

# E-service to Citizens and Companies in Rural Areas

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## **Abstract**

*The county of Västernorrland and Jämtland, like most of the remote and rural areas in the Northern Periphery, face common challenges consisting of limited economic resources, high sickness rates and major recruitment needs in the future. Developed e-service may be one of the solutions to these problems: a solution especially well-suited to sparsely populated areas. In this paper, we have summarized the exciting current challenges and opportunities in the domain of e-governmental services and indicated some areas of special interest for promoting the transition to an information society with enhanced e-services for the rural citizens. There are increased interest in e-service and the will to improve the services offered to citizens and the business community.*

## **1. Introduction**

The internet created a new global world of free exchange of ideas, interests, and transactions. Whether reading movie reviews and weather reports from around the world online, participating in medical-related support sites, or taking an online course from a distant university, the internet user enjoys amenities that in the space of less than a

decade have become so vital that many people now view them as routine and available, like electricity or water service. Internet access and telecommunications are not always high priorities for rural residents, who may be more focused on maintaining a treasured way of life than on trying to fit the cast of a Digital Society.

By themselves, capitalism and new technology are powerful forces for social change. Each now feeds upon the other and reinforces the tendency of the other to produce change (Jørgensen & Klay, 2001). Far more than being just another managerial trend adapted from the private sector, e-government may have broad implications for the economy, individual liberties, and democratic processes (Harris, 2000). Despite the great implications of technology and the Internet, few studies of e-government provide a detailed description of the implementation and implications of technology in the Sweden.

Holliday (2002) discusses the implementation in East and South East Asia of e-government and e-citizen. He is looking in to the possible reduction of independency and power of national governments and public sector organizations (are the states in

a crisis?) due to influences of a focus on and power of global networks (cf. the work of Castells, 2000, and his discussion of Cisco Systems' network based business concept).

## 2. European Union

European Union (EU) recommendation is governments and public authorities must use new information technology to modernize public administration, improve services and add value to the lives of EU citizens. E-service appears to be an increasingly attractive alternative to standing in line at a government office. As more people have access to ICT and the Internet, they will be able to access public and commercial services otherwise unavailable to them. This increased access by citizens and communities will also generate markets for e-products and e-services, thus offering opportunities for improving the local economy and job prospects. The public sector will benefit because it will have a

strong reason to re-engineer their front and back offices to provide more efficient and cost-effective services with a view to achieving cost reductions and/or better service offerings thereby improving citizen satisfaction in rural area. Thus, it may be argued, the development of e-communities is a critical pre-requisite for e-democracy and e-participation. We will suggest a broad conceptual framework for observing a possible evolution towards e-governance for citizen's in rural area.

It has been widely discussed whether e-service is the solution to the problems of remote and sparsely populated areas in Europe. This opportunity to strengthen these areas by utilizing ICTs has been heavily emphasized by the EU and national governments and regional authorities as well. One of the focuses of EU's economic development policy is on providing the rural, peripheral and sparsely populated areas with new tools for development. The development activities concern areas as in Table 1.

**Table 1.** Rural development activities.

• Regional development strategies	• Social integration in rural areas.
• Regional networks and information services	• Competitiveness of existing SMEs
• Public local access points	• Training activities/technical support for businesses
• Tourism	• Telework opportunities
• Distance education (e-learning)	• Telemedicine
• Economic development policies for rural areas	• Attracting footloose industries
• Provision of public services (e-service)	

