Contents

Abbreviations

ARPA	Advanced Research Projects Agency
ARPANET	Advanced Research Projects Agency Network
CERN	Conseil Européen pour la Recherche Nucléaire
DARPA	Defence Advanced Research Projects Agency
DNS	Domain Name System
DNSSEC	Secure DNS
DoC	Department of Commerce
EUnet	European UNIX network
GAC	Governmental Advisory Committee
GTLD	Generic Top Level Domain
IANA	Internet Assigned Numbers Authority
ICANN	Internet Corporation for Assigned Names and Numbers
ICP-1	Internet Domain Name System Structure and Delegation
II-Foundation	Internet Infrastructure Foundation (Stiftelsen Internet Infrastruktur)
IP	Internet Protocol
ISA	Invest in Sweden Agency
ISO	International Organization for Standardization
ISOC-SE	Internet Society – Swedish Charter
MIT	Massachusetts Institute of Technology
NDR	The Committee for Domain Name Regulations in Sweden (Nämnden för DomännamnsRegler i Sverige)
NIC-SE	Network Information Center Sweden
NNO	the Review Board (Nämnden för Omprövning)
NORDUnet	Nordic University Networks
NSI	Network Solutions Inc.
NÖD	the Domain Names Appeals Board (Nämnden för Överprövning)
PRV	the Swedish Patent and Registration Office (Patent- och registreringsverket)
PTS	the National Post and Telecom Agency (Post- och telestyrelsen)

RAND	Research and Development
RF	Constitution Act (Regeringsformen)
RFC	Request for Comments
SLD	Second Level Domain
SUNET	Swedish University Network
TCP	Transmission Control Protocol
TLD	Top Level Domain
WIPO	World Intellectual Property Organization
WWW	World Wide Webb

Summary

The Committee on Domain Name Administration finds that, technically speaking, the Swedish top-level domain .se works excellently. But the Swedish system is lacking in legitimacy and transparency, added to which, there is widespread criticism of the privately created and applied regulatory system of prior assessment. As a consequence, more Swedish businesses today are registered under other national or generic top-level domains – .nu and .com, for example – than under the Swedish top-level domain .se.

As the Committee sees it, the Swedish top-level domain .se should be a natural abode of all users having a connection with Sweden.

The Domain names Committee therefore proposes:

- That a new system be introduced, with simple, straightforward rules and no prior assessment.
- That the task of managing the Swedish domain names system be formalised through an agreement between the Government and the contractor.
- That the Internet Infrastructure Foundation (the II Foundation) be made contractor.
- That the Government appoints two permanent members and one alternate of the Board of Directors of the II Foundation.

The Committee's proposals give .se the legitimacy desired and make it possible for businesses, organisations and individual persons to register viable domain names quickly, inexpensively and easily. This will:

- Increase the number of .se registrations.
- Benefit e-commerce in Sweden.
- Benefit the new economy and entrepreneurial start-ups.
- Make it easier for citizens and consumers to search and obtain information and to do business on the web.

Points of departure (Chaps. 1-3)

A domain name is the name which an ever-increasing percentage of Sweden's population have learned to associate with communication on the Internet. Domain names are necessary for reaching home pages on the Internet, for finding information about products, companies and phenomena. What is more, domain names have a crucial bearing on the development of the ever-more-important activity of business-to-business trading. They are used in connection with e-mail communications and they are coming to be more and more used in advertising and marketing. Within just a few years, the use of the Internet has developed into an important part of our everyday lives, important for our ability to gather information about and from public authorities, organisations and corporations, important for being able to inform the general public and consumers, important for the development of electronic commerce and the new economy. A domain name is made up of various parts and usually looks more or less like the domain name of this Committee's home page <domannamnsutredningen.gov.se>, which indicates that it belongs to the Swedish top-level domain .se.

The main task of the Domain Names Committee has been to analyse and investigate the best way of managing domain names under the top-level domain .se. There has proved to be a great consensus in favour of management being structured in such a way as to make the Swedish top-level domain .se a natural abode for everyone connected with Sweden which is also supported by international developments. Several of the international players in a position to influence domain name issues have declared that the national state should have a say in the management of the national top-level domain and that the foremost purpose of the national top-level domains must be to serve users whose activities are connected with the country in question. One important circumstance, underrated hitherto, is the possibility of resolving domain name disputes in a national court in one's own language.

