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The 24/7 Agency

Criteria for 24/7 Agencies in the Networked Public Administration

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Preface

On 9 December 1999 the Swedish Government commissioned Statskontoret, the Swedish Agency for Administrative Development (SAFAD), to draw up criteria as a proposed basis for the concept of 24-hour, seven-days-a-week public-sector agencies. This commission included proposing how the concept and the criteria might be used to encourage continuous quality improvement.

This report is a slightly shortened version of the Swedish report submitted on 4 May 2000, *24-timmmarsmyndighet - förslag till kriterier för statlig elektronisk förvaltning i medborgarnas tjänst* (*The 24/7 Agency — Proposed Criteria for Central E-Government in the Citizens' Service)*, which was developed in the spirit of the two Government Bills *Central Government Administration in the Citizens' Service* (1997/98:136) and *An Information Society for All* (1999/2000:86).

This criteria report contains proposals for four-stage development whereby a government agency can fulfil the aim of enhancing its accessibility and providing service round the clock, seven days a week. SAFAD recommends that these criteria should primarily focus on the agencies' capacity to provide interactive services for the public and businesses. To supplement this recommendation, SAFAD proposes criteria concerning general official information and its presentation, and also relating to public awareness of official activities. Proposals are also made regarding how the Government Offices and government agencies can hasten and encourage development towards e-government. In addition, SAFAD's report contains proposals on the direction of further work to develop the criteria.

On 20 July 2000, the Government published an Action Plan for achieving the goals of the above-mentioned *Central Government Administration in the Citizens' Service*. The plan's section on better services lists the following specific action lines founded on the concept of Internet-based networked public agencies:

- 24/7 services
- service charters
- single entrance to public information
- information tailored to SMEs
- service co-operation between state and local government
- secured transmission of electronic documents and messages
- implementation of electronic signatures
- basic databases

The "24/7 report" is expected to assume pivotal importance to the implementation of the Action Plan. As this English version, *Criteria for 24/7 Agencies in a Networked Public Administration*, goes to press, the Swedish version is being referred to some 100 central government agencies for their consideration.

Olov Östberg

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1. Summary

On behalf of the Swedish Government, the Swedish Agency for Administrative Development (SAFAD) herewith submits its proposed definition of criteria concerning the concept of the 24/7 (24-hour, seven-days-a-week) public-sector agency. We also propose ways for the Government and individual government agencies to use the criteria in their ongoing development of electronic government, with enhanced accessibility to the public and quality improvements in services. In this report, SAFAD also proposes directions that further work to develop the criteria should take.

Accessibility, irrespective of time of day and geographical location, may be achieved through a range of established service channels. Technological development is, moreover, constantly generating new challenges and opportunities. Schematically, the service channels independent of time and space may be categorised as follows:

- Internet services: web, e-mail, mobile client programs
- Telephony services: automated attendants, service telephones, call centres
- Television services: teletext, interactive digital television.

In SAFAD's view, a specific form of joint approach must characterise the electronic services ('e-services') available, and individual government agencies must regard themselves as part of a system of electronic public administration ('e-government') to serve the public. Accordingly, criteria for the concept of the 24/7 public agency must focus on the web service channel.

We propose making manifest ability to provide electronic, online interactivity the primary yardstick of an agency's development in terms of the 24/7 agency concept.

Scope for providing interactive 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. These stages are defined, according to SAFAD's proposal, as follows:

Stage 1 Website containing 'packaged' information about the agency and its services
Stage 2 Website containing 'interactive' information about the agency and its services
Stage 3 Website and communicative functions that allow the visitor to submit and retrieve personal information.
Stage 4 Website and network functions for joined-up services involving several agencies and institutions.

The fact that a specific service is located at a particular stage of development does not mean that the entire agency is so located. To permit such an assessment, the four criterion stages must be combined with qualifiers. SAFAD proposes applying a set of specific subsidiary criteria within the four development stages, according to the following three groups of ***qualifiers***:

a) Quantity and quality of the transaction-related information provided (a proposal is made as to the form progressively increasing interactivity in the transaction process should take).

b) Quantity and quality of the general information provided (a proposal is made as to the information about the agency and its work that should be available on the website).

c) Quantity and quality of the general information presentation (a proposal is made as to joint e-government requirements concerning website presentation of information).

With various forms of control methods, the Government can approach the agencies and their ways of attaining the 24/7 agency concept. In SAFAD's view, there are grounds for the Government to consider using all these different control instruments to speed up and encourage development of e-government. We propose that the Government initiate inputs in the following areas:

- Systematic administrative development (e.g. through the agencies' use of service charters and customer surveys).

- Development of governance dialogue (e.g. through the Government's specification of clear 24/7 targets in its official documents granting appropriations to the agencies).

- Continuous follow-up (through individual agencies' annual reports as well as jointly, in an annual review of all central public administration).

- A process of change common to all central public administration (e.g. through conferences concerning the theory and practice of 24/7 service).

Finally, SAFAD proposes ways of implementing the application of criteria regarding the 24/7 agency concept to yield an operational tool for the Government's and agencies' further work of developing online services, resulting in improved accessibility and enhanced service quality.

2. The commission

2.1 The directive

Extract from the Government decision of 9 December 1999:

> The idea of the 24-hour, seven-days-a-week (24/7) government agency has emerged as the leading concept in efforts to enhance government accessibility. To acknowledge those agencies that are working actively to make themselves more easily accessible and encourage those that have not yet progressed as far in this work, the Government seeks to define the concept with a view to using it in its quality assessment and control of agencies. It could, for example, be used as a basis for comparing agencies.
>
> **Commission**
> The Government commissions the Swedish Agency for Administrative Development to draw up proposed criteria to form the basis of the 24/7 agency concept. These criteria should reflect, and permit simple measurement of how far the agencies have fulfilled, the Government's objectives regarding agencies' accessibility.
>
> The commission includes proposing ways of using the concept and the criteria to encourage continuous quality improvement.

Extract from the press release:

> Britta Lejon, Minister for Democratic Issues and Public Administration:
> 'Modern information technology enables us to create a society whose agencies are always open to the public. Using IT to the full extent possible fulfils several purposes. It makes public administration more public-oriented. It should be possible to reach the agencies at times when people need to do so, which is not always in normal office hours. Extending the agencies' use of IT strengthens the infrastructure, contributes to technological development and thus helps to boost Sweden's competitiveness as an IT nation.'

2.2 Detailed definition of the commission

After SAFAD was given the 24/7 agency commission, the matter was referred to on various occasions by the Government. One of the more important points of contact is the 'IT bill', *An Information Society for All* (Govt. Bill 1999/2000:86), from which the following are extracts:

'A strategy should be drawn up to rationalise and facilitate the availability of public-sector information and stimulate the development of electronic information services.'

'[…] First, for democratic reasons, it is vital for individuals to have ample awareness of the public sector and the products that stem from work conducted in public administration. Secondly, effective dissemination of information is a highly

significant means of raising efficiency in public administration itself. Making basic information from the public sector available is another factor with a bearing on growth and welfare.'

'[…] The development of information technology means that virtually all public-sector information will be electronically produced, stored and distributed, to rationalise public services. The specific costs of compiling information and delivering it to citizens and companies will, in this situation, be low.'

'[…] In the public sector, development of administration close to citizens and companies is under way that can offer, for example, round-the-clock services, integrated services in various life and business situations and, in general, faster and more customer-oriented services.'

Given the wording of the commission, the IT bill and other Government statements, there is reason to examine in more detail e-government's current development tendencies and challenges.

2.2.1 The 24/7 agency is a network agency

To supplement manual services, electronic self-service should be provided. This, in brief, is the definition of technical service functionality in a 24/7 agency used in the commission.

SAFAD interprets the 24-hour agency concept as representing a combination of measures, all of which are aimed at creating government agencies that serve the public. Accordingly, the agencies should deliberately implement ***electronic services*** in their ***dynamic transformation*** into ***network agencies***.

What are electronic services?

Tony Blair, the UK Prime Minister, declared in March 2000 that the goal was for all British government agencies' services to be available online sometime during 2005, at the latest. The definition of electronic services concerned 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.

In SAFAD's view, such a broad definition of electronic services — ***e***-services — is not appropriate for the development of electronic self-service options for Sweden's central government agencies.

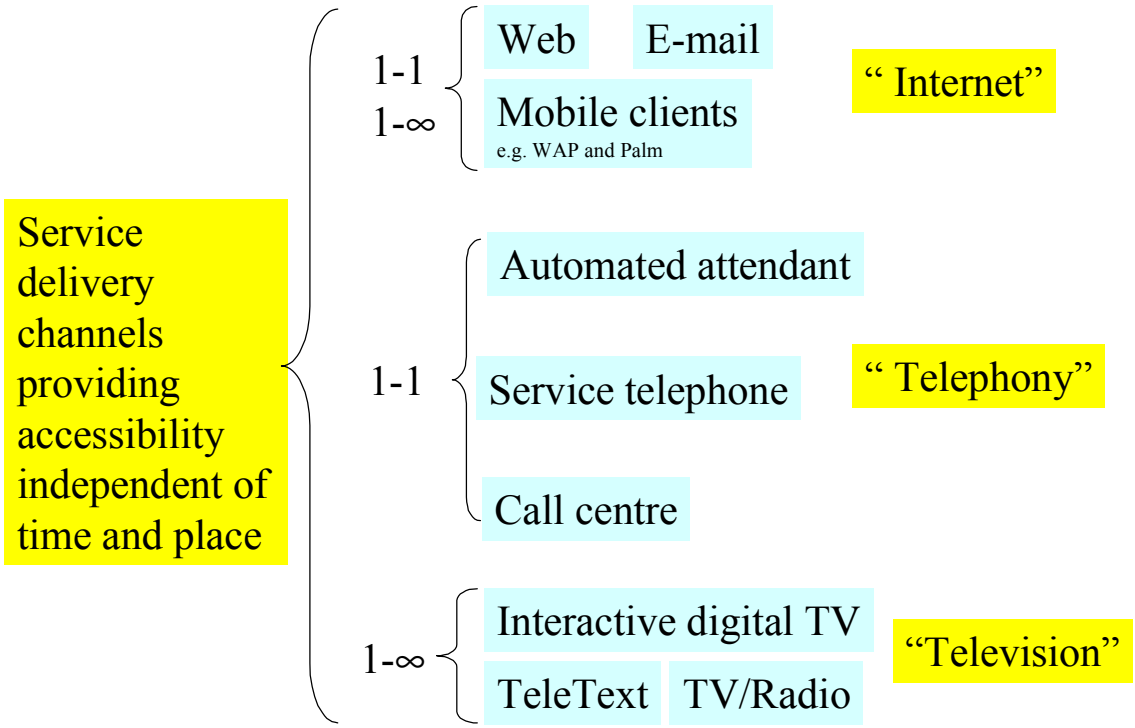
The Internet ('the net') has come to be perceived as a synonym of electronic networks as a whole. Here, technically, the term 'Internet' refers to the Internet Protocol, or Internet protocols (IPs). True, the development of IP applications has attained the level required for the service channels listed above to be based on an IP framework. But it is the web alone that satisfies online requirements.

In SAFAD's estimation the network dimension, as such, is crucial to the definition of electronic self-service options and, accordingly, to the concept of the 24/7 agency.

This does not mean that self-service by telephone (automated attendant, service telephone) is not an efficient and appreciated form of 24/7 service. On the contrary, many agencies — such as the National Tax Board (RSV), National Board of Student Aid (CSN) and National Road Administration (VV) — offer extensive round-the-clock communication of this kind.

But interactive telephony services as we know them today are not an expression of the dynamic evolution of e-government that the Government aims to encourage through the proposed criteria for the 24/7 agency concept.

The various forms of service channels are interrelated as shown in the diagram below. '1-1' and '1-∞' refer to the fact that communication takes place on a one-to-one and one-to-many basis respectively. For a service channel to be considered part of a network, it must be Internet-based and permit one-to-one communication. The classification into 'Internet', 'telephony' and 'television' is not entirely correct, since technological development is dissolving the boundaries and generating convergence (*Convergence between Telecoms and Data*, SAFAD 1999:34).

