

VINNOVA

**Growth area – E-services in the public sector
Analyses of the innovation system in 2003**

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1. The innovation system

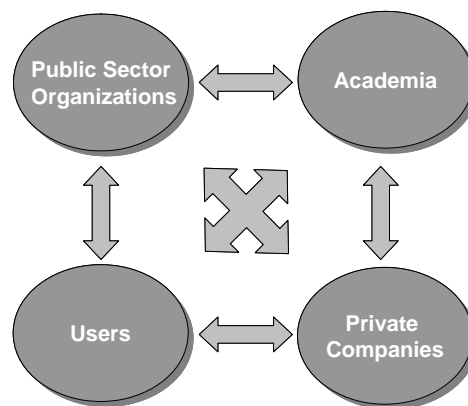
VINNOVA, the Swedish Agency for Innovation Systems, is drawing up a programme description for a new growth area "E-services in the public sector". As part of the preparations for this and as a basis for the description, four in-depth studies have been carried out of the growth area's innovation system. This document is intended to give a picture of the innovation system based on earlier activities in the programme description project and in particular the in-depth studies. As the source material is extensive, there is not enough space to include all the results in this brief document.

During the summer of 2003, VINNOVA carried out an initial analysis of the research requirements as a starting point for the programme (Andersson 2003). An inventory was carried out of the research environments within the area (Gustafsson 2003). The researchers were invited to a working meeting on 2 and 3 September in order to discuss the research requirements. Around 15 researchers from a range of disciplines took part (Grenblad 2003a). This resulted in four groups of researchers being commissioned to carry out short in-depth studies. On 4 November 2003 the studies were presented at a hearing in Stockholm in which around 110 people took part and gave their opinions (Grenblad 2003b).

The in-depth studies took place over a period of around five weeks in the autumn of 2003. They were based on the following perspectives:

- The user's perspective, Karlstad University (Enquist & Fredriksson 2003)
- Development and business processes in the public sector, Linköping University (Rapp et al. 2003)
- Incentives and control systems in the public sector, Örebro University (Bjurström et al. 2003)
- Companies acting as suppliers to the public sector, Stockholm School of Economics (Holmberg 2003)

In order to illustrate the different perspectives within the innovation system, the first step was to ensure that the studies covered the different groups of players, in other words the public sector itself, companies and users. Researchers as a group were not made the subject of the studies, as they were considered to be sufficiently well represented by the researchers who were carrying out the studies.



[Figure text: Public sector/Researchers/Companies/Users]

Figure 1: In addition to public sector organisations, the other players in the innovation system include academic researchers, companies and users (from several categories, including citizens).

2. The benefits of e-services in the public sector

There are numerous advantages to the introduction of e-services in the public administration. However, because of the current structures and incentives it is difficult to describe them. The studies identified a number of ways of demonstrating the benefits:

- If the public sector saves 10% of its costs, this amounts to between 60 and 120 billion Swedish kronor (Holmberg 2003). This can be compared with the Gävle local authority's estimate that 50% of its available time is spent on its core business [in contrast to administration etc.]. If local authority employees spend a further 4% of the time available on the core business, this will result in savings of 10 billion kronor in the local authority sector (Lundell 2003). The Swedish National Social Insurance Board has the objective of replacing 20% of its employees who are retiring by introducing improvements in efficiency (Bjurström et al. 2003).
- Nacka local authority has reduced the time available for parents to choose schools from five months to one month. As a result the local authority is making direct savings because the processing time is four months shorter. It is also saving money because the schools know how many pupils they will have for the next school year at an earlier date and can therefore plan more effectively. (Bjurström et al. 2003)
- The National Social Insurance Board has saved 84 million kronor by transferring its telephone enquiries system from a manual to an automatic service. (Bjurström et al. 2003)
- The National Social Insurance Board has increased its productivity, improved the benefits for citizens and speeded up feedback by using electronic forms. Around

50% of the manual forms previously used were filled in incorrectly and had to be returned. Approximately 95% of the electronic forms are now completed correctly. (Bjurström et al. 2003)

- Public sector organisations in Denmark are estimated to have saved 50 million Danish kronor in postage and 200 million kronor in other ways by sending information in digital format (Rapp et al. 2003).
- The public sector could act as a role model for the IT sector and Swedish business as a whole (Holmberg 2003).