The Committee therefore puts forward proposals aimed at enabling users whose activities are connected with Sweden to obtain domain name registrations under the Swedish top-level domain .se both quickly and appropriately.

The Committee has come to the conclusion that the system existing hitherto does not meet the demands which most people agree should be made on national domain name management, namely that of a natural abode for everyone connected with the country to which the top-level domain belongs. This is mainly because the regulations hitherto linked with the management of the Swedish top-level domain .se do not make possible the achievement of these aims.

Deliberations and proposals on regulatory structure (Chap. 4)

There are two main reasons why the aim of the top-level domain .se becoming a natural abode for all users connected with Sweden is not being achieved under the system in use hitherto.

The main reason is that the regulations limit users' opportunities of getting domain names registered. Among other things, the Swedish system allows only a registered organisation to register a domain name directly under the top-level domain .se (e.g. www.ericsson.se). Under the Swedish system, users other than registered organisations are offered the opportunity of registering their names under what are called a second-level domain (a second-level domain being the part of the domain name that comes immediately before the top-level domain; in the domain name of the Committee's home page .gov is the second-level domain). It has proved that users have a limited interest in registering their domain name under a second-level domain, as witness, for example, the development of the number of domain names registered under the Swedish county second-level domains. The great majority want to be able to register domain names directly under the top-level domain. When denied this possibility by the Swedish system, more and more Swedish users are turning to other domain name systems in the world, with the result that a majority of them today are registered under other top-level domains than Sweden's. The Committee has become convinced that the regulatory structure will have to be fundamentally altered before this development can be reversed and the top-level domain .se made the kind of natural abode for users connected with Sweden.

The Committee therefore recommends that the regulatory structure for domain name registrations be changed to a system of clear and simple rules with no prior assessment. This change will make it possible for players connected with Sweden to register domain name directly under the Swedish top-level domain .se.

This proposal is important for several reasons, not least with a view to stimulating the development of e-commerce and the new economy. Above all, the proposal and the changes it entails are a sine qua non of achieving the aim of Swedish domain name management.

The necessity of introducing transitional rules should be considered, as a means of smoothing the transition to the system proposed by the Committee. To guarantee that those who have registered trademark rights the possibility of using their trademarks as a basis for domain name registration directly under the top-level domain .se the question may arise of permitting these proprietors, for a month or so, to register domain names before other users without registered rights are given

this possibility. In addition, the II Foundation needs to be given reasonable time to adjust to the new conditions.

Deliberations and proposals on the subject of organisation (Chap. 5)

As regards the organisational structure of the Swedish system, several interested parties feel that the organisations existing hitherto have no legitimacy. The guiding principle of the Committee's proposals in this respect has therefore been, against the background of the regulatory changes advocated, to create a "legitimate system" possessing both stability and quality.

The fact of management hitherto in several ways having been of a quasi-official character has not helped to legitimise it. On the contrary, one finds that it is the quasi-official traits which the majority of users have objected to, basically because the regulations have required applications to be examined before registration is granted. Moreover, a refusal can be reviewed and appealed within the framework of the existing private law organisations. The quasi-official impression made by the organisations existing hitherto is further accentuated by the fact of the organisations themselves using a conceptual repertoire which they have borrowed from the realm of public administration. The various private law bodies attending to examination and review and the drafting of new rules style themselves Boards (e.g. the Domain Names Appeals Board and the Domain Name Rules Board). Interested parties the Committee has spoken to have further stated that the perceived lack of legitimacy is aggravated by the fact of neither "Swedish law nor expressed agreement" existing to corroborate the right of the present organisations to manage the Swedish top-level domain.

There is a natural, historical explanation for the present organisation of Swedish domain names management. When domain names began to be registered in the mid-1980s, domain name issues were a topic of limited interest, and so management could be attended to by an individual person who for about ten years dealt with domain name registration to everyone's satisfaction. Rules were gradually evolved as the need arose. In the mid-1990s interest in domain names began to grow, whereupon the management of domain names entered a new phase. Management was taken over by a private law foundation and organised on quasi-official lines. A firmer regulatory structure was adopted and possibilities created for users to have a decision not to register a domain name applied for both reviewed and adjudicated.