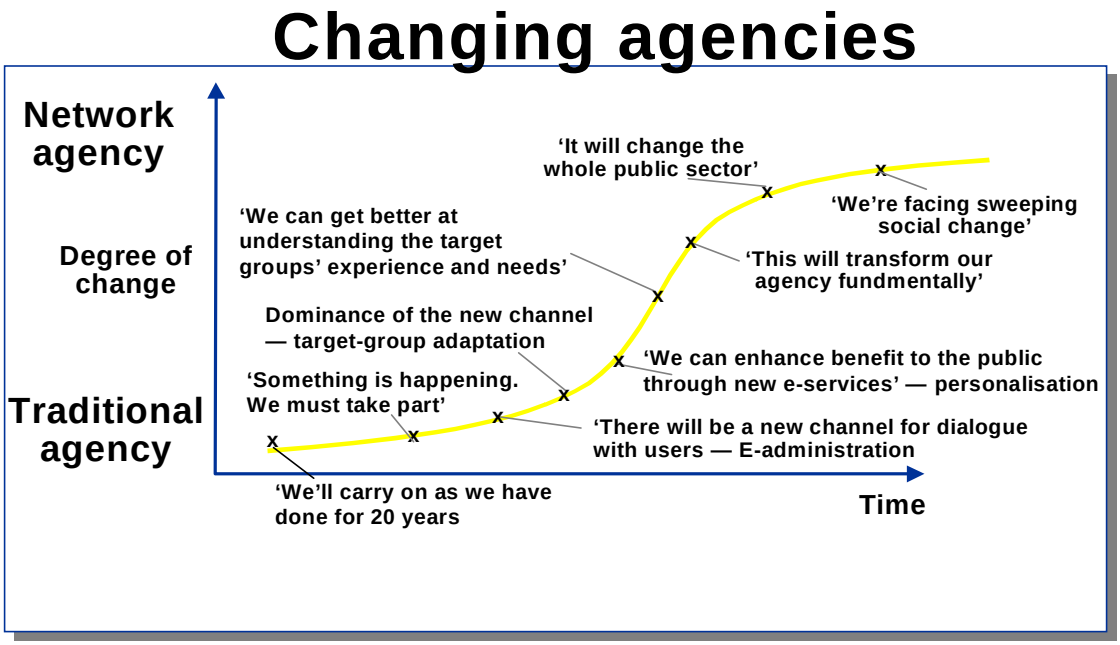


SAFAD's view is that the development of criteria for the 24/7 agency concept should initially focus on the dynamic evolution of e-services based on the 'Internet' area.

Dynamic evolution and network

IT development is accelerating, and changing our reality in rapid and dramatic ways. This development will affect and influence us all through the changed terms and scope of enterprise, employment, culture, education and politics. Digital technology may therefore be regarded as sufficiently revolutionary to justify applying the description 'information society' to the society we are heading towards.

The Government wishes, by implementing the criteria for the 24/7 agency concept, to encourage and require the agencies to move upwards in a *trend line* or (in psychological parlance) 'acquisition curve'. Our influence over and knowledge of the upper part of this curve are meagre. What we know with certainty is that it involves the agencies changing.



Today, the Internet comprises a network of 60 million linked computers and/or servers that provide 200 million websites (home pages). In the past 11 years, Internet traffic has doubled annually. Mobile telephones, PCs and individual Internet addresses are other examples of exponential proliferation, but with varying exponential size, i.e. at different doubling rates.

This exponential growth is discussed frequently with reference to 'Moore's Law' of exponential growth in the performance-price ratio for microprocessors (chips) and hardware. When these technical components are used in networks, a phenomenon arises that is known as 'Metcalfe's Law'. The latter consists of the observation that the *utility* of a network to its users grows exponentially with the number of participants.

The value of agencies exchanging information with one another, the public and companies rises exponentially with the number of agencies that exist in electronic form — that is, provided that all the parties can freely communicate with one another.

The value of agencies applying standardised interfaces, browsers, signature certificates, file formats, form structures, online procedures, metadescriptions, etc rises exponentially with the number of agencies that operate a standardised interface.

To utilise this opportunity for dynamically emerging network *utility*, it is desirable for a degree of 'information and service convergence' to take place in central e-government. This in turn requires a certain measure of cross-agency co-ordination.

SAFAD's assessment is that the 24/7 agency must, through its choice and implementation of service channels and electronic services, become part of the larger context that is central e-government. This calls for voluntary collaboration between agencies or Government-led development and strategy throughout the central public administration.

By 'network agency', we mean a government agency that deliberately uses this understanding of Internet dynamics in its reform efforts. This has, for example, a major bearing on the choice of service channels and technical applications that will combine to yield better accessibility. The 24/7 agency must conduct constant service development, and this requires knowledge of *requirements and expectations on the users' part*, *social development* and *technical development*. The Annex describes in brief some of the areas of technological development that may in some degree be said to belong to the infrastructure — areas on which a 24/7 agency should base the design of its services.

The formulation of criteria for the 24/7 agency is discussed in Chapters 3 and 4. The paramount aspect of these criteria is that they should encourage broad agency development that takes into consideration the entire dynamics of what we may call the 'network society'.

The directive states that it should be simple to measure fulfilment of the desired criteria in order, for example, to permit their use in comparing agencies. At the same time, the criteria should serve to encourage enhancement of accessibility and quality.

2.2.2 Plan of work

The following people in SAFAD have contributed background material for, or participated in, the project work relating to the 24/7 agency concept: Magnus Brattgård, John Gøtze, Inger Lindh, Jan Lundh, Clas Thorén and Olov Östberg (project manager). Lars Dahlgren (cost-benefit analysis), Per Mogren (service descriptions) and Lars Olsson (agency classification) have assisted on a consultant basis.

A reference group comprising seven agency representatives served as a sounding-board during the course of the project. This group, which was so composed as to represent a balanced cross-section of Sweden's 280-odd agencies of significant size, comprised representatives of the National Board of Student Aid, the National Board of Agriculture, the Jönköping County Administrative Board, the National Social Insurance Board, the National Police Board, the National Maritime Administration and the Swedish Government

Employee Pensions Board. In section 2.1 some of these bodies, like SAFAD, contribute current examples of their work that are relevant to discussions concerning the definition of, and means of attaining, the variable objective of the 24/7 agency.

Deliberations concerning self-service and 24/7 agencies are on the agenda in several nations, not least in Sweden's Nordic neighbours. A Nordic workshop on the subject was consequently arranged by SAFAD. The countries taking part were Denmark, Finland, Greenland, Iceland and Norway.

3. Do 24/7 government agencies already exist?

Government agencies that operate round the clock, seven days a week exist in the form of those, such as the police authority, the armed forces and the National Maritime Administration, that perform the function of administering and supervising infrastructural resources and personal security.

Fragmentarily and partially, 24/7 services are already provided by several agencies. The National Labour Market Board (AMS) has a massive volume of inquiries 24 hours a day in its web-based labour exchange, the Jobs Bank (*platsbanken.ams.se*). The National Tax Board (RSV) finds, on the basis of an independent market survey, that more than a third of the country's Internet users (of whom there are very many) have visited *www.rsv.se*.

3.1 Progress reports from the reference group

Agencies that, through voice mail or web services, have made a serious start on providing 24/7 services have consistently found that a very large number of external dealings take place at weekends and times outside regular office hours.

To obtain a specific picture of the current development of 24/7 services, the agencies included in SAFAD's 24/7 agency reference group have contributed progress reports from the viewpoints of their respective activities:

CSN Electronic services — current situation and development
JCAB Portal for SMEs' agency dealings in Jönköping County
RFV Self-service, electronic transactions and the law
RPS Centre for simple crime reports
SJV The National Board of Agriculture goes online
SPV Customer-relationship management from the 24/7 agency perspective
SAFAD 24/7 support for public-sector procurement of IT equipment and services

The selection of progress reports was made with a view to providing descriptions that were as wide-ranging as possible.

3.1.1 CSN: current situation and ongoing development of e-services

The National Board of Student Aid (CSN) is responsible for the financial study support provided by the Government. Every year, CSN pays study support to some one million active students. This support is paid in the form of both grants and loans. There are just over 1.3 million borrowers. In the course of a year, more than two million people come into contact with CSN. This calls for a high degree of accessibility on the agency's part.

Developing its online services is therefore strategically important to CSN. In the past five years, CSN has successively developed these services. Today, through 'CSN Direct'

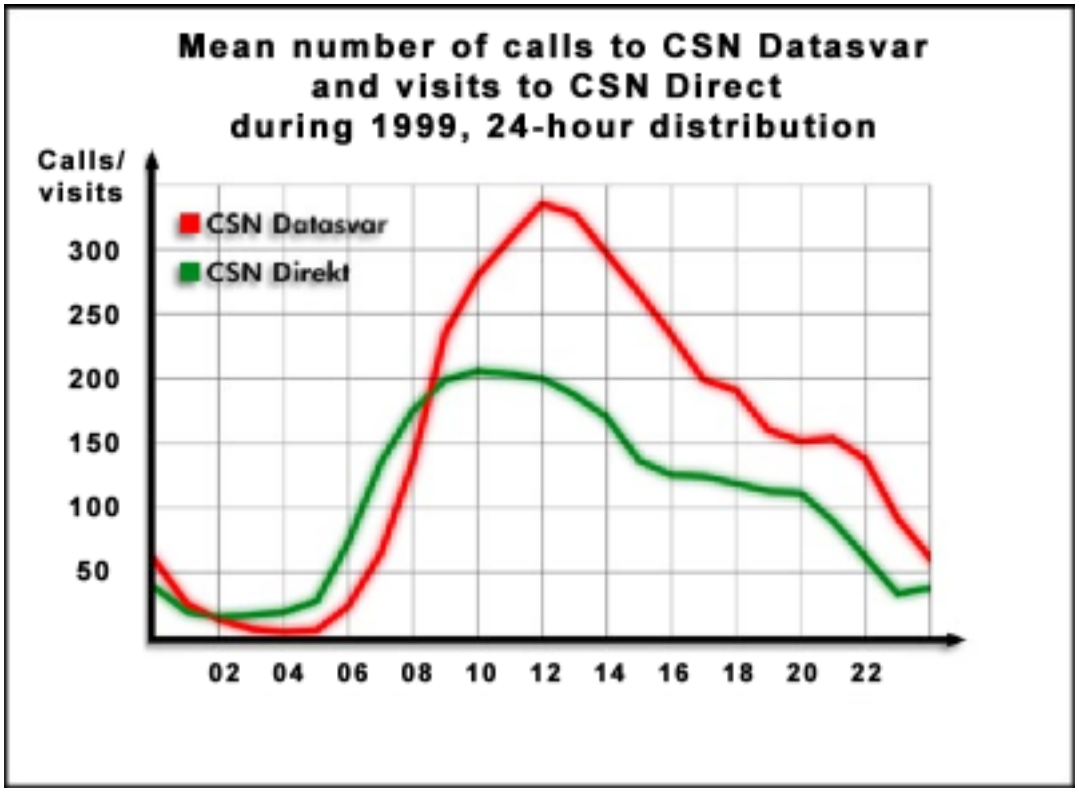
(*www.csn.se*), members of the public can obtain up-to-date and personal information on their applications for study support and their current amount of debt.

Another strategic starting point for administrative development is CSN's investment in automated processes. The transaction chain includes educational organisers who confirm the students' course attendance, as well as banks that arrange the outgoing and incoming payments alike. The chain is linked in an IT-based process flow. Thus, for example, 370,000 recipients can have their study support disbursed, and deposited in their accounts, without themselves needing to apply or to confirm their study activity.

The technical requirements are extensive and relate to such areas as advanced digital signature, reliable authentication, data integrity, online support, elimination of service disruption, processing capacity, etc. Several of these requirements — that relating to advanced digital signature, for example — cannot yet be fulfilled. As soon as possible, CSN aims to enable applications for study support and amendments of data to be made online.

In the process development now under way, the study-support recipients' wishes are therefore highly important. In recurrent customer surveys, CSN records views and wishes regarding both the nature of study support and how it is distributed. This forms an important basis for the agency's process development.

The keen interest in further development of various forms of 24/7 service that exists is also evident from the adjacent traffic diagram from *CSN Datasvar*, CSN's automated information service (technology: telephony), and CSN Direct (technology: web).



