table 9.2).

Within the seven countries covered by the study there are similarities and differences which enable them to be separated into groups. The first group is made up of the Anglo-Saxon countries, i.e. the United Kingdom and the USA, which treat the “city as an enterprise” more than other countries and regard e-government as a further instrument to mobilize the forces of the market. This is especially reflected in the priority given to customer orientation and the demands made on the effectiveness and efficiency of local community activities.

A second group consists of Finland and France, which regard citizen participation as being at least as important as effective administration. Germany, with its emphasis on secure, legally binding and trustworthy transactions without media discontinuity by using the verified electronic signature as far as possible, is more or less unique in the global e-government landscape compared with other countries analyzed in the study.3

But the common elements of the three leading countries in these areas

Table 9.2 Hallmarks of local e-government

<table>
<thead>
<tr>
<th>Country</th>
<th>Hallmarks of local e-government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>Focus on secure, legally binding and trustworthy transactions without discontinuity of media,</td>
</tr>
<tr>
<td></td>
<td>using verified electronic signatures as far as possible.</td>
</tr>
<tr>
<td>Finland</td>
<td>Pragmatic, problem-oriented approach with a focus on promoting regional economic development,</td>
</tr>
<tr>
<td></td>
<td>training and public participation.</td>
</tr>
<tr>
<td>France</td>
<td>Strengthening of civic society and the citizens, low importance of business companies,</td>
</tr>
<tr>
<td></td>
<td>centralization of payment functions.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Strong customer orientation (“customer-first”, multi-channelling, one-stop shop), subsidy</td>
</tr>
<tr>
<td></td>
<td>policies systematically include co-operation between local communities.</td>
</tr>
<tr>
<td>The</td>
<td>Effective and transparent administration, customer orientation.</td>
</tr>
<tr>
<td>Country</td>
<td>E-government aspect</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Netherlands</td>
<td>E-government is a core component of the general modernization strategy in information technology. Effective and transparent public administration. Equal importance of e-administration and e-democracy.</td>
</tr>
<tr>
<td>Japan</td>
<td>Strong customer orientation (toward both private customers and business modernization of the public administration, very pragmatic approach to security in transactions.</td>
</tr>
<tr>
<td>USA</td>
<td>Strong customer orientation (toward both private customers and business modernization of the public administration, very pragmatic approach to security in transactions.</td>
</tr>
</tbody>
</table>

Source: own presentation.

also indicate that there is divergence compared with the other countries in the study. The countries of the wider group of leading countries also differ in details with regard to the other success factors (see Table 9.1):

- In Finland the staff are especially integrated through consultations and qualification programs.
- Germany is notable for its emphasis on secure, legally binding and authenticated e-government.

The differences between the countries in the study are particularly large in the success factors “Guiding principles and strategy”, “Organization, project and change management”, “Competence, motivation and qualifications” and “Co-operation and partnerships” and “Sustainable provision of resources”.

The differences that have been described in the success factors are closely linked with the “managerialism” which has already been mentioned, and which is typical of the Anglo-Saxon countries and, to a lesser extent, Finland. This in turn points to the different structural, institutional and cultural characteristics especially in the state constitution, labor legislation, vocational training and administrative traditions (Hollingsworth et al. 1994, Naschold et al. 1997).

Therefore, the differences between countries in the concepts and solutions accepted as good practice for local e-government are likely to be as relevant as the differences for New Public Management because they go back to deeply rooted national specifics in the attitude toward human resource management, ranging from the role of the civil service in Germany (Berufsbeamtentum) as one extreme to the “city as a business corporation”, which is characteristic of the Anglo-Saxon approach to local government.

A second relevant factor explaining the differences in the approach to and the realization of local e-government is the specific administrative structure. The sample comprehends diverse countries such as the unitary states United Kingdom, France and Japan on one side and federal countries such as Germany, Finland, the Netherlands and the USA.

To some extent, the differences are very noticeable at the local level, and they can be either beneficial or detrimental. Two extremes can serve to illustrate this.

One extreme is Japan. No significant differences were identified in the characteristics of local e-government. One striking element is the strong central control of local e-government projects by the central government.
The local e-government initiatives in Japan follow the e-Japan Strategies. Under the powerful navigation and abundant financial support extended by the national government, the pioneering local governments serve as the “model” to proceed with the pilot project, which are expected to be followed by other local governments. Accordingly, the majority of the local governments which are not yet developing remarkable local e-government initiatives to date may be in the process of accepting the policies and measures suggested by the national government, duplicating the preceding cases.