All the time, the management of domain names has been adapted to existing needs, and the needs are all the time changing. The use of

domain names today is bound up with great commercial values, and it is becoming more and more important for public bodies, businesses and private individuals to gain access to viable domain names. Therefore, in order to achieve the objectives defined the rules for the registration of domain names and the organisation of domain name management must be once more adapted. As the Committee sees it, the time has now come to enter phase three.

The Committee's proposals are a natural consequence of the development of users' changing needs, and they are also supported by international developments.

Problems directly connected with the regulations hitherto will vanish if the Committee's proposals, e.g. the abolition of prior assessment, are put into effect.

To overcome the problems of legitimacy, the Committee recommends that the task of managing the Swedish domain names system be formalised through an agreement between the Government and the contractor. To minimise disruption of the existing structure, the Committee further recommends that the organisation in charge hitherto, the Internet Infrastructure (II) Foundation, continue to be tasked with the management of the Swedish top-level domain. The foremost difference compared with the present order of things is that management will in future be based on an agreement with the Government as principal.

As a means of further increasing the legitimacy of management, the Committee also recommends that two permanent seats and one alternateship on the Board of Directors of the II Foundation be allotted to representatives appointed by the Government. This will provide opportunities for strengthening the representation of consumer and user interests on the Board.

Other proposals and recommendations (Chap. 6)

One problem to which the Committee's attention has been drawn is the impossibility of using Swedish diacritics (å, ä and ö) in domain names. This is technically feasible, but no common international standard has yet been devised. The Committee therefore recommends the Government, the II Foundation and others involved to work actively for the development of such a standard on the international plane.

The Committee further recommends that the Government lose no time in drafting a common policy for the use of domain names by the public sector. This will enable the general public to seek and find information more easily and rapidly.

The Committee also recommends that the Government, the II Foundation and others involved participate actively in the development of more secure technique for the handling of ”domain name information” (DNS information), and that the II Foundation take the initiative in the field of education and research, in keeping with its own statutes.

Consequences (Chap. 7)

None of the Committee’s proposals will involve any charge on the national budget.

The proposals will make the objectives of domain name management in Sweden attainable. This in turn spells benefits to all users, not least to those who have not had the possibility of registering viable domain names under the top-level domain .se previously. This group includes, for example, small businesses and individual citizens. The development of new enterprise, e.g. in the new economy, will also be facilitated.

From the viewpoint of national governmental agencies, new opportunities will be created for the registration of domain names, added to which, the Committee’s proposals concerning a common policy on domain name use will make it possible to achieve better order. This will present advantages not least to the general public, who will experience less difficulty in finding the information they are looking for. In other words, the creation of a common structure will make it easier for users to intuitively deduce where information is to be found.

To consumers, the Committee’s proposals imply several important benefits. It will be easier for them to find the information they are looking for. The Committee’s proposals will also have the effect of making the Swedish rules of consumer protection application to all activities under the Swedish top-level domain .se addressing consumers. This proposal will open the way to a growth of e-commerce.

Implementation (Chap. 8)

The Committee recommends that the proposals in its report be implemented at the earliest possible opportunity. Thus the work of change should be set in train immediately. Some proposals, however, imply big changes, and it is therefore appropriate that the existing organisations should be allowed a reasonable length of time in which to

adjust to the new conditions, but the Committee proposes that 31st December 2000 be made the deadline for implementing all of its proposals.

1 Background and topics of inquiry

1.1 The development of the Internet

In 1957 – the same year that the Soviet Union launched the Sputnik into space – an American research organisation was set up under the name of Advanced Research Projects Agency, ARPA. One of its purposes was to establish a front-running defence research organisation. Another purpose came to be the development of a computer network enabling different computers to communicate with each other. ARPA collaborated on this development with researchers from RAND (Research and Development) and MIT (Massachusetts Institute of Technology). The idea was to build a resistant network, so that if one computer was knocked out others would be able to take over, replacing the lost capacity. The computer network would also mean the computers connected to it being able to pool their resources. Computer investments were very expensive at this time and the hope of sharing this costly resource was apparently just as decisive for the emergency of the Internet and the notion of being able to build resistant networks.