Altogether, 1.2 million visits were made to CSN's website during 1999.

3.1.2 JCAB: portal for SMEs' agency dealings in Jönköping County

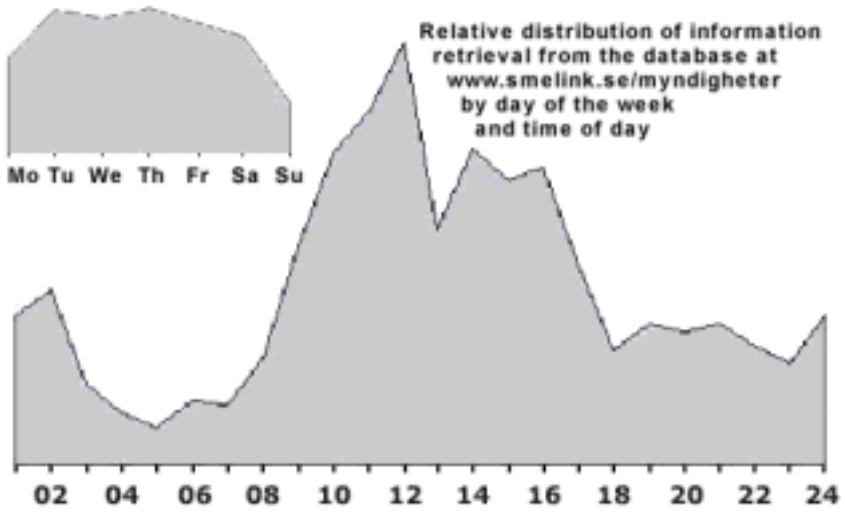
Agencies must be accessible at times when their services are needed. This presupposes that people know how to reach them. The Jönköping County Administrative Board has solved this problem by taking part in *Smelink*, an Internet-based project, and assuming charge of development in the Agencies information area. The name 'Smelink' refers to small and medium-sized enterprises (SMEs).

The portal website *www.smelink.se/myndigheter* affords entry to an address database of agencies with 'Bruno', the agency guide. Through Bruno, users find the right agency regardless of whether they know its name. The database contains particulars of most central government agencies, municipalities, county administrative boards, county councils, courts, Government and ministries, Parliament, the Armed Forces and higher education institutions. Examples of agency information on offer are names, street and postal addresses, telephone and fax numbers, e-mail and website addresses, descriptions of activities in some cases, problem-based search words, links to more information, current legislation, forms available and maps showing the agencies' geographical locations.

When users specify their home municipalities, the agency concerned shows the primary organisations they should turn to, such as local tax offices. In the near future, it will be feasible to find one's own local agency by stating one's postal code. The system can also be used by employees who, using the database, can print out address labels or e-mail lists, or issue direct mail to e-mail addresses, from a list composed according to criteria of their choice, within and between different agency categories.

SMEs have expressed a great need to obtain access to agencies' forms from a single source. A large number of these forms are already available in the form of printable PDF (portable document format) files, but there is a wish to enlarge the form database and extend it to include online form-filling.

The traffic diagram below shows with the desirable clarity that there is substantial demand for these services outside regular office hours.



One precondition for the expansion and continued existence of the portal system is that it offers a range of services demanded by SMEs; another is that the services are of consistently high quality. They must be correct, up-to-date and accessible when entrepreneurs need them. Indicators that they meet these requirements are a prompt agency response to inquiries (within two days) and quality assurance of Smelink by ISO 9001 certification.

3.1.3 RFV: self-service, electronic transactions and the law

In recent years, the National Social Insurance Board (RFV) has called for legislation and clear regulations, in order to be able to meet its own and users' requirements for a higher degree of electronic communication and self-service.

On 4 November 1999 the Government commissioned RFV to propose, not later than on 25 February 2000, certain regulatory amendments. These changes will be necessitated by the introduction in RFV and the public social insurance offices of a new IT-based transaction system and a raised degree of self-service and automation of administration.

In its reply, *Report on regulatory overview prior to IT-based transaction systems etc* (in Swedish, RFV ref. 10066/1999), RFV emphasised that social-insurance legislation includes some 40 statutes. These contain clauses that hinder, or are unclear regarding, full implementation of self-service and automatic administration. However, RFV intends to submit to the Government, where necessary, any additional proposed regulatory amendments that prove necessary for current development of activities to be implemented.

Some of RFV's proposals are as follows.

(1) *That the following provisions be inserted into the Social Insurance Act (1999:799):*

- decisions in matters relating to social-insurance benefits etc may be issued in the form of electronic documents
- digital signatures are equated with manual signatures, as specified in the Act on certain digital signatures etc
- the Government or the agency appointed by the Government issues detailed regulations on security levels applying to digital signatures.

(2) *That the following provisions be inserted into the Social-Insurance Register Act (1997:934):*

- the Government may issue regulations to enable registered individuals to gain direct access to particulars about themselves.

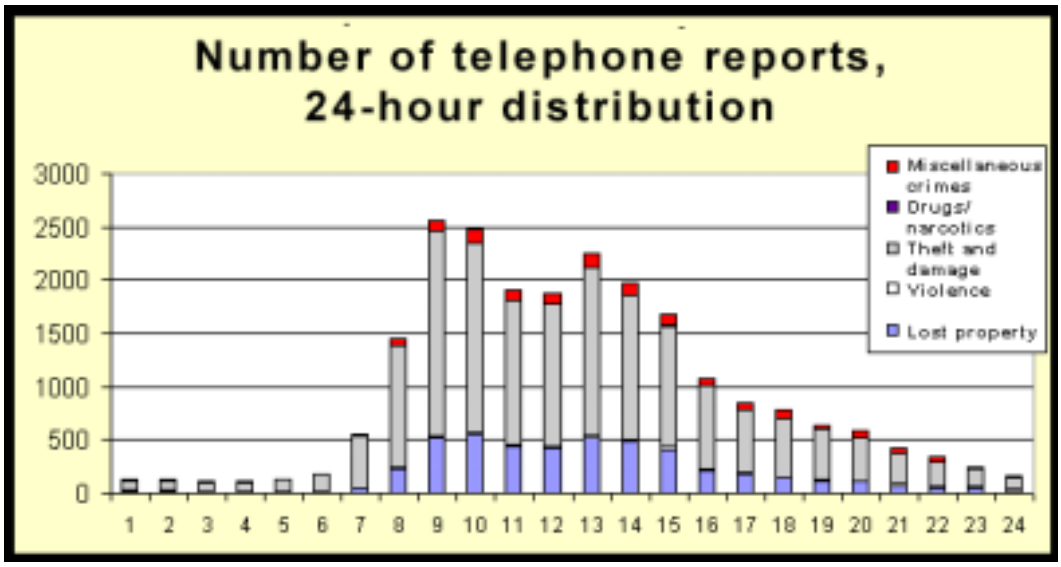
(3) *That the following provisions be inserted into the Social-Insurance Register Ordinance (1997:934):*

- particulars in social-insurance registers may be accessed by the registered individuals concerned for data-processing purposes.

A dialogue between RFV and the Ministry of Health and Social Affairs concerning the legislative issues involved is currently in progress.

3.1.4 RPS: centre for simple crime reports

Sandön, the island in the outer reaches of the Stockholm archipelago, has been best known to date as the Mecca of holiday sailors. The island may also soon be known as the police's first reporting centre for the public. Since autumn 1999, all crime and lost-property reports of a simple nature in the county of Stockholm have been channelled there. This takes place via the police switchboard in central Stockholm, which for 1998 registered the following distribution of incoming telephone reports.



The reporting centre receives only reports by telephone, and only reports that do not require a police officer to make a personal visit. But this is no small-scale activity: in recent years, roughly 350,000 crime and loss reports have been made annually. Of these, some 75,000 have been by telephone, and since the centre in Sandhamn opened the proportion of reports made by telephone has risen by 15 per cent.

At the centre in Sandhamn, telephone reports by members of the public are converted into particulars on forms. The original paper transcription is then sent to the police district responsible, while a paper copy is sent to the person making the report and the digitised information is transmitted to the police's 'rational reporting routine' system.

In November 2000 the report centre's second stage of inception will begin. There will then be a new physical unit on the island of Arholma. Sandhamn and Arholma will be linked electronically, and successively more functions will be transferred to these centres to create a well-integrated call centre, including the Internet. This virtual unit is expected to receive most of the telephone and Internet reports in the county for police and legal matters.

Initially, the report centre stayed open from Monday to Friday between 7 am and 7 pm. In the next stage, Internet-based electronic reporting is being introduced. When this is completed, the manual portion of the service is intended to be open from 7 am to 10 pm or midnight, and there is of course no limit on the time of day for self-service via the Internet. 'The concept', we are told, 'is that the public will be able, simply and rapidly, using modern technology, to report crimes and obtain answers to their questions.'

The pilot centre in Sandhamn is expected to be widely emulated throughout Sweden. Similar activities are also being conducted at the Police Authority in Skåne, based in Helsingborg. The police authority in the county of Uppsala is engaged in work to develop Internet-based electronic reporting for 'simple' crimes and also efforts to channel the public, by means of telephony and computer technology, to available report recipients, with several agencies taking part.

3.1.5 SJV: the National Board of Agriculture goes online

Administration and outgoing payments under the EU's agricultural policy are among the principal functions of the Swedish National Board of Agriculture (SJV). SJV is the owner of the systems used for administering EU support. For most forms of direct support for Swedish farmers, the county administrative board is the decision-making agency.

The plan is for it to become feasible, during the summer of 2000, for farmers to register their current *livestock status*, via the interactive website, on SJV's central *cattle register*. During the year 2000, some 5,000 farmers are expected to use the service and the potential number of users up to and including 2002 is estimated at around 35,000.

Farmers will also, through the interactive website, be able to submit complete applications for *farm subsidies*, a form of direct support, including map administration. Implementation will take place in stages:

2000 Pilot tests to verify technical solutions.
2001 Select group of users to be given the opportunity of applying for support online.
2002 All farmers to be offered the opportunity of fully functional online application.
2003 Proportion of digital applications to exceed 50 per cent of the total number.

SJV is also the leading agency for Sweden's district veterinary surgeons. For the roughly 1,000 vets in the country, the plan is for an Internet-based decision-making and analytical tool to come into operation in spring 2000.

Today, the public can obtain a wealth of information from existing websites, the most frequented being the illustrated descriptions from the plant protection centre (*www.sjv.se/vsc*). Part of the information intended for vets, for example, will be made available on SJV's website. Otherwise, authorisation will be required for access to the data. Users will, in a simple manner, obtain access to relevant information about economic parameters, as well as those relating to veterinary medicine.

The technology must be subject to the following operative requirements:

- Signing of documents with a digital signature that replaces a traditional signature on paper, i.e. fulfils the requirements for advanced digital signature.

- Secure authentication, which affords high security with respect to identification between transmitters and recipients.

- Data integrity, which means that the document is untouched.

- Confidentiality, which means that unauthorised persons must not be able to read the contents.

- Online support.

- Agreements between farmers and SJV.

It is SJV's experience of interactive web services that it is difficult for those involved in activities to formulate their security requirements, and that it is difficult for IT suppliers to provide technology.

The lack of a structured approach has impeded the process of putting the work online. However, an approach of this kind is in the making, within the framework of SJV's forthcoming *Security Policy for the Internet*.

3.1.6 SPV: customer-relationship management from the 24/7 agency perspective

The Swedish Government Employee Pensions Board (SPV) is responsible for occupational pensions and occupational life insurance for central government employees. SPV also administers occupational pensions in spheres of municipal and private collective agreement. This takes place in collaboration with a number of insurance companies. Every month, pensions are disbursed to some 325,000 people.

SPV has three clear target groups for its activities: gainfully employed people, pensioners and employers. Each group has its own distinctive service needs. This differentiation of needs will be reflected in the organisation and the system support that are established in the agency.

For the *gainfully employed* who seek information on the contents of pension agreements or wish to calculate their own future pensions, SPV offers a simple calculation program on its website. Particulars of salary and age are entered by the 'customer', whereupon the calculation is based on general assumptions regarding pay trends, economic growth, etc. The calculation provides a forecast of the individual's future pension in relation to final salary. The website also contains published collective agreements, and forms.