Many of these changes are examples of single-loop learning (Agyris & Schön 1978), in other words doing the same thing as before, but in a better way. The last point indicates the possibilities of double-loop learning (Agyris & Schön 1978), in other words carrying out new activities which are better than the old ones. This also involves changing the organisations' theories of action and not simply making changes on the basis of and within existing theories of action. The studies indicate that very little knowledge is available about changes which involve double-loop learning in the public sector. Another way of expressing this is to say that too little external efficiency is in evidence (Enquist & Fredriksson 2003).

It is important to improve the knowledge of organisational learning and changes within the public sector. These include changes resulting from new theories of action and new ways of thinking within the organisations. In addition methods for analysing the benefits of public sector e-services must be developed.

3. Competition for the products of growth

Public sector web sites are used by large numbers of people in Sweden in comparison with similar web sites in other countries. During the course of 2002 around 57% of the population used these web sites (Mellor & Parr 2002). Using this measurement method the percentage is the highest in the world. However, this can be explained to a certain extent by the high level of Internet penetration in Sweden, which means that a high proportion of Swedes already use the Internet. A better measurement of the usage and therefore of the value of the web sites is the proportion of existing Swedish Internet users who also use public sector web sites. This shows Sweden in a less favourable light. In addition the content of the web sites must be taken into account. Simply providing information on a web site is not enough to put Sweden amongst the top-ranking innovative countries in this area. To reach this level more advanced services such as financial transactions are needed (see below).

"The major problem at the moment is not that we are developing high quality e-services for computer-illiterate citizens, but rather that we have poor quality e-services for experienced Internet users." (Bjurström et al. 2003)

The picture of the situation varies depending on who is describing it and how the description is formulated. For example, Sweden was initially in 93rd place following an international study of 2288 public sector web sites in 196 countries. In this case the ranking was based, amongst other things, on access to information and services, access for people with disabilities and foreign languages (World Market Research Centre 2001).

In 2003 Accenture has put Canada at the top of its world e-government rankings for the third year in a row, whilst Booz Allen Hamilton has identified Great Britain as the world leader. Sweden has a relatively narrow range of e-services on offer, but the few services available are extensively used (Rapp et al. 2003). If a large number of high-quality services were developed, it is likely that they would be a success and bring significant benefits.

VINNOVA's intention in this growth area is to promote sustainable growth. The definition of sustainable development which is generally used is that produced by the World Commission on Environment and Development (Gladwin, Kennelly & Krause 1995):

”...development which meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Growth in this context means primarily economic growth, which takes the form of higher GNP in the private sector (this definition is taken from VINNOVA's mission). This is the effect which VINNOVA wants to achieve. The way to do this is to increase efficiency and productivity by developing innovations. New solutions will create added value and also free up resources which can be used to create other innovations using different methods and in different locations. The way in which growth-promoting activities relating to innovations and business are measured involves both "up-scaling" and "down-scaling" scenarios. Up-scaling consists of producing more value or output, while the resource levels (measured in financial terms) remain the same. Down-scaling involves reducing the amount of resources used whilst keeping output at the same level. Both types of scenario are needed in the public sector.

For example, in order for Sweden to be able to export e-service solutions for the public sector, it must play a more prominent role than its competitors. As a result even the tax authorities are exposed to indirect competition, because they must contribute to the development of Swedish e-service solutions which can be exported. Otherwise buyers from abroad will choose, for example, the solution on offer from Great Britain's tax authorities. Although Sweden has a good reputation for IT development in the private sector, the situation in the public sector is quite different.

Nacka local authority has said that it has been praised simply for making a form available on the web. This is certainly a step forward. However, as there is still a great deal more to be done, this seems to be too modest an achievement to merit praise (Bjurström et al. 2003).

When compared with other countries, Sweden does not play a leading role in the field of public sector e-services. In order to be able to generate growth from exports, Sweden must rapidly develop its innovative capabilities.

4. Change

It is easy to see yourself and your country as successful, because this is a desirable state to be in. In this innovation system a "wait and see" attitude is prevalent, in other words a lack of understanding that things must change and a lack of the will to make the changes happen (Bjurström et al. 2003).