## 3. Sweden

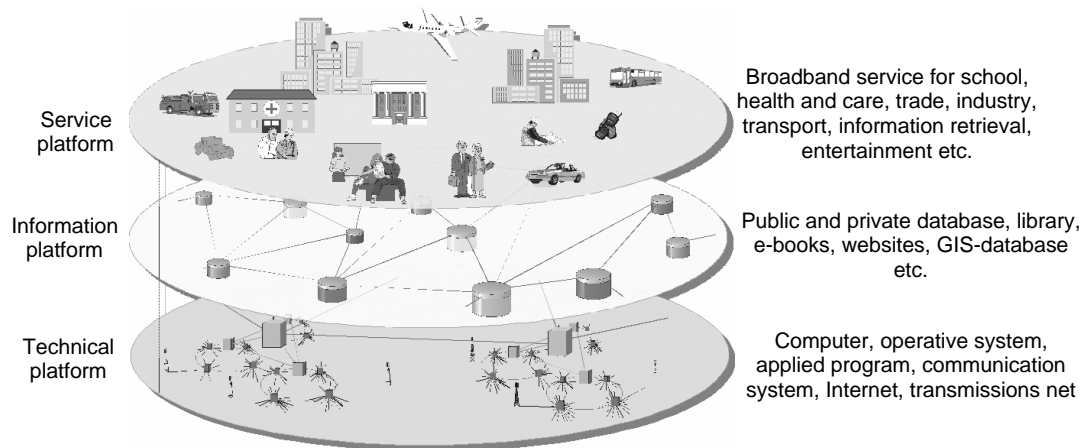
Internationally, Sweden is one of the leading countries in the use of personal computers and the Internet. More than two thirds of the population between 18 and 64 years has a computer at home. More than 80 per cent have access to the Internet from home, at work or at school. Today, almost all public agencies have websites and all public

officials can be reached by e-mail or Internet (Statskontoret, 1999, 2000; Östberg, 1999).

In Sweden most of the projects designed for rural areas are about building a broadband infrastructure and creating regional networks. In most of the projects the role of local or regional authorities is more or less decisive, even though the principle of partnership is widely applied.

Only few projects are explicitly directed to meet the challenges and solve the problems of rural or sparsely populated areas. Focus of development of ICT have been concentrated on technical infrastructure (e.g. computer, operative system, applied program,

communication system, Internet, transmissions net) whereas service on broadband for school, health and care, trade, industry, transport, information retrieval, entertainment have got less attention, present in Figure 1.



**Figure 1.** Platforms of Digital Society.

### 3.1 Capacity to provide interactive e-services

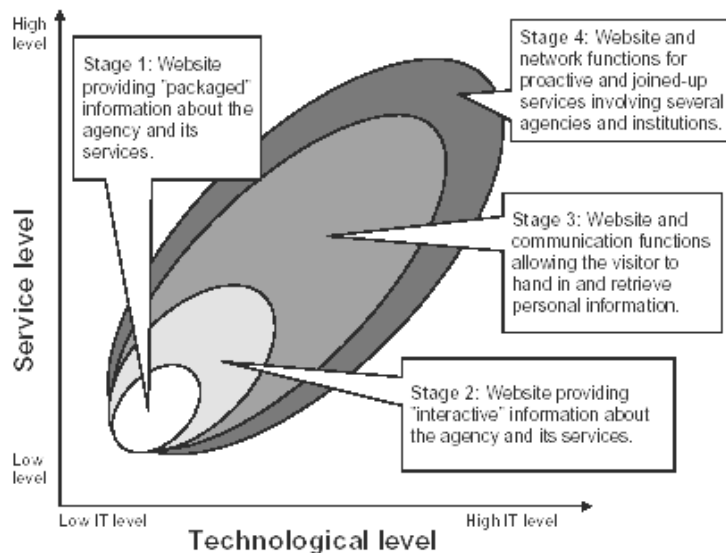
There are some fundamental assumptions underlying the current interest in extended use of e-governmental services. Arguments for such a transition include improved accessibility for the vast information resources managed in the public sector, simplifications for the public obtained by integrating the public administration into a virtual 'one-stop shop' for the citizen and a general improvement in the quality of service offered to the citizens. At the same time, it is assumed that the total cost for this development of e-services should not increase the expenditures, as compared with the traditional operation of the public administration. There is both a push and a pull side for e-government initiatives in the current development of ICT. (Karlsson & Hägglund, 2004)

Public information and services should, as far as possible, be available electronically 24 hours a day seven days a week. This is the goal of the Swedish Government Policy for developing 'a 24-hour Public Administration' - the Swedish model for e-government (Statskontoret, 1999). Accessibility, irrespective of time of day and geographical location, may be achieved through a range of established service channels. Accordingly, criteria for the concept of the 24/7 public agency must focus on the web service channel, while e-services included application of one or more of the following service channels:

- Manned telephony services (call centres).
- Unmanned telephony services (automated attendants and service telephones).
- Web.
- E-mail.
- Public information booths.