(Fujita et al., Chapter 7 in this book)

Japan offers a special reason to delay local e-government initiatives: the impending reform of local authorities, which involves merging municipalities.

The municipalities facing a potential merger in the near future are taking a wait-and-see approach because they are concerned that the system would have to be restructured upon the merger, if it went ahead, even if they make major e-investment at this stage.

(Fujita et al., Chapter 7 in this book)

The other extreme, the Netherlands, illustrate the consequences of a distinct localism in the state organization for the implementation of local e-government.

The problems of Dutch e-government development begin with the questions of policy, steering and central coordination. The Ministry of the Interior and Kingdom Relations seems to be made for this part, but operates within the constitutional make-up of the Netherlands in which the Dutch governmental culture, which acknowledges the autonomy of the different layers and sectors of government (ministries), plays an important role. In practice this results in little room for centralized policy-making. In the Netherlands it is felt that e-government development requires voluntary participation and consensus among the different participants, making it a typically Dutch syrupy process, the famous Poldermodel.

(Leenes and Svensson, Chapter 5 in this book)

The result of this voluntarism is the lack of co-ordination and, thereby, a constant re-inventing of the wheel by some progressive municipalities.

Many municipalities are developing online services for what are basically very similar products. This not only seems inefficient but, given the limited resources most municipalities have at their disposal, it is also a slow and cumbersome process. When municipalities realize the amount of effort needed to do a proper job, they may even throw in the towel, and wait for better times.

(Leenes and Svensson, Chapter 5 in this book)
Elements of a transfer and adoption theory between nations

The pressure of modernization does not stop at national boundaries—in this respect it is universal and secular. In some regions of the world the pressure of change is particularly extreme, for example in Eastern Europe, where the transformation of the administration from a state socialist to a democratic institution is taking place under the enormous time pressure of complying with the new national and international standards and catching up with the global economy.

In view of this starting point for the universal pressure of change and reform, the responsible decision-makers are often eager to model the direction and implementation of their reforms on the best local communities. The high level of interest in the results of various benchmarking studies among local community representatives stems from this pressure and a great uncertainty about the future of local community administration.

The following discussion aims to introduce a theoretical approach which avoids the limitations of the dominant transfer theories of the “one best way” (Ohmae 1990; Womack et al. 1990; Bartlett and Ghoshal 1989) on the one hand and “path dependence” (Arthur 1994; Pierson 1997; Leipold 1996; Freyssenet et al. 1998) on the other hand, and which creates a perspective for practical action in local communities. This is necessary because the practitioners need a compass which will offer them guidance in the crucial question of how they can achieve a transition from their present “less good practice” to a “good practice” model.

The theoretical equivalent of this practical problem is the question of the opportunities, conditions and limitations of the transfer (from the perspective of the transferring country) and adoption (from the perspective of the adopting country) of good practices in e-government.

The reasons why this issue needs to be addressed lie in the systematic problems of transferring institutions, concepts and solutions from one nation to another. The two dominant theories, the “one best way” theory and the “path dependence” theory, focus on this issue, but they naturally come to completely different conclusions.

Whereas the one best way theory regards the adoption of superior concepts as the royal route to overcoming existing inadequacies, the theory of path dependence sees hardly any possibility to adopt solutions from other national environments—it considers that the bonds of the decisions of the past and inherited structures are too strong.

It would go too far to discuss the limitations and problems of these two theoretical approaches here (see the instructive study by Scherrer 2001). For the practical approach which forms the basis of our own theoretical deliberations, at any rate, the limitations of both theories are severe. The concept of best practice involves enormous problems in defining what constitutes best practice and the question of how to cope with the fluctuations in the criteria for best practices and how to justify the assumption that a solution with a national character can constitute a universal “one best way” in view of the great differences between nations (“Model USA”, see Block 1991; “The Japanese production system”, see Womack et al. 1990; “The model local community of Christchurch”, see Pröhl 1997). On the other hand, the concept of path dependence also has major conceptual and methodical weaknesses, for example the question of the time frame of the paths involved, the selection of the institutions which define the path from the large number of possible institutions and the selection of the events which shape the path.
The practically oriented concept includes clear requirements and conditions for the transfer and adoption of solutions, in this case in the relationships between two or more nations, which are on the one hand objective and structural in nature and on the other hand subjective, i.e. linked with attitudes and approaches.\(^5\)

The most important objective factors are as follows.