As e-services in the public sector are still in the early stages of development, it will be relatively easy for Sweden to continue to move up the international rankings. This of course assumes that levels of activity will continue to rise. However, if Sweden continues to be passive, the gap between Sweden and the leading nations will grow.

The change which must take place does not involve improving the way in which things are currently done. It is about doing different things and improving the efficiency of the entire organisation and public sector. External efficiency must be taken into account as well as internal efficiency (Enquist & Fredriksson 2003). For this to happen, we must move from supply-controlled to demand-controlled e-services (Grenblad 2003b). In the light of the new technology, this means that suboptimisation of the public sector has started during the course of the year. Although new technology is making change possible, changes to business processes must be oriented around the needs of citizens (see below).

In order for the changes to be implemented successfully, the services being developed must take into account the requirements which must be fulfilled when the services are ready for use in a few years time (Rapp et al. 2003). Otherwise the situation will remain as it is today and no major changes will be made. Extensive change is needed and it must be managed. In order to succeed it must be broken down into partial objectives (Enquist & Fredriksson 2003). There are also some obvious faults in the system which must be rectified (Bjurström et al. 2003).

A number of restraining forces must also be overcome. This makes good management even more important:

- Organisational change (what to do with the additional time available etc.)
- Competition issues and a divided view of the system
- Management problems (returns on investments etc.)

The process of analysing the current situation and the changes needed can be simplified by using a range of descriptive models which cover, for example, the complexity of the service as a whole, the complexity of the process involved in handling the cases and the degree of customisation needed for individual citizens (Rapp et al. 2003). Another approach is to start from the added value which the e-services provide. This also makes it easier to calculate the benefits and prioritise the measures to be taken (Bjurström et al. 2003).

One obvious change which is taking place is that there are fewer people available to work in the public sector, at the same time as the need for staff is increasing, for example in geriatric care (Holmberg 2003).

It is important that there is a general understanding that fundamental changes must be introduced rather than improvements simply being made to the existing ways of doing things. Managers need support to help them face the major challenges involved.

5. 2013 scenarios

The studies have produced a number of possible scenarios for 2013, some of which are conflicting and some of which overlap:

1. The "e-service model" involves putting citizens in the driving seat and orienting the processes around the citizens' search for information, rather than that of the service provider. Public sector employees will therefore not act as middlemen or gatekeepers who allow access to the information and services. Instead they will provide support for citizens to help them to find the information themselves and use the services they need. (Bjurström et al. 2003)
2. "Network administration" involves autonomous public authorities with their own areas of responsibility which collaborate with one another in the ways that they think best. The system functions on the basis that each organisation is responsible not only for its own area but also for the entire public sector. Citizens' requirements are met by means of cooperation on producing, for example, standard interfaces to the services (Rapp et al. 2003).
3. The "user entrance" involves users such as citizens, companies and foreign organisations having one customised shared entry point to the entire public sector. The information and services which users access are organised in a standard way and the underlying technology is designed in such a way as to support this. A user-focused view of reality replaces the focus on the service providers. One result of this is that citizens do not notice and do not need to know which organisation is primarily responsible for the respective services. The system "functions very simply". Users also do not need to be aware of which authority or

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- authorities are implementing the services. One example of a solution of this type which has already been put in place is *Government on Line (GoL)* in Canada (Rapp et al. 2003; Bjurström et al. 2003).
4. The "information hub" involves certain aspects of public sector services being taken over by a new organisation which takes a central role like that of a hub. Activities previously carried out by individual citizens, such as contacting different authorities and providing information on forms to the individual authority responsible for handling the case, have now been taken over by the central service provider. This change has been necessitated by the fact that public sector services must be based on users' needs and not on the needs of the public authorities themselves. As it would not be feasible to establish a network of organisations all of which communicated with one another, a central database is created which is run by a new organisation. The database contains all the information which users need, organised in a standard way and accessible to all the public authorities. A development of this kind is currently underway in Denmark (Rapp et al. 2003).
 5. "Outsourcing" is used by an increasing number of public sector bodies which employ private companies and other public organisations to carry out parts of their business. Examples include scanning documents and call centre services (Enquist & Fredriksson 2003; Rapp et al. 2003).