- EDI (Electronic Data Interchange, i.e. computer-to-computer communication).
- Interactive digital television.
- Electronic payment transactions.

Scope for providing interactive e-services is affected by available technology and infrastructure. The combination of service and technological levels provided by an agency in its service range determines which of the four stages of development the agency has reached, according to Figure 2.



**Figure 2.** The framework for e-service on Web (Statskontoret, 1999).

The ways of implementing the application of criteria regarding the 24/7 agency concept to yield an operational tool for the agencies further work of developing e-services, resulting in improved accessibility and enhanced service quality. To permit comparisons between agencies, quantitative and qualitative qualifiers can be applied to all stages in the development process, making it possible to decide how far an agency has progressed, in terms of these stages, in its various areas of activity:

- The transaction-related information provided.
- The general information provided.
- The general information presentation.

### 3.2 Challenge for managing the service efforts for citizens and companies

A crucial issue in the development towards new ways of managing the interaction between citizens and the public administration is to make the encounter comfortable with equal opportunities and conditions for everyone.

A special challenge in this area is that the society must guarantee every citizen equal access to the services offered, which means that the ICT solutions employed either must be effectively usable by everyone or else that alternatives are offered in a cost-effective way. Internet, or the equivalent communication structure, will play a crucial role in this development and the provision of

net access for everyone is absolutely essential in the future information society.

For the public administration this presents a severe and potentially expensive problem, both for managing documents in different languages and for communicating with citizens, who do not manage the official national languages very well. Governmental information should be accessible for everyone (Sandberg & Sundberg, 2004).

Service-oriented efforts on the agencies' part are continuing. Citizens and companies can choose between an increasing numbers of channels to the agencies. Most agencies today have home pages with e.g. a news service, basic information on the organisation and its activities, and contact addresses. There is also usually information material, handbooks and information for guidance. The home page of the National Board of Student Aid contains both basic information and services; for example one can order forms, ask questions via the Webpage, calculate the amount of study support one is eligible to receive or obtain a personalised computer reply. The National Tax Board has a broad range of guides concerning taxes, enforcement service issues and civil registration. The National Police Board, the Board of Customs and the National Road Administration have laid the emphasis on news, basic information and general guidance. Most of the county pages there are links to municipalities and other sources of information about the county concerned. The National Environmental Protection Agency, the National Board of Health and Welfare and Statistics Sweden have further developed their services on the Net. The Environmental Protection Agency can, on the basis of its role as a 'information provider', supply a broad range of facts on various environmental issues. The National Board of Health and Welfare has various fact databases, and has included information

for patients in its database of medical facts. This also contains descriptions of health-care programmes and treatment, aimed at giving patients a better chance of understanding and influencing the treatment they are offered. The School Computer Network is the National Agency for Education's big investment, which primarily serves teachers and pupils. The National Road Administration's and Vehicle Register's corresponding service contains both a service telephone and order fax, and covers orders for register entries, tax stickers and registration plates. The next major joint step in development will be the introduction of an electronic archive and document-handling support, which is aimed at facilitating handling and enhancing the service level.

The Swedish National Labour Administration web based Job placement service. Statskontoret (2000)

Surprising enough, e-learning on the net has not yet become major method for labour market training and retraining. Røjdalen, et al, (2004), give examples on the efficiency of a new form of IT based distance learning for unemployed females in rural areas.

### **3.3 E-service in rural areas**

Many rural communities have a strong need for e-services, but the need has not yet translated into economic demand that can be seen by service providers as a signal to invest. With its connections through training to many local companies, its connections through human services components to public sectors, and its access to learning and technology resources, the community college is in an ideal position to assess and aggregate demand (Sandberg, 2003).

ICT have reinforced the disadvantages of rural areas. Advanced digital communication has become integral to almost every kind of business activity and a prerequisite for

competitive advantage in nearly every industry, as well as dominating many cultural and social activities. At the same time, providers of communications services have become increasingly concentrated in urban centres whose dense markets promise a higher return on investment, shutting out rural areas from the innovations that were supposed to produce a rural renaissance. A series of reports on digital access shows that more rural people have computers and access to the internet than ever before (Strover, 1999). But increases in access do not mean that the digital divide is closing (Nilsson, 2004). Instead more advanced forms are making basic access obsolete and creating a new digital divide characterized by disparity in speed, quality, and capacity of Internet access.