- **IT infrastructure, Internet penetration in the population and the world of work, general computer literacy, the existing legal framework, qualification structures and traditions (see also Booz Allen and Hamilton 2003):** these factors describe the state of e-readiness, i.e. the general level of implementation of the information society in a country as a basis for e-government.

- **Degree and structure of institutional compatibility (administrative structure, distribution of competence in the administrative structure between central and decentralized levels, remuneration and career patterns) (Scherrer 2001; Soskice 1994).** The transfer of good practice between countries is comparatively easy if they are similar in their fundamental institutional structure, like the Anglo-Saxon countries on the one hand, or countries with a federal constitution and similar administrative traditions such as Germany, Japan and Poland on the other hand. But if the good practice examples are very closely linked to the basic institutional and cultural structure of one country, they are difficult to transfer to other countries. Conversely, if the institutional structure in the countries is very rigid, it will be difficult to apply the good practice examples. A striking example of this is the narrow limitation within which career patterns, payment, recruitment and staff deployment can be transferred from the United Kingdom or the USA to Germany, with its very specific public service employment laws. Thus, a country cannot leave its own modernization path at will and freely choose to adopt a different model.

- **Size, composition, structures, level of regulations and active participants in major markets (software industry, telecommunications, employment market) (Porter 1990).** The necessary active participant structure for local e-government on the supply and demand side will not develop in closed markets. For example, there will be a lack of creative software companies to implement the large number of specialist departmental procedures for online services.

- **The overall strategy in relation to administrative modernization and e-government.** The criteria here are the coherence of the strategy in the top leadership of the federal state and the local communities, and also the degree to which the process is co-ordinated with administrative modernization (Eifert 2004).

The yardstick for all of these factors is how closely or loosely they are connected with the special national characteristics and how coherently they fit together. Consequently, they form a system from which individual blocks cannot be removed and changed in isolation. They form a national innovation system (Dosi et al. 1994). “The strength of every successful production system lies precisely in its integration into conventions which work coherently in their interaction (…): these elements cannot be mixed and joined a la carte” (Storper and Salais 1997:172).

In addition to the objective factors, so-called subjective factors play a major role in deciding whether there is a successful transfer and adoption of best practices in e-
government if the analysis of the objective factors indicates that this is desirable. The subjective factors thus describe the action-based factors.

The major subjective factors are as follows.

- Attitudes towards the state and state actions, willingness to reform and receptiveness to new ideas in the population and the civil service. With a high level of risk avoidance among decision-makers and in the population an ambitious project such as the introduction of e-government adopting good practices will fail.
- The state of procedural competence, i.e. the implicit and subconscious rules of social and political life, which are different from the formally fixed rules of a society in the form of laws and statutes (Scherrer 2001). These tacit rules may play a significant role in causing sub-optimal solutions and concepts to be followed even though other solutions have been shown to be superior. The resistance to reforms which is frequently encountered and the stubborn persistence of established patterns are often associated with a strong influence of a deep-rooted procedural competence.
- Transfer and adoption capabilities in areas such as management, motivation and leadership ability and practical skills such as language competence, networking, inter-cultural competence (Bartlett and Ghoshal 1989). This factor decides whether this process can, in fact, be initiated and carried out, even if the people involved assent to the necessity of adopting good practices and the opportunities involved in the transfer. Elements involved include the ability to analyze the start-ing position in the adopting country, the selection of partners, setting up relationships of co-operation and practical supervision of the processes in the participating countries.

Elements of new institutional economics (especially in compiling the objective framework conditions for transfer) and path-dependent approaches such as “attitudes” and “implicit rules” obviously play a major role in this theoretical approach. The practical benefits can be seen in a model procedure used to determine the transfer potential.

The following steps can be helpful in developing the concept and implementing the transfer of solutions and concepts in the area of local e-government.