6. Standards: information, IDs, signatures and authorisations

According to both public authorities and private companies, unsatisfactory standards play a significant role in hampering development. Different types of standards are involved. Some are drawn up by administrative bodies such as a national or international standards committee or a consortium of companies. These are so-called *de jure standards*. Typically the private sector does not have any influence over these standards in legal terms. There are also standards which are not drawn up by administrative bodies, but develop on the basis of a particular method which is used by a large number of organisations. These are referred to as *de facto standards*. It is not necessarily true to say that standards produced in the ways described above are better than other standards. This may be because it is difficult to replace established standards with newer and "better" ones. Standards do not necessarily restrict competition provided that they are open and can therefore be used by a large number of suppliers (Krohwinkel-Karlsson 2002; Glimstedt 2002).

The players in the innovation system are asking for a *de jure* standard which involves the government determining how different aspects of public e-services should be designed, with security solutions being of primary importance. This can be seen as a request for input in the form of resources for standards. If these resources are not made available, than fewer new solutions will be developed. Public sector organisations have stated that security is one of the critical factors (Rapp et al. 2003; Holmberg 2003; Bjurström et al. 2003). Further evidence that this really can have a negative influence is the "output", in other words the existing e-services. The Swedish Agency for Public Management has investigated this issue and the results show that, for example, only 9% of authorities have services involving financial transactions, whilst 77% offer services involving forms. Considerably fewer services which require security solutions are currently available than those which do not. One major restrictive factor is the ability to include an electronic signature. Another related problem is electronic authorisations (Rapp et al. 2003). Citizens also seem to have an understanding of the importance of the security aspects. In

studies on public e-services, personal integrity and security come near the top of the list of issues which citizens worry about most (World Market Research Centre 2001). Around 66% of the adult population of Sweden feels that public sector web sites are not secure (Mellor and Parr 2002).

One objection raised is that existing solutions are available, for IDs for example. However, this depends on what is intended. Sweden does not currently offer its citizens a security solution which fulfils the requirements of the European directive (EC 1999) on qualified electronic signatures:

"Only Finland currently offers its citizens the opportunity to buy an electronic certificate which meets the requirements of the directive for qualified electronic signatures, in other words a national EID card." (Ferm 2003)

The Swedish alternative currently in use is not a "qualified" electronic signature in accordance with the directive, as the certificate is part of the software and is not on an independent medium, for example a citizens' smart card. In the context of SAMSET (a Swedish government project on electronic IDs and signatures) a standard security solution has been developed by the Swedish National Tax Board, the National Social Insurance Board, the Patent and Registration Office and the Agency for Public Management. Suppliers which have a general agreement with the Agency for Public Management for this existing Swedish solution include BankID, Nordea, the Swedish Post Office and Telia. Citizens can choose one of these suppliers and use the ID with service providers which follow the SAMSET recommendations, for example the National Tax Board. These solutions, which provide a lower level of security, are expected to be in use for at least two to three years. The security level is considered to be adequate for many applications. In addition the Agency for Public Management is a member of a network managed by the Nordic Council of Ministers which is working on electronic communication, but only between different authorities (Ferm 2003).

Canada, which is the leading country in this respect, has at an early stage drawn up guidelines (the *Privacy Impact Assessment Policy*) on integrity and security in the e-services which are being developed (Rapp et al. 2003). In Sweden there is a great deal of uncertainty in this area amongst all the groups involved in the innovation system. The public sector, private companies and citizens are not satisfied with the current situation. Of course Swedish public bodies have the option of buying in solutions for qualified electronic signatures, as the technology has been available for a number of years, but a standard Swedish solution has not yet been chosen. Therefore none of the organisations wants to take the initiative and risk investing in the wrong system. Instead they are waiting to see what happens. One county council has the following message for users on its web site (Bjurström et al. 2003):

" We cannot take responsibility for Internet security."