If established technology existed to safeguard website visitors' identity and the interaction with them, SPV could deliver specific individual pension information on a self-service basis.

For the gainfully employed who work for municipalities and are covered by the new pension agreement (*PFA 98*), the website will contain information about the individual choice that is to be made for the first time during the autumn of 2000. The website will also provide the answers to the most frequently asked questions (FAQs) and a form for making one's choice.

For *central government employees*, an 'extranet' was tested during 1999. Via websites open to the public, agencies authorised to do so will be able, during the spring of 2000, to

gain access to basic data stored by SPV concerning their own employees. These data are pension-specific and contain such information as salary and length of employment. These particulars are sometimes sought by employers in order to inform their employees on the data for benefit calculation that are stored with SPV. The data have hitherto been sent to the employer in paper form, but this practice can now be reduced. For employers, a downloadable calculation program is also available for simulation of the premiums paid to SPV by the agencies concerned for the central government's collective insurance schemes.

In the municipal sphere, the Church of Sweden's insurance association, with its members — the parishes — will be able to register data relating to pension entitlement in SPV's register. This support was developed to simplify administration in view of the large number of parishes included in the insurance association, which are spread throughout Sweden.

For *pensioners*, the agency's telephone customer service is the paramount point of contact. The service, with a 020 number (calls from private telephones are free of charge), is open from 8.00 am to 4.30 pm. In a normal month, some 3,000 4,000 calls are received by the customer service. To reduce queuing times, if any, an extension is planned with automated attendant etc. E-mail inquiries are feasible today, but as yet they make up only a small portion of all inquiries.

When SPV can offer individuals a simple but reliable authorisation system, access to one's own basic data may also be feasible, and these may be used for pension calculations using various web systems. When there is information exchange with members of the public, satisfactory security must have been attained before authorised access to SPV's data in the systems is afforded.

SPV recurrently measures its target groups' satisfaction with accessibility, service level, etc. One service appreciated by the public would be if SPV could offer coherent information from various pension providers and, by means of online technology, present the individual's aggregate pension benefits in a clearly intelligible form.

3.1.7 SAFAD: 24/7 support for public-sector IT procurement

Starting on 15 March 2000, SAFAD took an important step into the electronic self-service era with the opening of its online 'factory outlet'.

The purposes of the new website are:

- To increase the use and, accordingly, the benefit of SAFAD's framework agreement.
- To enhance accessibility, in terms of time of day and the user's geographical and organisational position; at present, procurement activities are highly decentralised
- To improve information quality, i.e. make the information provided more up-to-date and complete. The IT sector is characterised by very rapid price and product changes that make it difficult and labour-consuming to keep information in the agreements up to date during the period they cover.

- To boost the number of electronic suborder inquiries and orders, which reduces administrative costs of IT procurement in the public sector.

- To reduce the external pressure on dealings with administrators.

Principles implemented on the website are that *all information* on the framework agreements should be electronically available and up to date; that *all links* in the user chain should be supported; and that *all operators* (suppliers and dealers) should be linked to the website and guarantee that product prices and performance specifications should be up to date and provided openly. During the year 2000, the website will offer scope for:

- *searching* framework agreements, suppliers and dealers with whom orders may be placed
- *retrieving* information on *current* and *planned* procurements
- *subscribing* to *electronic newsletters* on IT procurement
- *ordering* material, such as agreements, inquiry documentation and forms
- *finding* suppliers and dealers in the area concerned
- *checking* whether the municipality is entitled to order from a framework agreement
- *sending* a simple suborder inquiry to one or more suppliers by e-mail
- *placing* a simple order by e-mail.

3.1.8 Conclusions from the reference group's progress reports

The very brief progress reports from a handful of agencies do not, of course, do full justice to the efforts under way to develop services in the Swedish central government agencies. However, they indicate that many agencies are conducting relatively large-scale work to advance towards what is perceived as being a 24/7 agency.

Some observations:

- There are fully adequate solutions for Internet-based provision of information from agencies to the public and businesses.

- At the present-day level of self-service activity, telephony-based solutions are competitive alternatives to Internet-based solutions.

- Secure Internet-based 'interactivity solutions' containing components for digital signature, authentication, computer integrity and confidentiality are lacking.

- The agencies must resolve certain legislative issues that constitute obstacles to application of the secure interactivity solutions that are expected shortly to become technically feasible. The agencies have, on the other hand, established relatively extensive systems of telephony-based services.

3.2 Agencies' views concerning 24/7 criteria

To obtain an idea of how criteria relating to the 24/7 agency concept fit in with the agencies' current service development efforts, we contacted a total of 21 government agencies, of varying size and activity focus.

All the agencies were interviewed, except for two which submitted written material. They all shared the opinion that SAFAD's government commission was interesting, and their desire to take part was very great.

Some knowledge of what the public and businesses wish and think

More than half of the agencies carry out surveys to measure attitudes towards and knowledge of their own activities among the public or businesses. Surveys are conducted in many different ways, but only a few agencies do them in a uniform way and on a regular basis. The largest agencies carry out continuous surveys within various segments of their activities.

All the agencies consider that these surveys are important. A number of agencies admit, however, that they have difficulties in using the results in their development work. The smaller agencies would welcome an opportunity to co-ordinate their inputs. This would save money and, in the long term, probably enhance service quality.

Contact by telephone

A number of agencies consider that telephony and the scope it affords will hold its own very well in competition with various online systems. The service telephone — i.e. self-service using a push-button telephone — will continue to exist but undergo further development to provide similar services which are provided through a website.

Alongside these push-button telephone solutions, a few agencies have also established call centres or, rather, what might be called 'contact centres'. Here, e-mail and calls of all kinds are received and the customer service agents' computer-based information support is developed continuously. The centres started by the Premium Pension Authority are one example, and the National Tax Board's e-mail service is another.

Clear-cut and frequent transactions

Several agencies are engaged in transactions of various different types, such as licensing, testing, issuing information and providing grants. In the various categories of transactions or services, most agencies can distinguish what is most frequent and would it would be appropriate to make available 24 hours a day.

Making all transactions and services immediately available round the clock, seven days a week is something all agencies consider unnecessary. It is better to concentrate on those that are in more frequent demand, and develop methods and techniques to permit further progress. A few agencies stated that their activities were so concentrated that five services together made up 75 per cent of their volume of transactions.

Continuing development work

The agencies were asked to state where they deemed themselves to be located in a five-stage development process:

1) The agency has its own website with official information and the option of downloading brochures and forms, for example.

2) The agency can be reached via an official 'letterbox', where questions may be asked.

3) There is interactive online service with the options of guided search, performing calculations and downloading forms.

4) There are 'individually adapted' pages and the option of examining previous transactions and submitting simple transactions electronically.

5) Decisions can be taken and notified electronically by means of secure electronic identification.

One agency deemed itself to be at stage 1, while two agencies stated that they were at stage four and the others were somewhere between 2 and 3 or 3 and 4.

The agencies regard themselves as being in a development phase with regard to use of the Internet. There is every indication that it will take time to change the agencies' organisation and their employees' way of working.

Some agencies also pointed out that there is less and less reason to maintain their own local offices as the need for personal visits decreases.

The smaller agencies signal a clear need for more exchange of knowledge and experience. Some would welcome practical collaboration between agencies to develop both the requisite technology and new ways of performing various types of services more rapidly.

However, it is clear that inter-agency development work is being conducted only on a very limited scale. Evidently, incentives and measures are required to generate development co-operation.

Clear requirements desirable

The agencies are highly aware of the 24/7 agency concept. Several are calling for clearer requirements where in-house activities are concerned, but also for an overall view of the joint direction in which public administration is heading.

All the agencies expressed the view that unequivocal criteria can be a good way of promoting development. Several, however, considered that assessment and requirements had to be discussed with the individual agency concerned. A small agency without clear dealings with the public or businesses cannot be required to offer the same accessibility as a large agency with services close to the citizens. Moreover, it is a difficult balancing act to provide services and be 'customer-oriented', on the one hand, and exercise official authority on the other.

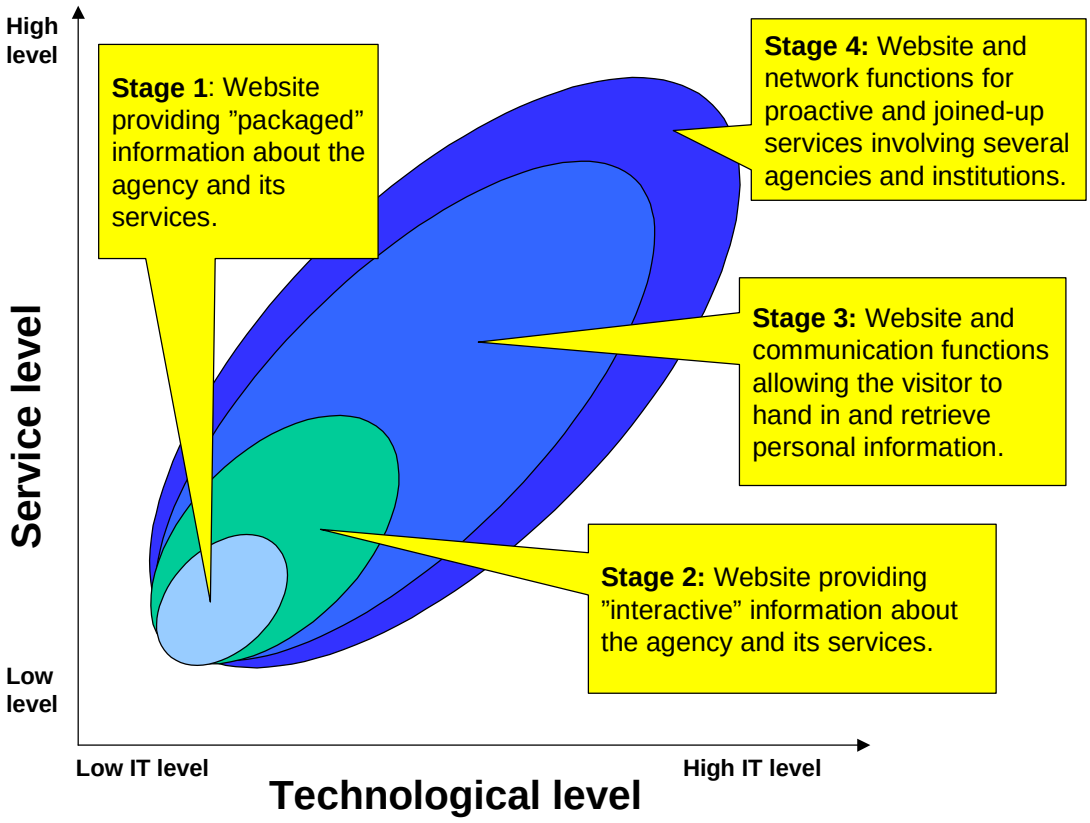
All the agencies consider that the basic notions of improved accessibility, approachability and openness are key goals. If they are to be achieved through the use of IT, clear priorities are required — and not only internally in the agencies themselves. All the agencies express the need for a digital signature that can be equated with a person's manual signature. Agencies also wish to see legislative amendments that would enable more service solutions across agency boundaries to be created and better systems for using joint information resources established.

4. Administration of the 24/7 agency criteria

The criteria are intended to focus primarily on the agencies' ability to supply online-oriented service accessibility. To promote development in terms of public service, they must also include the agencies' ability to achieve citizen-centred quality development and dialogue with citizens. Other important criterion aspects concern the agencies' capacity for *change* and adaptation to the logic of digital administration. Finally, the 24/7 agency must be subject to the requirement that the choice of service technology take place in such a way that, *in terms of infrastructure*, it promotes the whole of public administration.

4.1 The criteria from a supply-side perspective

SAFAD's assessment is that the development of criteria for the 24/7 agency concept should, in an initial stage, focus on the dynamic emergence of electronic online services based on the 'Internet' area, which primarily entails web applications.



The illustration above contains the development stages that, in SAFAD's view, should constitute criterion stages in the process of development towards e-government. The illustration was inspired by a model reported by the Australian National Audit Office.