Lack of high-speed connection is a particular disadvantage to business users in rural areas. Providers of advanced communication services are reluctant to invest in less populated areas, where their return on investment is uncertain. Yet rural markets clearly have a need for these services, even if that need is not translating effectively into demand. The digital disparities create clear disadvantages for rural areas, both economically and in rural citizens' quality of life (Nilsson, 2004). The risk is that society will be divided in those who have effective access to e-services through Internet, and those who do not have access. Internet is also becoming an important channel for governments to diffuse information and e-services. A low access will not give citizens equal opportunity to democratic decisions, e-government services and public information. (Karlsson & Hägglund, 2004).

## **4. Rural case**

### **4.1 Methodology**

It is built on a documentary analysis of literature concerning the issues of e-service and administration, examined various web sites of government and cities including our case studies in order to have a broad understanding of contents and services available at the time of the study. Due to the lack of previous research within the area, the boundaries between phenomenon and real-life context are not clearly evident. The case study approach allows the development of an in-depth empirical inquiry of the subject. Data for this study includes a variety of personal experiences of the co-authors, interviews of carefully selected individuals.

### **4.2 Analyse**

This is an appropriate occasion to provide answers to six thematic questions about rural development. The answer is a mixed in advantage and disadvantage of ICT and e-service.

*Will ICT advances be available in a timely manner?* In the longer run, the emergence of competition will bring technological advances to rural area. Entrepreneurial competitors will bring ICT and the threat of competition may make incumbent providers more responsive to rural needs. The area will need regulatory protection during the transition to new regulations that hopefully will provide incentives to make timely and cost-effective rural information technological advances.

*Does ICT involve economies of scale and scope that will enable rural businesses and communities to adopt these technologies?*

Rural communities with advanced telecommunications become more effectively integrated into the global

economy. They thus lose some of the rural disadvantage of small market size and large distances, because their businesses have access to larger markets. At the same time, their exposure to national competition increases.

*What are the expected economic effects of ICT in rural areas, particularly on employment and investment?* ICT alone will not bring about job creation, but can be an important catalyst. With adequate information technology, rural communities can establish, expand or recruit a wider range of businesses offering goods and services to larger urban markets. Rural communities can use the rural advantages of quality of life, attractive natural environments, and lower land and labour costs to improve their economies once the economic disadvantages of distance and small market size are reduced by ICT. With strong local leadership, rural communities with improved information technology have the opportunity to attract the capital for further investment and have improved access to training. Rural businesses must understand the paradox of creating more jobs by being more productive and thereby attracting larger markets. If they resist improving the information technology in their businesses in a short-sighted attempt to save jobs, they will lose even more jobs by losing market share. Information technology is a double-edged sword for rural communities. If they do not adapt to the new technologies in ways that make their businesses operate with lower costs and achieve larger market size, then they will lose to competitors elsewhere that do. The technology can reduce two of the major problems for rural business, distance and lack of scale, but they do not bring an automatic advantage. Once the playing field is more level between rural and urban, rural players must work hard to succeed in that tougher competition.

*Which rural areas are likely to have the greatest ability to make use of ICTs?* Those rural areas with the local leadership needed to help guide their communities through a difficult time of transition and to encourage a rural culture of entrepreneurship and risk-taking will fare best. Most rural communities have native sons and daughters who would love to return home, if only they could support themselves and their families there. Rural communities, by definition, have less congestion than urban locales, which makes them attractive to those seeking to escape urban congestion. Some communities will welcome newcomers and prosper. Others will resist and decline. The rural communities with the greatest potential are those with attractive natural environments and climates or those that can add more value to local products before exporting them. All rural communities have advantages. What will distinguish the successful ones from the less successful will be local leadership and vision?

*What roles can the various levels of government play in fostering ICT?* The government is a major player setting the national framework for the current telecommunications technology transition. The governments have a particularly large role to play in helping use ICT for rural development. For rural communities and rural counties, local government is particularly important because rural people can use their own governments to achieve local goals. Successful rural distance learning projects depend on the leadership of local school districts. Rural governments can make their information more accessible to their constituents through local computer bulletin board or Internet access. Local schools and community colleges can provide the training needed to help local residents and businesses take advantage of new information technology. Local rural governments can be a focal point to bring to

the attention of state government the issues that affect rural people, but cannot be resolved with local jurisdiction.