The starting point is an analysis of strengths and weaknesses in relation to e-government—first of all the institutional and structural conditions, and second the factors for the success of local e-government as a core element of administrative modernization. In methodical terms, these two processes are controlled by a SWOT analysis (Strengths-Weaknesses-Opportunities-Threats) and by a self-assessment of the quality of local e-government using suitable instruments such as the “Model for success in local e-government” or the knowledge database.6

This analysis can also include the question of whether these strengths and weaknesses are specific national features or generic characteristics. This will help countries with a transfer potential to identify what they have to offer, for example their strengths, and countries which need to adopt solutions from elsewhere to identify what they need, for example the weaknesses that need to be overcome. With regard to the practical question of overcoming weaknesses, the decision-makers in the country must decide whether the weaknesses can be overcome on their own, or whether they need to adopt solutions from other settings (countries, local communities).

Then it must be determined what country can offer solutions, concepts and assistance relevant to the identified weaknesses which are not specific national characteristics. If
this country is willing and able to transfer solutions, a process of exchange will then be set in motion. This process will consist of two stages. First, the concept phase will focus on matching strengths and weaknesses and identifying transferable solutions. The implementation phase will be the phase in which the solution itself is adopted. This will of course take into account the respective national characteristics of institutions, active participants and attitudes and thus avoid the trap of merely imposing external solutions.

There is another decisive aspect to avoid misunderstandings in the process of transferring and adopting solutions. This process will not be purely functional and technical in nature.

On the one hand, there are internal power constellations on both sides which have a decisive effect on the question of which countries are involved in which processes, what their interests will be and what the results will look like. Internal political interests and power constellations even affect the question of which country an “adopting” country is willing to receive solutions from. In the words of Scherrer (2001:13): “Existing power positions influence the possibilities for discourse and interpretation in relation to a foreign model”, i.e. the question of which country with which institutional structure should be considered as a model for the solution of the problems in the receiving country.

In this connection, the role of elites is rightly pointed out. They play an important role in interpreting the situation within their own country, and they also play a significant role in contacts between countries, partly because of their professional internationalism and partly because of their educational advantage which gives them greater access to information and greater credibility in interpreting this information.

On the other hand, power constellations also affect the relationship between the country transferring the solutions and the country adopting the solutions.

The weaker country will be more willing to learn than the stronger country. This is not only because the apparent success of the stronger country makes it more attractive. The stronger country, or its major active participants, can also mobilize greater resources and incentives to promote the adoption of their institutions.

(Scherrer 2001:14)

The instruments of power naturally include money, for example, in the award of subsidies for the penetration of foreign e-government settings by a country’s own experts, then influence, for example in the allocation of roles in international committees, which can be increasingly significant in e-government due to the growth in international co-operation, and finally preferential treatment in the formation of coalitions in international negotiations, for example on questions such as standardization, interoperability and international e-government services.

A clear understanding of these conditions and the interest and power constellations which determine actions will help to foster a more relaxed approach in the co-operation between the countries which are transferring or adopting the solutions. A greater awareness of these circumstances will enable a win-win situation to be achieved in which the transfer of expertise, and even joint problem solutions, can be aimed for to ensure that co-operation will benefit all sides and thus prove to be the best problem-solving strategy.
Notes

1 “New approaches to benchmarking in e-government are needed as well as research into the economics of e-government with a view to a better assessment of benefits and performance of e-government.” (EU Commission 2003:21). Among the urgent future challenges the OECD mentions “further co-operation on efforts to measure demand, costs and benefits for e-government initiatives” (OECD 2003:157).

2 imode is NTT DoCoMo’s mobile Internet access system. “imode” is also a trademark and/or service mark owned by NTT DoCoMo. The “i” in “imode” stands for information, Internet, etc. (http://www.eurotechnology.com/).

3 Outside the sample there are countries that are working to disseminate the electronic signature such as Austria and Estonia.

4 This result is quite known: “It is relevant to note in this regard that NPM-type reforms succeeded best in countries with broadly congruent cultures and institutional frameworks propitious for the task, but also with affinity to those of the country of origin (e.g. Anglo-Saxon countries)” (UN 2001:59).

5 Similar approaches can be found in transformation research, i.e. research into the conditions and methods by which state Socialist structures developed into a market economy and democratic structures in the countries of Eastern Europe in the early 1990s (Stark 1997; Murrel 1992).

6 Grabow et al. (2002); Socitm and I&DeA (2002).

7 See the considerations expressed in the introduction to this book.

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