Service and technological levels are intimately interwoven. But the diagram also contains several hidden dimensions. The 'service level' that enables transactions to be submitted to

the agency electronically requires there to be an adequate 'technological level' in the form of an infrastructure for digital signatures, including 'legal level', which allows the agency to apply the digital signatures. One might also refer to the 'quality level' in the service output and the 'democratic level' in agencies' way of relating to the public.

In the model, the following 'diagonal' development stages — clearly distinct from one another in functional terms — are distinguishable.

Stage 1 Website containing 'packaged' information about the agency and its services
Stage 2 Website containing 'interactive' information about the agency and its services
Stage 3 Website and communicative functions that allow the visitor to submit and retrieve personal information.
Stage 4 Website and network functions for joined-up services involving several agencies and institutions.

In Section 2.2 a self-assessment carried out by 21 agencies, according to criteria and classification in functional stages and levels of the above-mentioned nature, was reported. As expected, this kind of instrument was too rough to afford satisfactory differentiation between the agencies on a service-provision scale.

To serve the purpose desired by the Government, i.e. to permit comparison of the agencies and, for example, carry out benchmarking, the stages should be more finely graded in the development diagram. However, the functional stages of reality are not closer together. SAFAD therefore considers that it is better to retain the four stages and combine them with qualifiers.

A more detailed discussion of the combination of development stages and qualifiers is contained in section 5.1.

4.2 The criteria from a demand-side perspective

Service development to fulfil the notion of the 24/7 agency requires a dialogue with the customers, i.e. the public and businesses. SAFAD's commission states that 'central government agencies must, first, be accessible, service-minded and able to state which services are offered and the forms in which this takes place. Secondly, they must give individual citizens and companies scope for dialogue and for expressing their views on the activity that concerns them. Thirdly, they must permit inspection and control of agencies' activities.' Clarification of these points may be obtained from the following excerpt from a speech held on 23 February 2000 by Britta Lejon, Minister for Democratic Issues and Public Administration. The title of the speech was *What is expected from the public administration of the future*, and it was *aimed at Sweden's director-generals*.

> ***'Good services for the public and businesses:*** public administration in which agencies provide the services desired by citizens and companies, in a manner that suits them. This kind of service is based on the following three principles.
>
> '1. *Availability:* the public and businesses can obtain information, ask questions and carry out transactions when it suits them. To supplement the manual services,

citizens and companies are offered electronic services on a self-service basis. Filing tax returns and applying for jobs and study support electronically, for example, should be feasible. The 24/7 agency is to become a guiding principle.

‘2. *Participation:* the public and businesses know which services are being offered and the forms in which this is taking place. They can, where feasible, select services and they have the opportunity for dialogue and for expressing their views on the activity they are affected by.

‘3. *Collaboration:* in individual transactions, the public and businesses need to contact only one agency. This requires the agencies to collaborate and make use of all the scope offered by information technology in order to carry out various tasks together.

‘Transparency: public administration that offers all citizens

‘4. *Inspection:* every member of the public can by simple means inspect the agency’s work and study public documents.

‘5. *Individual responsibility:* every member of the public can by simple means obtain a clear picture of who is responsible for what at an agency.’

It is thus not only services in a narrow sense that must be included in the improvement in accessibility in the name of 24/7 public service. The whole of an agency and its activities must become more accessible in a broad sense.

4.2.1 What do the public want?

The 24/7 agency must be responsive. It must be alert, listen constantly to members of the public — and consult them actively. Consulting the public means seeking public views, conferring and deliberating, but also taking public views into consideration and reflecting on them. Consultation is thus a way of generating participation.

In SAFAD’s pre-study *Consulting the Public* (in Swedish, 1999:51), consultation methods were divided into two main categories of methods: *information retrieval* and *dialogue creation*. The following example from Denmark contains dialogue-creating methods.

Electronic self-service in the public sector — the online municipality

In a joint venture that is currently (spring 2000) under way between the Danish Board of Technology and the municipality of Holstebro, a technological evaluation project concerning public attitudes towards electronic self-service is being conducted.

Through a combination of a consensus-forging conference, questionnaire surveys, group and in-depth interviews, an expert forum and dialogue meetings, nearly 1,000 citizens on the one hand and, on the other, all the municipal councillors and some 30 national experts were engaged in these activities.

This dialogue with the public shows that citizens are highly positive towards expanded self-service, but that they also expect a serious input from the municipality. The citizens themselves summarise their demands in the following main points:

- Simple electronic access to one's own personal particulars.
- Simple electronic means of monitoring one's own transactions.
- Public awareness of regulations concerning the handling of personal particulars in public administration.
- Public awareness of surveillance regulations.
- Ethical and generally sound conduct on the municipality's part.
- Solutions to technical security problems.
- No personal particulars to be disclosed by the municipality to unauthorised persons.
- Transparent digital administration when members of the public need agency contact.
- Free choice between electronic self-service and personal service.
- No increase in social disparities as a result of electronic self-service.
- No bombardment of information from the municipality.
- No online voting — no measures to simplify democratic procedures.

The public sees the option of using electronic self-service as a means of enhancing confidence in the municipality, which in turn is expected to become more transparent and citizen-focused.

One practical result of this exercise is that the municipality has now established a citizens' panel (users' council) with a focus on electronic self-service and other 24/7 service issues. This panel reports directly to the municipal executive board, and joint meetings between the panel and the board are planned.

More information about the project is available at *www.tekno.dk* and *www.holstebro.dk*.

Every agency, and especially those who seek to dub themselves 24/7 agencies, should continuously carry out public-opinion polling in some form. The specific method chosen and the types of questions to be asked depend on the agency's specific situation.

4.2.2 Accessibility to all

The Government's bills entitled (in Swedish) *Central Government Administration in Public Service* (1997/98:136), *From Patient to Citizen* (1999/2000:79) and *An Information Society for All* (1999/2000:86) are clear expressions of its policy. Its overall objective is to ensure that entry into the information society is both affirmed and subjected to measures aimed at, as far as possible, preventing individuals or groups of citizens from landing in the *digital ditch* or the *broadband backwater*.

The same attitude must apply to every single agency and its service range. IT products and services should be *accessible to and usable by* everyone, as far as this is at all possible.

Agencies that offer electronic self-service systems and other systems of interaction with the public should ask themselves two questions. First, how can usability be optimised? Secondly, how can it be ensured that the systems are usable by the maximum number of citizens, including people with special needs, such as those with disabilities?

Unless these problems are solved in the best possible way, many citizens will be either unwilling or unable to use the self-service system because they find it awkward, problematical, difficult to understand or, quite simply, impossible to manipulate. If, for example, society's use of technology results in the requirement that we are all capable of remembering dozens of different PINs — of which many, for security reasons, are changed perhaps every three months — then we shall all be severely handicapped.

The agencies' services for people with disabilities should be designed in a broad perspective, taking into account the wide variation in the population regarding such characteristics as visual acuity, reaction speed, reach, hearing capacity, dexterity, ability to read text, etc. Electronic self-service and other IT systems that are being established will not achieve their full potential gains if the systems require users to have full functional capacity in every respect.

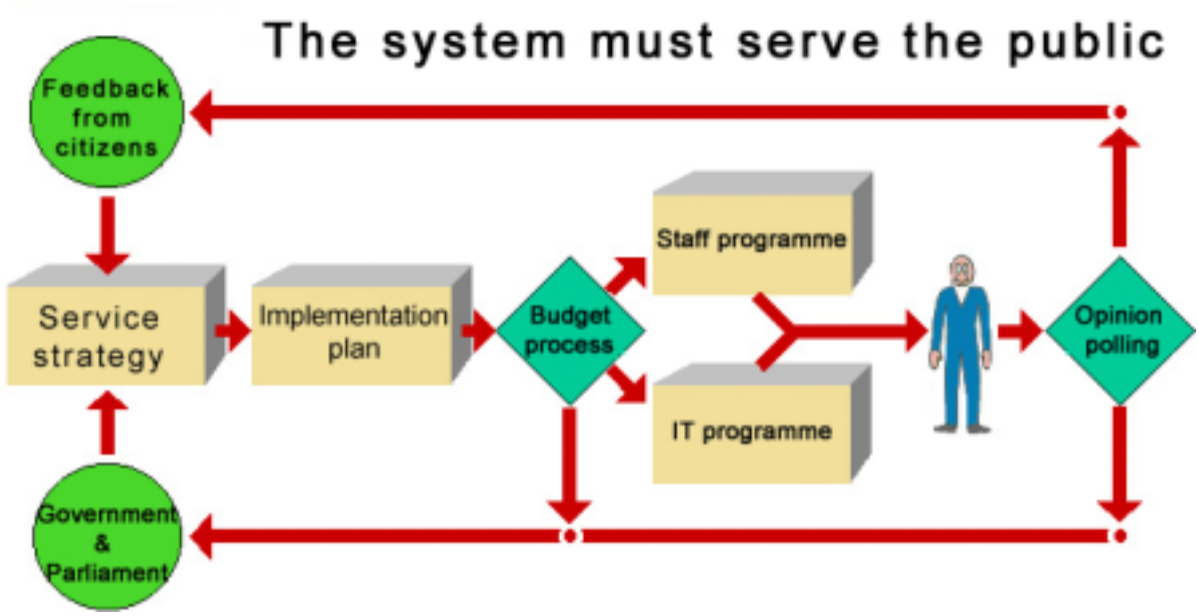
In designing their systems for self-service and other interaction with the public, the agencies' *approach* should comprise the following:

- A perception that high *usability* is necessary if the public are to accept the systems and *wish* to use them in the manner intended, which is in turn a precondition for the realisation of the expected efficiency gains.

- A perception that variation between members of the public, as a group, is very great in terms of the ability to move hands and fingers, see, hear and understand. One requirement for citizens' being *able* to use the systems in the manner intended is that the latter are highly *accessible* to the users, i.e. designed with reference to this variation.

4.3 The criteria from a governance perspective

The criteria are intended to form part of the Government's IT and administrative policy, and the Government will be the owner, administrator and implementer of the criteria. We may start with a general model of the means by which the Government can express its administrative-policy intentions vis-à-vis an agency or group of agencies. The term 'budget process' relates both to the process under way within an agency and to the governance dialogue between it and the Government.



With control methods of various kinds, the Government can come closer to the agencies and their ways of implementing the 24/7 agency concept.

General inputs in the form of information campaigns, awards, etc
The Government can pinpoint the importance of agencies improving their accessibility by means of various forms of electronic self-service. Agencies that, according to the criteria, are good examples of the 24/7 agency concept can be singled out as encouraging models. Competitions may be an effective means of disseminating knowledge of successful service concepts.

General instructions in the form of e.g. a 24/7 service decree
The Ordinance on overview of central government agencies' information systems prior to the year 2000 (SFS 1997:30) served as an excellent tool for getting *all* the agencies to adjust their information systems in time for Y2K. Through the Legal Information Ordinance (1999:175), the Government has recently arranged for the agencies' regulations and general recommendations to be available online by 1 July 2000 at the latest.

Specific instructions in official appropriation documents for all the agencies
This control instrument has the great advantage of being an element in the governance dialogue between the ministries and agencies, and may be used in a manner adapted to the activities concerned. For its proper functioning, the ministries must fully grasp the overriding importance of all agencies developing electronic self-service, and also of compliance with the instructions being monitored.

Specific development assignments for agencies
To promote the evolution of electronic administration, the Government can take the initiative for specific development assignments. Particularly relevant in terms of the 24/7 agency concept are the National Tax Board's (RSV) and the National Board for Industrial and Technical Development's (NUTEK) current development commissions. Under RSV's commission, the public and businesses will be enabled to use certificates and keys in their dealings with the central government. NUTEK's is a matter of building and maintaining a portal for SMEs' official contacts.

4.4 Infrastructure issues

The criteria for the 24/7 agency concept are intended to focus primarily on the agencies' capacity to provide online service accessibility.

In general, it is essential for the agencies to implement similar technology (gains from co-ordinated procurement), information standards (gains from collaboration) and conduct (gains from user-friendliness).

Through the emergence of the World Wide Web and other IP-based communication systems, a world standard for online systems in which the Swedish central-government agencies are an integral part has been established.