In addition to security, a uniform approach is also needed in other areas such as archiving, data and information, user interfaces, models for evaluating the authority and the e-services, models for calculating profitability and models for handling user complaints. These things are needed partly in order to achieve the objective of developing user-focused services and partly to avoid reinventing the wheel in every individual organisation (Bjurström et al. 2003; Holmberg 2003; Rapp et al. 2003; Enquist & Fredriksson 2003). Another related issue is the difficulties which local authorities have in selling their innovations to other authorities because of the way in which the law is formulated (Bjurström et al. 2003).

Sweden must establish and publicise a uniform solution including both legal and technical standards for public e-services, particularly in the area of security, relating to identification, signatures and authorisations.

7. Users/citizens

One aspect which all four studies have in common is the emphasis on the fact that the citizen must play a more central role than is currently the case. As mentioned above, the political system does not provide sufficient guidance for the public sector on the issue of e-services. In addition there are very few opportunities for dialogue between citizens and the developers of e-services (Enquist & Fredriksson 2003). Citizens who use e-services must be able to influence both the type of services being developed and the way in which they are designed. Currently the service providers have far too much control over what is done and usability studies of public e-services are rarely carried out (Rapp et al. 2003). There are very few methods and measurements involving the users of e-services in the Swedish public sector.

"Authorities often act in their own self-interest, not only for financial reasons but also because this has traditionally been their role. The electronic administration has not achieved its main objective because changes have not yet been made to the driving forces behind the system." (Bjurström et al. 2003)

Business strategies and processes must be oriented much more around the citizen. In addition a culture of service must be created. There is a risk that the current focus on the service provider will remain unchanged, and that an electronic interface will simply be added to existing processes. In order to ensure that services are genuinely oriented towards meeting citizens' needs, attention must be focused on the development of business, organisations and systems. Technology alone cannot resolve the problem (Enquist & Fredriksson 2003). In some cases it can actually aggravate the problem by further consolidating an existing negative situation (Bjurström et al. 2003; Enquist & Fredriksson 2003; Holmberg 2003; Rapp et al. 2003). The services will offer better value if internal processes are changed rather than an electronic user interface simply being added to existing processes (Rapp et al. 2003).

There is a need for a business language to be developed which is common to all the organisations. However, this may cause problems in interacting with citizens. The use of language in communications between organisations must also be formalised (Rapp et al. 2003).

From the citizens' point of view, the current web sites are not user friendly. They have confusing structures and are hard to navigate. As a result the organisations are not even achieving their own objectives (Rapp et al. 2003).

The generation of growth must have the user as its starting point. *Sustainable* growth indicates that individuals' choices should be widened, that environmental, social and economic dimensions should be regarded as being mutually dependent, that there must be age and race equality and that there must be protection against chronic threats and damaging influences (Gladwin, Kennelly, & Krause 1995). From this perspective it is hard not to take the user as the starting point.

Furthermore user orientation can be regarded as a route towards growth. Demand from users and the usage of the services in question are prerequisites for growth. In order to use a service the citizen/customer must believe that there is a net benefit to be achieved, in the form of the estimated added value minus costs/sacrifices. It is important that the service provider also benefits/profits from the activities required by the citizen, so that there is a win-win relationship (Enquist & Fredriksson 2003).

In some cases users find that personal contact is valuable and in other cases it is perceived as irritating. One example of a situation where users may find a lack of personal contact beneficial is information on the web about certain illnesses (Bjurström et al. 2003). Users must be involved in selecting the services which are to be converted to an automatic format. The descriptive models of services are useful in this respect, for example the degree of personal customisation (Rapp et al. 2003). Some services are not suited to electronic channels, such as the Internet and mobile phones. In these cases multi-channel strategies may be necessary (Rapp et al. 2003; Enquist & Fredriksson 2003).

There are many different types of users, including citizens, private companies and public sector employees (Enquist & Fredriksson 2003). The orientation towards users and citizens which is referred to throughout this document should be regarded as being of central importance.

<p>The focus of structures, attitudes and processes must be moved from the service provider to the citizen. It is essential that there is a move towards user orientation.</p>
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8. Control and management

In the sections above we have seen how cooperation, security and a focus on the citizen in particular are lacking. One cause of this may be that the control and management of changes is inadequate and needs to be restructured:

- IT issues are handled at too low a level within the organisation (Rapp et al. 2003; Enquist & Fredriksson 2003; Holmberg 2003).
- IT issues are handled separately in purely technological terms and are not integrated into organisational issues. (Rapp et al. 2003; Enquist & Fredriksson 2003; Holmberg 2003).
- The external control of organisations is far too weak and passive. The Government must take a greater responsibility (Bjurström et al. 2003).
- The existing control systems are not adapted to digital administration (Bjurström et al. 2003).