*Can rural area expect to be competitive serving national and international markets for the goods and services of this new era?*

Rural area will have an equal or near-equal opportunity to compete for national and international markets. Rural area cannot reasonably expect to be competitive unless, like their urban and international competitors, they work aggressively to reduce costs, improve quality and become rapidly responsive to the changing needs and desires of their customers. Improved telecommunications alone will not make rural communities competitive in national and international markets. They will have to find and make their own competitive advantages. Telecommunications reduces the disadvantages, so that they have an opportunity to compete. Flexible business networks connecting small rural manufacturing businesses can permit them to respond collectively to larger orders that otherwise would go only to large businesses. Better communications will permit them to stay in closer touch with customers and suppliers. It will not be automatic and it will not be easy, but rural America will have the opportunity.

## **5. Summary and conclusions**

Main concern in the e-service area is citizen expectations. A common question from citizens regarding e-services is, "Why don't you just put it online?" Technology magazines are replete with stories of city governments that have put permit applications online, and allow free payments and billings online. Research by the County of Västernorrland and Jämtland demonstrated that the decision to provide e-services could not be taken lightly.

As with most qualitative analysis, the emphasis of this study was to develop an understanding of the process and context of development of e-service in the rural areas we studied. Our findings should be generalized cautiously, and subsequent studies may suggest expanded or modified findings. Given the popularity of the e-service movement, we hope that others will conduct complementary research and cross-sectional studies to expand research in this area.

First of all, the framework presented by van Dijk and Hacker (2003) seems to be a suitable tool to handle and analyse access barriers in a structured way. Further on, the result of this analysis shows that there are a lot of questions, related to the use of ICT, which we have to deal with before the information society for all could be a reality. When we study these problems we find that they principally originate in the technology itself and in conceptions caused by the prevailing social conditions and paradigm. This is nothing unique for ICT, but also for most of the other technologies present in the society of today.

Some of these technological access barriers are out of reach for the individual users influence, while others could be possible for the user to affect, change or remove under specific circumstances. Horigan and Rainie (2003) assert that high-speed connections are the single biggest determinant of Internet use. I agree with van Dijk and Hacker (2003) who argues that the focus on the material access will not solve the problems with information inequality. Aspden and Katz (1997) claim that using the Internet, socio-personal development appears to be the key driver, while nonusers have a decidedly different set of beliefs about the value of e-service on Internet.

Rural businesses and rural residents are increasing their use of computers at a rapid rate. Small rural businesses throughout the country are finding that they need computer access to customers and suppliers.

Rural carriers should get regulatory authority to provide free or incremental cost backhaul, when they can provide customer service in that manner more cheaply than adding costs to the local switch.

Rural schools, much more than urban schools, need access to broadband video distance learning networks. Distance learning options are particularly attractive to rural schools with a shortage of science and foreign language teachers. Rural medical clinics and hospitals could particularly benefit from broadband telemedicine applications permitting medical consultations without requiring transport of rural patients to urban medical centres. Rural businesses could often benefit from access to business videoconferencing facilities. Rural businesses are likely to save more travel costs than comparable urban businesses because of the greater distances involved.

The benefits of ICT investment will only come to rural users when they have access to applications that will make a difference in their quality of life or the productivity of their organizations. Making applications accessible to users requires more than installing appropriate telecommunications networks. It also requires: (1) the availability of terminal equipment to attach to the networks, including computers and application software, (2) the information content or services that will be transported to those terminals over the networks, and (3) the availability of training and technical support services to teach users the skills needed to take advantage of the applications. Two new clusters of application types are now emerging in rural areas. The first is data

networking, electronic mail and Internet access. The second is distance learning (e-learning), telemedicine and videoconferencing.

These are somewhat more distant problems for telecommunications policy makers and local community leaders. It is difficult to see any major disadvantages with the rural application of e-government and e-citizen. The risks of the loss of power for the states are not applicable on the rural level. On the contrary, a wider application of e-government, e-learning and e-citizen are likely to strengthen citizen participation and local democracy. State and other form of public service will probably improve. Learning and developing local communities might evolve and stimulate and vitalize the life of rural communities.

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