This imposes radically more stringent requirements on 24/7 agencies: they must choose and implement service technology in such a way that, in terms of *infrastructure*, it promotes the whole of central public administration and its aggregate electronic online services. Such choices cannot be made by individual agencies entirely on their own. In other words, there is a growing need for development of joint strategies throughout central government administration for the range of electronic services available. There is also a need for joint guidelines to support the agencies' work.

The Annex describes in brief some of the components of e-services that should be subject to joint consideration throughout central public administration:

- the SHS — Delivering and Receiving System
- electronic forms
- metadata
- search engines and portals
- electronic ID and digital signature
- interactive digital TV.

5. Criteria and measures for implementing the 24/7 agency concept

Analysis of the form, content and application of the desired criteria prompt SAFAD to conclude that the criteria should focus primarily on the agencies' manifest capacity for electronic service interactivity vis-à-vis the public and businesses. To supplement this, we propose criteria concerning the provision and presentation of general official information, and also transparency in agencies' activities. Just as important is the question of how the Government administers the criteria and follows them up with inputs of various kinds. Proposals on this matter are provided below.

5.1 Proposed criteria

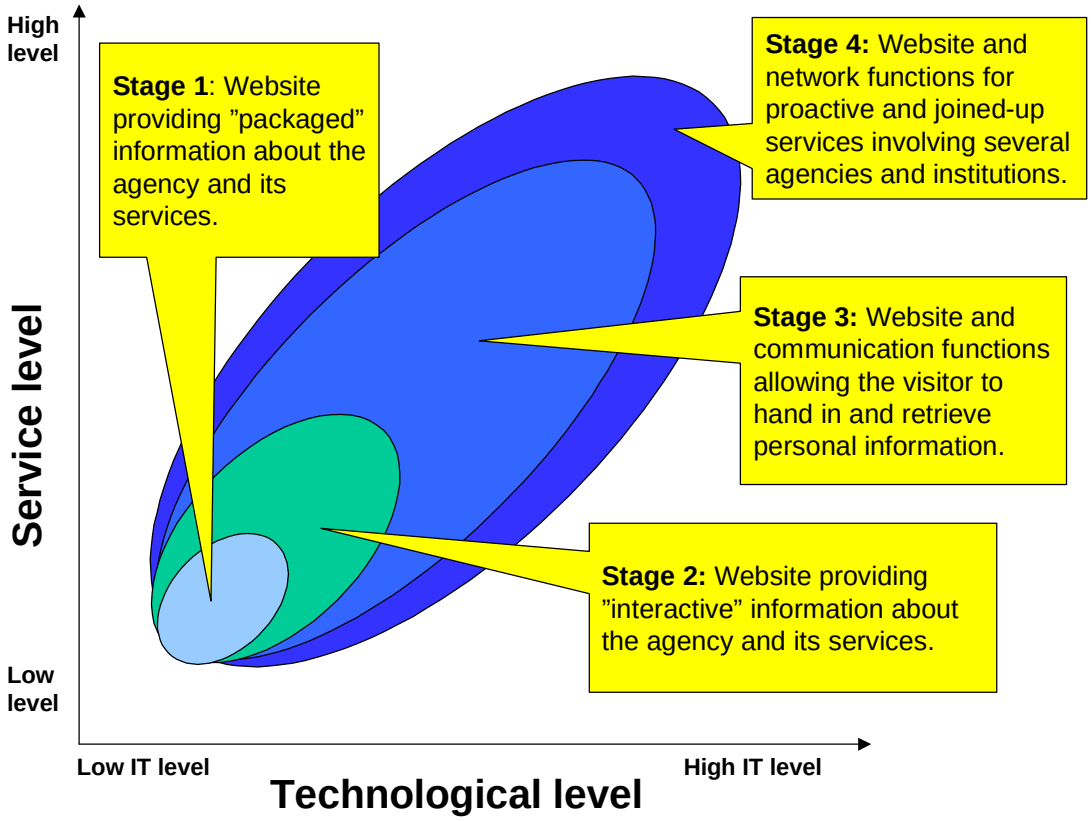
There is no absolute affirmative or negative answer to the question of whether an agency operates on a 24/7 basis. Individual lines of activity can fulfil this kind of requirement without the agency as a whole doing so. An agency that is deemed in the year 2000 to fulfil the requirements may, a year or so later, already be perceived as stagnant. Accordingly, the agencies must conduct continuous service development at the same rate, at least, as criteria for the 24/7 agency concept are developed.

We propose that manifest ability to provide online electronic interactivity should be the primary yardstick of how far an agency has progressed in terms of 24/7 operation.

5.1.1 Capacity to provide interactive services — development stages

SAFAD proposes that the following development stages serve as the primary criteria for the 24/7 agency concept. The agencies may vary in terms of the progress they have made in various areas of activity, and their service output may be of varying breadth. To permit comparisons between agencies, SAFAD proposes that the primary criteria — the development stages — be combined with qualifiers.

Stage 1 Website containing 'packaged' information about the agency and its services
Stage 2 Website containing 'interactive' information about the agency and its services
Stage 3 Website and communicative functions that allow the visitor to submit and retrieve personal information.
Stage 4 Website and network functions for joined-up services involving several agencies and institutions.



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:

Qualifiers

a) Quantity and quality of the transaction-related information provided.
b) Quantity and quality of the general information provided.
c) Quantity and quality of the general information presentation.

By visually noting an agency's status in terms of the 'stage/qualifier matrix', one can obtain an aggregate measure of the agency's development level. It is also advisable, in some suitable way, to include in the assessment the rate at which, from one year to the next, an agency moves to increasingly high levels in the development process. In section 4.3, we discuss the manner in which such further development work can take place.

5.1.2 Qualifiers within the development stages

a) Range of transaction-related information

The degree of interactivity characterising transactions may be illustrated by means of the following list of finely graded development levels for transaction-related information involving, for example, involve application of information exchange by means of forms.

- *'Looking'*: up-to-date information is provided concerning, for example, the progress of a transaction, the regulations applicable and answers to common questions.

- *'Ordering'*: scope for ordering forms, information material, etc. Distribution by regular post.

- *'Downloading'*: scope for downloading files containing forms and information material to print out locally. The forms are then filled in manually. Distribution to agencies by regular post.

- *'Executing'*: the option of, for example, filling in a form on the screen before printing out locally. Distribution to agencies by regular post.

- *'Interacting'*: the option of, for example, filling in a form on the screen before printing out locally, with online calculation and control programs as support. Distribution to agencies by regular post.

- *'Submitting'*: the option of, for example, filling in a form on the screen before printing out locally, with online calculation and control programs as support, and a transmission function as online transaction initiation.

- *'Checking'*: the option of monitoring a transaction during the handling process, and the option of providing additional information and initiating dialogue with an administrator where necessary.

- *'Completing'*: the option of being notified online of transaction decisions and receiving guidance on how to appeal, if desired, in the form of online contact with a higher authority, for example.

b) Range of general information on the website

The range of general information provided is a crucial indicator of the progress an agency has achieved in its process of development towards 24/7 service. The order of the following input areas is not critical.

- The agency's instructions, appropriation documents and government decisions relating to operations, the annual report, budget documentation and activity plans, and also minutes of board meetings and the agency's principal decisions.

- An organisational overview with information on how to contact managers, and also staff lists with telephone numbers, e-mail addresses, etc. (Lists must be assessed with respect to suitability before being issued.)

- Overview and contact information concerning current projects, surveys, etc, aimed at enhancing service development and accessibility.

- The agency's official comments on proposed legislation, in searchable form.

- An electronic version of publications (reports, surveys, etc) issued, and the option of online ordering of printed publications.

- A list of the registers kept by the agency, and regulations governing access to them.

- An account of the agency's various forms of participation in EU work.

- Scope for the public to study and search the agency's records.

- A proactive attitude, including the option of subscribing both to general information (press releases, new reports, etc) and to specific service information (latest application date for grants etc).

c) General information presentation

As the agencies join the online society, they are subject to increasingly stringent requirements concerning the visible layout and underlying structure of information. The order of the following input areas is not critical.

- The overall range of information on offer is arranged according to user needs, rather than according to how the agency's activities are organised. There are relevant links to other agencies and social authorities.

- All the agency's documents are searchable by means of a search engine at the website itself.

- The website is produced with standardised markup codes (W3C), especially with respect to web accessibility. Where necessary, a pure text version is provided for such users as those with voice browsers (which use speech synthesis and prerecorded material to present the contents of Web pages).

- To facilitate matters for such users as those with 'narrowband' connections, the use of images and animation technology is minimal. Large files in PDF format are also split up (into sections or chapters, for example).

5.2 Proposed areas of inputs to support service development

SAFAD proposes that the Government initiate the following inputs to support the agencies' online service development, to bring about improved accessibility and service quality.

Systematic development of activities

The managers of each individual agency bear primary responsibility for continuously developing their own activities and making their services increasingly accessible. Realising the concept of a 24/7 agency and electronic administration will impose demands on the agencies' capacity to develop their own activities.

In a 24/7 perspective, as SAFAD sees it, the agencies should strengthen the central processes in their activity development listed below. Furthermore, the Government should consider how best to satisfy the need for both guidelines and good examples, on the one hand, and information exchange between agencies on the other.

- The agency should, in some suitable manner, keep itself continuously informed of citizens' (and companies') wishes, experience, preferences and satisfaction relating to its activities and service range.

- The service range should be citizen-centred and, with regard to general information, governed by demand. There should preferably be an approach oriented towards inter-agency co-operation in the form of, for example, a coherent transaction concept and a joint approach regarding users' life situations and companies' business situations.

- Processes should be applied for systematic, continuous improvement in the quality of services and activities.

- Commitments concerning service range and other information about activities should be reported openly in the form of a 'service declaration'.

- Alternative service channels should be dimensioned, manned and scheduled in such a way as to make freedom of choice between physical offices, telephony services and Internet services a reality.

- Changes in services should be towards a constantly increasing element of self-service activities, and shifts in the balance between traditional, personal services, call centres, service telephones and online services should be accompanied by costing of service changes showing how savings due to a raised degree of self-service afford improvements even for citizens who, for various reasons, are not covered by the self-service range.

Refined governance dialogue

The Government should clarify the governing role of the ministries in their respective agencies' individual and co-ordinated efforts relating to enhanced accessibility and higher quality in the electronic service range. The objective should be for work on service and accessibility issues that are central to a 24/7 agency to be a regular feature of the annual governance dialogue between the Government and the agencies.

The Government should consider whether, in its appropriation documents for individual agencies, it should specify targets for the agency's work on developing electronic services, in dimensions including the following:

- *Target specific services or service areas.* One target, for example, might be for the Central Office of the Swedish National Land Survey (LMV) to offer a property search service that is free of charge; another might be for *Sveriges Statskalender*, Sweden's Official Directory, to be available online through Sweden Direct, the government's electronic information service.

- *Specify the rate at which a particular target should be attained.* Examples of how governments worldwide use this approach are that '100 per cent of all agency services must be available online during the year 2005 at the latest' (in the United Kingdom) and that 'from 1 January 2000, an agency's customers/clients must be entitled to the same scope for electronic interaction with agencies as is applied within the agencies themselves' (in Finland).

- *Target the users' satisfaction with, scope for and utilisation of 24/7 service.* The Government can specify desirable results at citizen level, for example in the form of requirements that agencies should attain a particular level of user satisfaction, measured in a specified way, or that a particular proportion of agencies' dealings with the public should take place on a self-service basis.

- *Target specific technical applications.* Government inputs in this area of governance may, for example, be expressed as the target that 'websites must be available in text versions to permit reading by means of a voice browser' or that 'digital signatures approved by Swedish banks must also be approved by central government agencies.'

Continuous monitoring

- The Government should monitor, and issue an overall report on, the agencies' inputs to fulfil the objective of 24/7 service and more accessible electronic administration, thereby drawing attention to the scope for benefiting from current efforts to improve quality in central government.

This monitoring should take place both on an individual agency basis, with an account given in each agency's annual report, and collectively for the whole of central government administration, as part of an annual report on its development.