A central body is needed which will clearly specify which technical standards must be used. The existing recommendations do not provide sufficient guidance or security to allow organisations to act. The situation may be improved by the *Swedish Board for Electronic Administration* which is being set up on 1 January 2004 with the aim of "establishing common standards for electronic communications within the public sector and between public sector organisations, citizens and private companies". The chairman of the board is Alf Nilsson, director general of the National Tax Board (Törnqvist 2003a).

The *Delegation for the Development of Public E-services*, chaired by Eva Fernvall, has the objective of promoting collaboration between the state, local authorities and county councils and between the public and the private sector (Törnqvist 2003b). One issue related to collaboration is the financing of services where the benefit goes to an organisation other than the service provider. This has hampered development and needs to be managed more effectively (Bjurström et al. 2003). In Sweden there is no one

responsible for coordinating work on a user interface which will benefit citizens, with the result that the only recommendations in place have not been followed (Rapp et al. 2003).

Gunnar Lund has stated that the directors of the organisations must collaborate laterally in order to maintain levels of confidence. This is essential because more and more issues are arising concerning services for individuals and private companies, rather than the application of the law (Rapp et al. 2003).

Against this background it is clear that there is a major discrepancy between what is being said in the course of the dialogue with the public and what is actually happening, as the studies have shown that considerably more must be done. The consultancy Booz Allen Hamilton also stated that the lack of central management and the lack of joint efforts is a weakness in the Swedish system, and that the current culture of independence is slowing down the pace of development (Rapp et al. 2003). For example, in the studies county councils said that they did not consider themselves to be the target group for the "24-hour authorities" (Bjurström et al. 2003).

All these autonomous bodies, including public organisations, county councils and local authorities, must be coordinated. One initial step may be to put the following organisations in order of priority: the Swedish National Road Administration, the National Tax Board, the Enforcement Administration, the Patent and Registration Office, the National Food Administration, the Central Study Support Board, the National Social Insurance Board, the National Labour Market Administration and the National Police Board. The Agency for Public Management has identified 40 different areas which cannot be handled electronically because an extract from the records is needed to be able to process them. The authorities referred to above have the majority of the information needed in their records. Coordination between them could produce rapid results, for example in the scenarios described above (Rapp et al. 2003).

Guidelines and consensus discussions are apparently not sufficient. For example Canada has a "CIO for the government" who is responsible for the public sector as whole and can

ensure that things happen. This is important where the incentives for the different organisations vary (Rapp et al. 2003). It should be taken into consideration that the prerequisites also vary, for example between the National Tax Board with 14,000 employees and the smallest public authority with 1.75 employees. There is also a wide variation in the sizes of the local authorities (Bjurström et al. 2003). In addition because Swedish citizens often move from one area to another within the country, it is important that local authorities coordinate their e-services to ensure that they have uniform interfaces (Rapp et al. 2003).

For financial reasons the digital administration also needs a greater degree of external management. The investments have to be made now, but the profits will be made in a future budget year. The investments may be too great to be accommodated by the organisation's normal budget. They involve money being spent, whereas the benefit may take the form of advantages for society or individual citizens. There may be very few benefits for the organisation itself. In addition a new form of management is needed which monitors the benefits for citizens, the efficiency of service processes and the efficiency of the entire sector. The existing management is designed for the existing way of working. Now that a fundamental change is needed, the current management is preventing the necessary changes from actually taking place. There are different groups working on collaboration, but there is no one with the authority and financial resources to make things happen. For example, Sverige Direkt, which has three employees, is doing its best to create a common entry point to the public sector in Sweden (Bjurström et al. 2003).