Process of change throughout central government administration

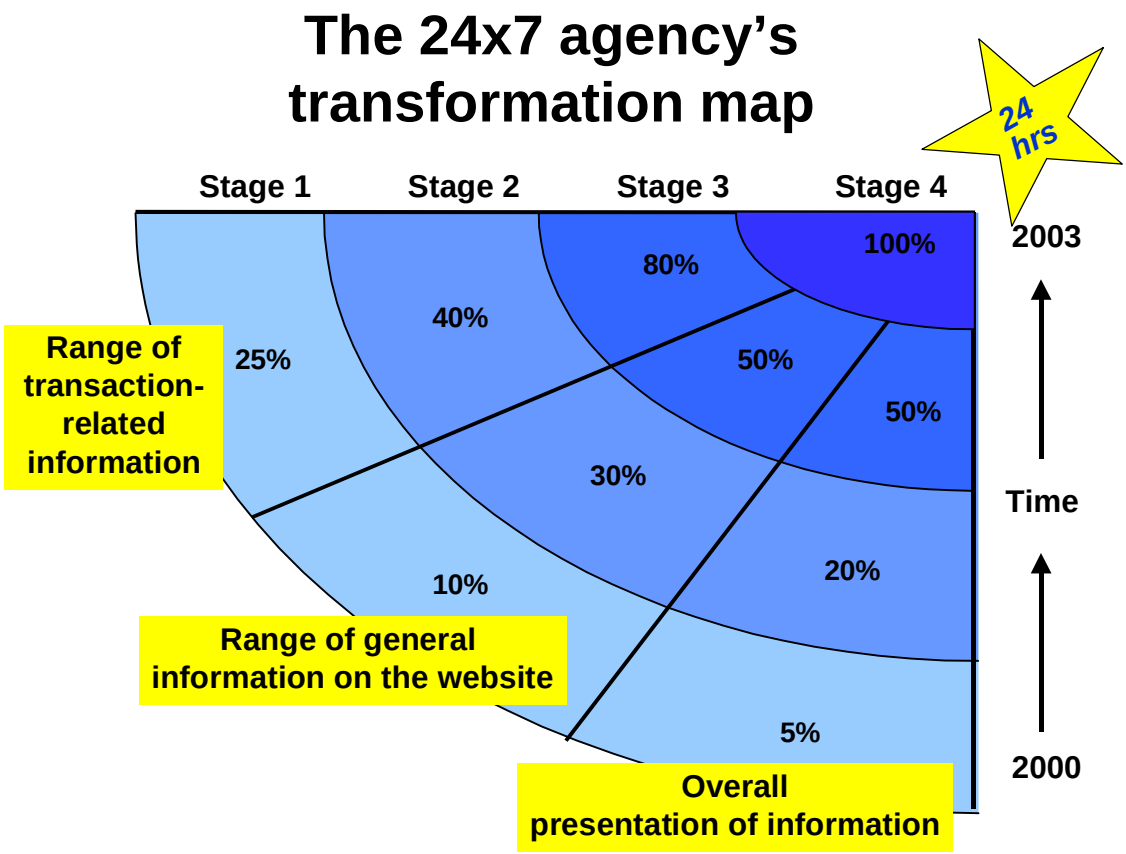
- The Government should commission several central government agencies to carry out self-evaluation, in the form of statements of opinion on the present report, of the stage of development they are in; and also to issue overviews of their own strategy, in terms of the 24/7 agency concept.

- The Government should charge one or more agencies, in co-operation, to arrange a conference — in autumn 2000, SAFAD proposes — concerning the theory and practice of 24/7 service.

5.3 Further refinement and continuous application of the criteria

The operational application of the criteria must be adapted to the form selected by the Government for further work. In addition, rapid technical development is expected successively to improve the scope for electronic administration in the citizens' service.

SAFAD proposes that the following outline be further refined to make it an operational tool for the Government's and agencies' further work on developing online services leading to improved accessibility and service quality.



Annex
Examples of e-service components

The 24/7 agency must pursue constant service refinement and be knowledgeable about the users' requirements and expectations, social development and technological advances. The following areas of technological development, described in brief, may to some extent be said to belong to the infrastructure on which a 24/7 agency must shape its services:

1. the SHS — Delivering and Receiving System
2. electronic forms
3. metadata
4. search engines and portals
5. electronic ID and digital signature
6. interactive digital television

In the United Kingdom, within the framework of the 'Modernising Government' programme, the Government has devised a whole series of specific policy documents and manuals for single components of these kinds in the development of online public administration (see http://www.iagchampions.gov.uk/iagc/guidelines.htm).

1. The SHS — Delivering and Receiving System

The Swedish SHS (*Spridnings- och HämtningsSystemet* in Swedish) is a result of collaboration between agencies. The project, initiated in December 1997, is a manifestation of the then Top Managers' Forum's project on joint IT platforms for information exchange and further development of actual implementation by RSV and RFV.

The SHS concept is owned jointly by the agencies that belong to the SHS board. Their joint responsibility is to administer and further develop the SHS specifications, which are open and published on the Internet.

SHS is a system for information exchange between different application systems. This communication (or information exchange) is reliable and based on electronic identification and Internet technology over the public Internet, as well as via fixed connections between SHS users. Thanks to a common transfer format, SHS helps to boost efficiency in collaboration between central government agencies, and with the rest of the public sector. SHS also permits information exchange between citizens, companies and the public sector to be simplified.

With SHS, users who exchange information can identify themselves to one another. Functions exist to assure the sender that the information has been transferred in unchanged form. The content can be transmitted in both encrypted and non-encrypted form. The information exchanged can also be signed. The security level to be applied is determined in a formal agreement between those who exchange information.

Nowadays, when information is exchanged between and within organisations, they have a unique solution for each such exchange. A high proportion of IT costs consists of

management of incoming and outgoing data in the organisations that exchange information between different applications.

One solution to this problem is to standardise communication, external and internal alike. SHS provides the user with a platform for all management of incoming and outgoing data. It deals with all incoming and outgoing data, regardless of whether information is being transmitted internally within an organisation or between two different organisations. There is ample scope for improvements in the processes involving different organisations. For individuals and companies SHS may mean that, in the long term, only one communication interface needs to be used vis-à-vis public administration, provided that all the agencies concerned implement SHS.

All exchange of information within SHS is based on its taking place in a manner defined by agreement. Data exchanged in SHS may range from a simple message comprising one or more terms to a large computer file. A user can subscribe to a certain type of information from another SHS user. If, for example, an agency obtains a certain type of information, this can be passed on to another agency, provided that an agreement to this effect has been reached.

One specific example of an application that will make use of the SHS function of further distribution is the 'business start-up' e-service that will be made available during this year. The working name for this service is *Kontakt-N*. When a new company is to start up, the would-be entrepreneur needs only one 'agency contact'.

2. Electronic forms

The basis for all repeated communication is structuring of the information conveyed. Since time out of mind, this has been done by means of forms. In the computer world, structuring takes place through the information being marked in the form of a message, such as <Here starts the data field relating to Q> and <Here ends the data field relating to Q>.

Originating in Gothenburg harbour, where more than 30 years ago traders and administrators tired of filling in various types of forms with the same information over and over again, a concept known today as EDIFACT has emerged. This has now become an international standard for *computer-to-computer* communication, and is in principle a set of basic electronic forms.

Standardised electronic transmission from citizens' computers to agencies' computers has now come to the fore. The natural first step is then to obtain from the agency by electronic means (website or automated attendant) and/or print out the form, and then fill it in and post it manually. But this primitive first stage must be superseded by more efficient methods as soon as possible.

Companies often complain of agencies' appetite for obtaining information from them by means of countless forms. When SAFAD assisted the Patent and Registration Office (PRV) in surveying this state of affairs, it was found that the ten agencies with the most types of form for companies to fill in had a total of 1,152 form types altogether. It also

emerged that a total of 70,349,330 forms are received by the agencies that collect the most information. Of this total, RSV accounts for more than 60 million.

One objective that is attainable within the relatively near future is for forms to be filled in, given approved digital signatures and submitted electronically. This represents a simplification for those who submit information and a *very* great simplification for those who receive it. All scanning-in of paper will, for example, become unnecessary.

The use of electronic forms is closely associated with marking, harmonisation and possible standardisation of information and meta-information. The HTML (Hyper Text Markup Language) system, which is used to standardise communication for all Internet browsers, is a primitive marking system. The considerably more powerful and general XML (eXtensible Markup Language) is growing rapidly. XForms, a new member of the XML family, permits XML marking of electronic forms.

Agreements on products where information can be collected in XML format will be signed within the framework of SAFAD's XML procurement.

3. Metadata

One problem familiar to everyone is that of navigating one's way in all the information that is available on the vast global Internet. But the total quantity of electronic information in the Swedish central government agency sector, too, is dazzlingly large — if not as disorganised as the anarchic Internet, which entirely lacks a controlling hand.

The more the information mass grows, the greater becomes the need to be able to name and describe information, i.e. provide details about the information itself or, in other words, 'meta-information' or 'metadata'. The dividing line between meta-information and actual information can sometimes be fluid.

Questions in the sphere of metadata are a matter of structuring and standardising or harmonising information about information. The standardised cataloguing system of libraries is one example of a metadata system. Establishing such a system has never been simple, and although better technological support is now available for rational information management, needs and problems surrounding terms and concepts persist.

The agencies' general handling of transactions that is relevant to a 24/7 service concept calls for the information exchanged to be clearly defined, and the manner in which it can be used to be decided. This is particularly noticeable in *processes* that are common to several agencies, as in the *Kontakt-N* project, for example (see the section about SHS). For all the agencies included in the system of legal information, XML must be used for regulations and general recommendations (Government Offices' decision of 5 April 2000, FA200046/IT).

In 1996, under RSV's leadership, the Top Managers' Forum carried out an investigation of information quality. A responsibility model was outlined, in which responsibility for the retrieval and continued quality of information was separated from the use of information. Analogously to basic data it is conceivable that, using new technology, a model could be

used in which not information, but only meta-information in the form of links to the required information (such as documentation for decisions), is transferred between agencies. The information is, in other words, referred to.

One example of referring to, rather than transmitting information is the extensive linking that takes place in the Internet world. Work is under way in W3C, the international consortium, to renew the present-day system of link addresses. Today, a link indicates a physical storage site (Uniform Resource Locator or URL, also popularly known as a 'link'), such as *www.statskontoret.se/pagang/projit.htm* (an information reference). The aim is to be able to point at a logical name (Uniform Resource Name or URN), such as 'Report: What is XML?' — that is, at an object that should have a certain stability over time, regardless of whether the object is then moved around on the Internet.

Today, well-defined metadata standards already exist that, it is true, are being updated and adapted to new web standards (the XML family). Dublin Core is the current metadata standard, and with XML comes RDF (Resource Definition Framework). With these concepts, we step onto the next rung of the ever steeper ladder represented by the web revolution. The rungs lead up to the semantic web, in which information is based on well-defined, well-structured and logical structures that are understood not only by people, but also by machines. Various companies engaged in IT analysis consider that, in a few years' time, a very high proportion of traffic on the Internet will be generated not by people, but by machines.

We shall then see machines talking with machines in the form, for example, of personal 'agents' and 'robots', i.e. programs that users can instruct to obtain, for example, the forms they need from RSV, or to check the current status of their unit-trust savings with the Premium Pension Authority (PPM).

4. Search engines and portals

With the exponential growth of official public-sector information that is available online and the Internet linking of various databases, it is increasingly important to give the users good search tools. A good and efficient search function should be provided on all public-sector websites. This presupposes that users find their way to the websites in question: the public sector must market its websites.

A user who is really skilled can, by means of 'keyhole surgery', find highly detailed information in very narrow areas. We others feel frustrated that we cannot find anything at all, or far too much, or information that is out of date.

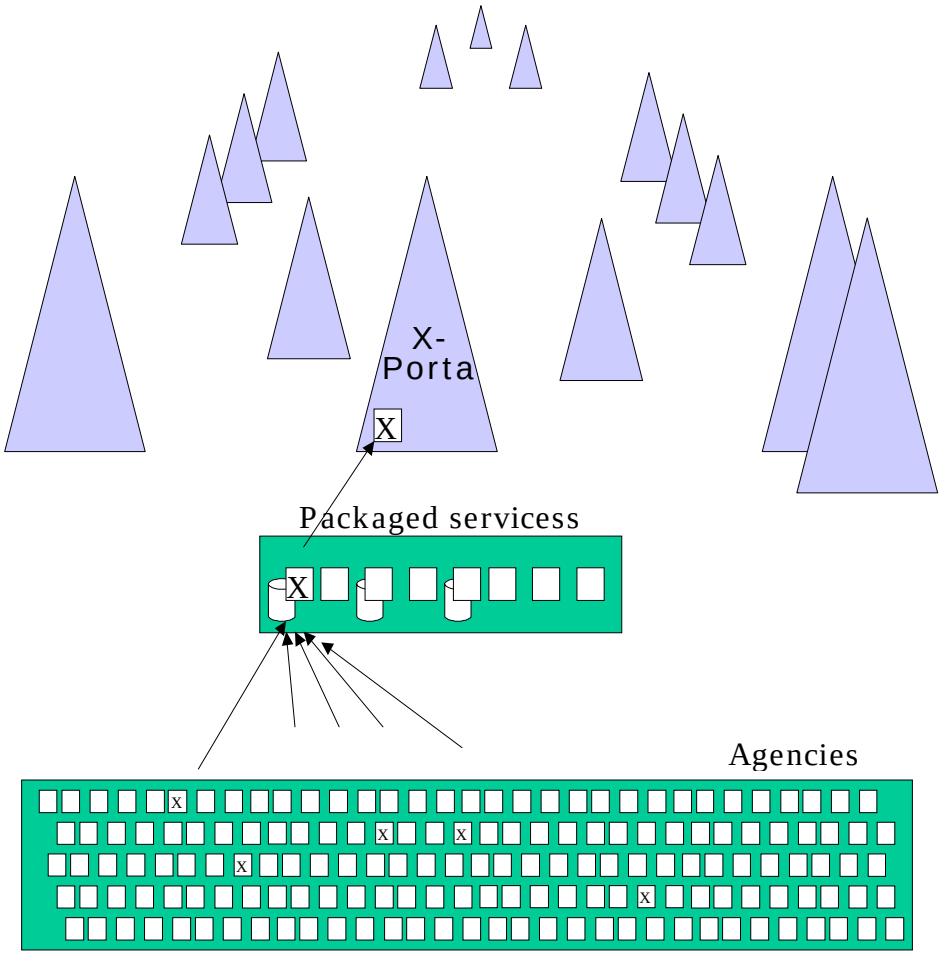
The Royal Library has developed *Svesök*, a system for online search of information provided by the public sector. A 'robot' searches all the websites (which must be defined) and retrieves information for the large Svesök database. Anyone who then carries out a search via Svesök knows that the information 'hits' come from the public sector only and do not predate the latest robot search (which can, at present, be up to six months previously).

But what should one do when a search for the term ‘social care’, for example, yields 30,987 suggested websites to visit?

One can improve one’s searching skill; obtain better search tools; and hope that the information suppliers become more skilled in packaging and marking their information. And one can visit a portal that focuses on the subject area in question.

The dictionary definition of a portal is ‘an embellished main entrance’, which in this context could be translated as a well-designed website (including a search engine) with links to websites in the subject area covered by the portal.

At present, there are 12 portals with government financing. The foremost is *www.sverigedirekt.riksdagen.se*. In a fully extended agency network, portals could be ‘assembled’ for each type of coherent service. A portal could, for example, provide electronic forms from all the ‘form agencies’. This would involve the creation of a central form database. However, it would be difficult to bring about such a valuable resource without inputs from the ministries concerned.



In the portals of the next generation, users themselves will be able to decide which information they want to receive continuously from the online information channels that are linked to the portal. In other words, one will be able to subscribe to new information by personalising the portal according to one’s own interest profile. The channels leading into

the portal will then provide day-to-day information according to the profile specified by the user — tailor-made in the latest cut and style, so to speak. XML will often underlie all this, but users need not concern themselves about that. 'Syndication and profiling technology', as this area is called, could yield a whole range of attractive services for public administration.

As portals successively become more intelligent and their services better integrated, the boundaries between them and traditional database systems will be eliminated. In fact, every *http://homepage* and every *http://entrance* to a database may be regarded as a portal. This will make it even more essential to grasp the aggregate mass of websites and portals. If an agency is to be the maintenance provider of many different portals, more advanced co-ordination will be necessary (as opposed to desirable, as at present). Only then can a 24/7 agency work seriously on such concepts as portal modules, syndication of public-sector information, and open information sources.

Our future 'smart' ID cards equipped with microprocessors — citizens' cards — should also come to 'serve' by virtue of the fact that they constitute keys to personal portals with reliable, profiled and syndicated interaction with the agencies.

In other words, the 24/7 agency will become a virtual body that is summoned when someone needs it. Government decisions relating to pensions, for example, should come up automatically on *www.pension.nu*, and so forth.

5. Electronic ID and digital signature

Scope for exchanging information with the Internet world is virtually unlimited. But the scope for doing so securely has been severely limited.

The Internet is an open, unsupervised environment owned by no one. Nevertheless, for serious information exchange, transmitters and recipients must be able to identify one another and rely on the information exchanged arriving in undistorted form, without unauthorised access. The fact that this has not been the case has been the great stumbling-block, preventing serious online electronic trading and serious electronic administration — until now. Standard routines and products are rapidly becoming accessible to Everyman and the agencies, too, in their electronic dealings.

Information has been stored and managed electronically in the agencies' central specialist systems for the past 30 years. However, when Everyman wishes or is obliged to carry out some transaction relating to an agency, paper has been the dominant medium. This procedure has, as a rule, been dictated by the legal necessity of authenticating, by means of a manual signature, the information submitted.

The digital signature is now entering the field. The EU now requires Swedish legislation to equate good new digital signatures with good old manual signatures. The Ministry of Industry and Commerce is preparing to insert into Swedish law, with effect from 1 January 2001, the directive concerning digital signatures that has been adopted in the EU.

The current requirements concerning electronic relationships in the agency world are:

- *Identification* of someone or something. The procedure includes functions for reliable verification of the opposite party's identity when information is exchanged, e.g. when a user logs on to a website, or someone wishes to send or receive sensitive information.

- *Non-rejectability*, i.e. that digital signers cannot deny their own signatures. The function can also include protection against denial of reception in cases where digital signatures are applied against receipt. The technology and the legal aspects must form a coherent whole in order for the non-rejectability functions to work.

- *Protection from view* or encryption, to prevent unauthorised access to information.

- *Distortion protection* to show whether information has undergone any change in the course of transmission or after storage.

The technology for generating these functions involves using 'certificates' and keys. These, in turn, require public key infrastructures (PKIs). On the basis of SAFAD's survey (2000:07) on *Infrastructure for Reliable Electronic Transfer to, from and within Public Administration* (in Swedish), the Government has commissioned RSV to report, not later than on 1 October 2000, on how responsibility for issue and administration of certificates and digital signatures should be organised within central government administration. This commission is intended to enable citizens and companies to use certificates and keys in their dealings with the central government.

6. Interactive digital television

In SAFAD's commission, interactive digital TV was mentioned as a potentially interesting area for a 24/7 agency.

How long does it take for a new IT or telecommunications gadget or technology, after establishment, to penetrate society to the extent of at least 50 million users?

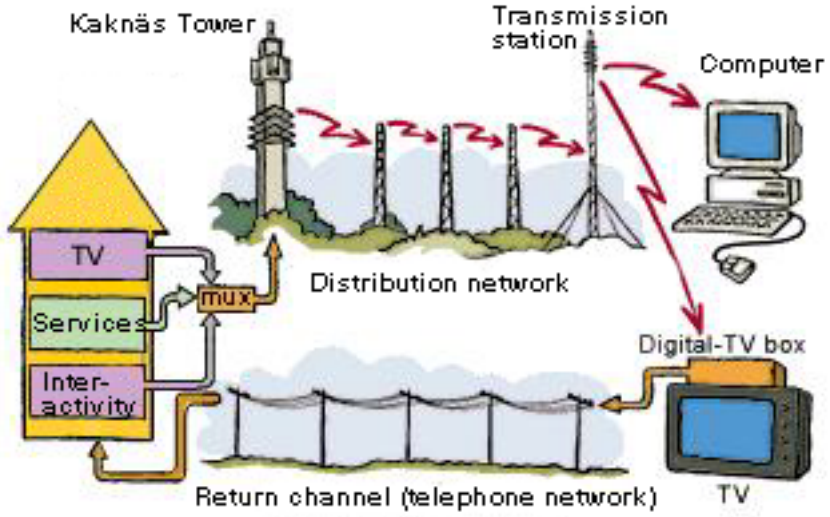
- Traditional telephony took 75 years.
- Traditional analogue television took 25 years.
- The Internet took 5 years.
- Interactive digital TV with Internet access is taking 3 years?

With digital TV, the traditional TV signal is replaced by a stream of ones and noughts. TV images and sound are thereby improved, while the distribution system can contain six times as many TV channels. There is therefore no doubt that digital TV will successively oust analogue TV. The doubt that exists has related to the central government's decision to invest in terrestrial digital TV, where the receiving aerial does not need placing, or to whether the market will look after distribution by means of satellite and cable systems.

In both cases, however, a digital-TV 'box' (set-top convertor) is required for viewing by means of the ordinary analogue-TV set.

In the United Kingdom, where a million digital-TV users have emerged in just over a year, digital-TV sets that combine TV and computer functions are already on sale. In Sweden, forecasters in the state-owned enterprise Boxer/Teracom expect 100,000 digital-TV convertors to be hired during the year 2000. Teracom's digital terrestrial network will, in 2002, cover 98 per cent of Swedish households.

Interactive digital TV means that a transmission channel (e.g. through a telephone connection) is established *from* the TV viewer *to* the TV broadcaster. The illustration below, from *www.digitaltv.nu*, shows a diagrammatic sketch of the system of terrestrial interactive digital TV.



Thanks to the set-top box (convertor) — which contains a processor, memory and telephone modem — the TV becomes interactive, so that it can serve as both a TV set and a computer, and also communicate with other computers over the telephone network.

The converse is also feasible: a computer equipped with a special chip card can serve as a digital TV receiver.

TV viewers will be able, for example, to use their TV sets for banking transactions, shopping, Internet surfing, ordering of theatre and cinema tickets, and dealings with agencies — which will thus obtain an interactive channel, open round the clock and seven days a week, straight into the citizens' domestic TV environment.

The systems that are advancing rapidly in the United Kingdom already include e-mail. One version of this function is the option of sending e-mail to oneself, possibly in co-operation with an agency. During a programme one could, for example, receive reminder messages such as '*Deregister the motorbike on Saturday. Winter tyres on the car.*'

As for the interactive services that digital TV will offer in the future — such as shopping, education and the means of carrying out banking transactions, sending e-mail and surfing on the net — these are not yet a reality, but will be soon. First, the services have only just become available; secondly, capacity in the technology contained in present-day digital-TV set-top convertors is not entirely adequate. What is missing today is, first, a computer's

capacity to process information and, secondly, a computer's communication capacity as a basis for an interactive exchange of information. Development is, however, under way. Nowadays, decoders and convertors can have built-in modems and thus Internet capability. Development tools and APIs (Application Program Interfaces) are available.

Boxer/Teracom have initiated interactivity on a small scale. Accordingly, 'e-Weather' (*eVäder*) presents local and global weather forecasts from more than 300 locations worldwide — everything from the local morning forecast for the day to the week's forecast at a prospective holiday resort. Depending on the season, the latest pollen count, snow depth before a skiing holiday, sunrise and sunset times, shipping forecasts, etc are also available. The ***eVäder*** ('e-Weather') service is offered jointly by '***eTV***' and the ***Swedish Meteorological and Hydrological Institute (SMHI)***.

Civic information via digital TV is obtainable for viewers living in the county of ***Östergötland***. There, the ***Social Insurance Office*** has embarked on a pilot project in co-operation with Active TV, presenting information on the new pension system. Today, viewers have access to general information about the pension system and assistance in calculating their pensions in the same way as on the Internet. They can also read Questions & Answers, order information and obtain advice on alternative ways of contacting the Social Insurance Office.