<p>Central management must be more clearly defined. In many cases this is an urgent requirement, in particular with regard to infrastructure/standards, the orientation around the needs of citizens and collaboration between different organisations within the public sector, and between the public and private sectors. This central body must be able to make decisions (and not just discuss issues and make recommendations). It must also be able to allocate financial resources to measures covering the whole public sector.</p>
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9. Collaboration between the public and private sector

The experience of companies is that the Public Procurement Act makes innovation in the area of public e-services more difficult. Primarily the act prevents the natural communication which is necessary in this situation from taking place. Given the complexity of the solutions which are needed, a large amount of information must be passed between purchaser and vendor. The act is badly designed in this respect. It is based on transactions in which purchasers formulate a specification describing what they want to buy, and vendors respond by making an offer. This is a method which works adequately for the procurement of buckets and mops, in other words standard goods and other products which are easy to describe. In order for innovations to be introduced, there must be cooperation and more open communication between the public sector (purchaser) and private companies (vendors). The act was probably appropriate as a control mechanism in the industrial era, but it is not suitable for the information society. It increases the focus on purchasing a technical solution rather than creating a new process centred on citizens' needs. There is also rather too much reliance placed on purchasing the lowest-priced solution. This means that solutions which may in overall terms be more valuable and more profitable are disregarded (Holmberg 2003). The lack of cooperation acts as a block to innovation and ensures that narrow solutions are retained (Bjurström et al. 2003).

In addition the Public Procurement Act is currently applied in far too extreme a way (Holmberg 2003). The act is designed to minimise corruption in the public sector and was drawn up to meet EU regulations. There is a huge variation in the amount of corruption in the different countries which make up the EU, and in the light of this the act could be seen as being excessively bureaucratic. Of course the regulations are one of the reasons behind the lack of corruption in Sweden, but on the other hand there is less need here for this type of regulation than there is in other EU countries. On a scale from one (highly corrupt) to ten (highly clean) Sweden has a score of 9.3. This can be compared with another country in the EU which has a rating of 4.3 and therefore comes several places below countries such as Botswana, Namibia and Cuba (Transparency International 2003).

The business world is of the opinion that the public sector is exaggerating the implementation of the act in a bureaucratic and unjustified way because the organisations are concerned about possible negative reporting in the press. It will not be possible to promote innovation if public sector representatives do not dare to answer the telephone during the negotiation period (Holmberg 2003). The public sector also has a number of prejudices about private companies and how they function. Politically correct behaviour has acted as a block to innovation (Bjurström et al. 2003).

The additional obstacles presented by the Public Procurement Act means that it is more difficult and more costly to work with the public sector. Public authorities also pose a greater risk as purchasers, because it takes a company far longer to find out that the public authorities are not interested in using it as a supplier than it does within the private sector. In the meanwhile the company has continued spending money on what turns out to be a non-existent deal. Private companies tend to prefer to sell their goods and services within the private sector, in particular when the economy is flourishing (Holmberg 2003).

Companies need to be able to identify clearly a demand for their solutions. In the current situation negotiations may take place and a general agreement may be signed without there being any demand at all for the solution in question. It is essential that a market is created. Public sector organisations must clearly state that they are prepared to buy services and products for a specific amount. The initial stage involves establishing standards which explain what must be done. The standards must be designed in such a way that they do not restrict competition (Grenblad 2003b), which means that they must be open and not proprietary (Glimstedt 2002). As a result it will be possible to lower the barriers to entry, partly because it is possible to explain clearly what is required and partly because development costs can be spread across several purchasers. In addition objectives such as the benefit of the citizens must be clearly defined to ensure that the solutions meet the objectives. The current situation is that companies do not want to plan extensively for public e-services in 2013 and develop innovative systems to achieve the planned objectives because the purchasers are not sufficiently proactive or clear about

their requirements. Companies are currently producing a number of products for a relatively passive public sector (Holmberg 2003).

The objective is to make it possible to produce innovations, create growth and develop new export products by promoting cooperation between private companies and public sector organisations in a clearly defined market.

10. Research

The demand for arenas where players in the innovation systems can meet is mentioned on several occasions in the studies and is given great emphasis (Rapp et al. 2003; Holmberg 2003; Bjurström et al. 2003). Research is a concrete means for creating this type of arena and making an essential contribution to the spread of knowledge. As the public sector has an inbuilt fear of the private sector, the research community is particularly valuable both as a partner and as a source of knowledge (Enquist & Fredriksson 2003). Below are some examples of specific areas identified by the studies where there is a need for multi-disciplinary research:

- 1) An unbiased and broad-based overview of Swedish administrative structures should be produced. To what extent does the structure of the public sector, together with its development and business processes, need to be changed? This type of national overview would have repercussions for most of the other issues involved (Rapp et al. 2003; Enquist & Fredriksson 2003).
- 2) Incentives and incentive structures must be redesigned to bring about change as a result of innovation and to ensure that the process is successful. How should this be handled? What will the consequences be? (Bjurström et al. 2003; Rapp et al. 2003)
- 3) A number of standards for the development of public e-services are needed. Which areas should be standardised? What types of standards should be produced? How will they be implemented? (Bjurström et al. 2003; Rapp et al. 2003; Holmberg 2003)
- 4) The changes needed also require cooperation. How can long-term in-depth business relationships be created? There must be an increased level of collaboration between the public and private sectors. How can this be brought

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- about? How can a more clearly defined market be established? (Rapp et al. 2003; Holmberg 2003)
- 5) The problems related to cooperation projects must be highlighted, together with the methods, management and guidelines which will make cooperation easier and allow an effective administrative system to be put in place (Rapp et al. 2003; Bjurström et al. 2003).
 - 6) The issue of responsibility is currently a grey area. It is not clear which of the players is responsible for taking the initiative and providing finance for e-services. On the basis of the needs identified above, this issue must be researched in order to provide support for positive changes. How can the work be divided up and the boundaries set? (Rapp et al. 2003; Bjurström et al. 2003)
 - 7) The private sector has been more successful in developing e-services than the public sector. At the same time many mistakes have been made in the private sector. It is important that these mistakes are analysed and described and that this information is made widely available so that the public sector does not repeat the mistakes. This is particularly relevant because many of the IT consultants who will be involved in developing the solutions are the very people who made the mistakes (Rapp et al. 2003).
 - 8) The banking sector and the travel industry are particularly valuable sources of information. They have positive experiences of e-services which can be applied to the public sector (Enquist & Fredriksson 2003; Bjurström et al. 2003).
 - 9) Multi-channel strategies and options for making personal as well as electronic contact with the public sector are an area which needs researching. Which

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- services should be automated? How should face-to-face meetings be integrated with and support/enhance electronic contacts? How can support be provided using e-service channels for resource-intensive activities such as the provision of care? (Rapp et al. 2003)
- 10) Methods must be produced to investigate users' ideas about how services should be developed, their appearance and usability, for example using focus groups. Methods for handling citizens' complaints and opinions must be developed in the form of a feedback system. (Rapp et al. 2003; Enquist & Fredriksson 2003).
- 11) What will be the consequences of e-services? How will they affect, for example, the opportunities available to citizens to identify and correct errors made in handling their cases? Which authority will take responsibility if e-services are developed by several organisations in collaboration? (Rapp et al. 2003)
- 12) There is a need for research into common methods and techniques for organising, finding, understanding and exchanging information in an agreed standard way (Rapp et al. 2003).
- 13) Pilot and sample projects which allow experiences to be shared and can act as models must be analysed and described and the results published (Rapp et al. 2003; Bjurström et al. 2003; Enquist & Fredriksson 2003).
- 14) The Public Procurement Act and other institutional factors have a negative impact on innovation. Why is this? How can the situation be rectified? (Holmberg 2003; Bjurström et al. 2003)

11. Agents for change

A number of organisations which have the potential to act as agents for change to a greater extent than is currently the case have been identified:

- The Government
- The Swedish Agency for Public Management
- The Swedish Association of Local Authorities
- The Swedish Federation of County Councils
- The Legal, Financial and Administrative Services Agency

These players must take a more active role within their respective areas. Even more importantly for the innovation system they must become more active laterally, both by cooperating within the public sector and with other parts of the innovation system. The Government must take more control and promote collaboration. Users are under-represented as potential agents for change.

Some people support the idea that non-profit organisations should be included in the innovation system, as they often make appeals to the general public and are to a large extent publicly financed (Rapp et al. 2003).

The interaction within the innovation system must be increased to discourage "narrow thinking" and promote innovation through cooperation and dynamism.

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