The first draft version of ”package transport” on networks was published in 1964, and this is when the idea of an Internet can be said to have started to take shape. From the very beginning, the project was impelled by two ideas, namely that all computers (nodes) connected to the network would have the same status and that information would be sent divided up into packages. Developments moved on and in 1969 the first network, dubbed ARPANET, was formed, consisting of four nodes – University of California Los Angeles, Stanford Research Institute, University of California Santa Barbara and University of Utah. The working method on which Internet development has been based ever since was established that same year. The computers connected almost exclusively installed in universities, and researchers there circulated their suggestions for improvement on ”the network”, with a request for comments. These documents came to be known as Request for Comments (RFC) and proved to be a highly efficient

means of capturing competence and moving development forwards. The procedure is the same today, and more than 2,700 RFCs have been sent out on the web for comment by those who are interested.

Initially, then, ARPANET was a small network. One of the problems was that the technology for package transport had not been fully developed. Thus a great deal of the introductory work was devoted to developing new communication protocols. The protocol we are still using today, called TCP/IP (Transmission Control Protocol-/Internet Protocol), was presented in the mid-1970s.

Thanks partly to improved forms of communication, a larger number of nodes could now be connected to the ARPANET. Another important function was that other networks could be connected to the ARPANET. In other words, it was not only computers that were interlinked, but networks as well. The idea of linking networks together is the very foundation of what we in everyday speech call the Internet – a network of networks.

During the second half of the 1970s and the early 1980s, more and more networks were connected to the Internet. The first European network, EUnet (European UNIX network), was connected in 1982, and the first Swedish network, SUNET (Swedish University Network), was connected in 1989/90 as part of the co-operation surrounding the Nordic network NORDUnet.

From the mid-1980s onwards, what had started as a small network developed at a hectic pace. The number of networks connected grew exponentially and with it the number of computers connected. But the real revolution only came at the beginning of the 1990s, when researchers from the Swiss ”Conseil Européen pour la Recherche Nucléaire” (CERN) presented the WWW (World Wide Web) technique. This made possible an easily accessible presentation of all the information existing on the Internet, which meant that the Internet thus came within the reach of users with no special technical competence. WWW is a user-friendly interface based on the various home pages on the Internet being joined together by hypertext links. Users can move from one Internet home page to another by clicking on these links, which is how the great majority of users have become acquainted with the web.

WWW has meant an explosive increase in the number of computers connected. When WWW was first introduced, the number was just over half a million. Today it exceeds 60 million and is increasing all the time.

1.2 How does communication on the Internet work?

Information transmitted between computers on the Internet is divided up into small digital packages. Each package is assigned an address which enables it to find the receiver through the innumerable networks of the Internet. If one part of the network will not let the package through, the package takes another route to the recipient. The point of this system is that packages, whatever route they take, always get through to the right recipient. The different packages do not even have to follow the same route. They find their way to their destination, where the receiving computer puts them together again as a presentable document. As an everyday comparison we can take postal services. If we were not allowed to send more than ten lines of text in one and the same letter, the sender would have to divide long texts into several letters. These would be marked with the recipient's address and then posted. No matter where they were posted or by what route they traversed the country, the letters would eventually arrive and then be assembled into a document. The Internet, in other words, can be likened to a virtual, cross-border postal service with which information packages are sent hither and thither.

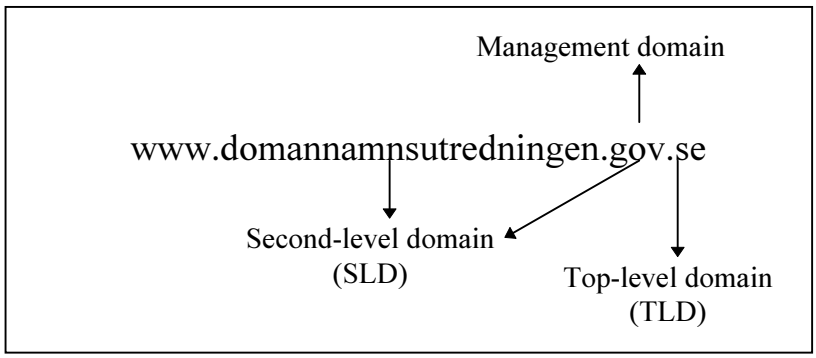
In order for the communication to work, the computers employ different standards. These are usually termed protocols, and the names of the two most basic protocols used for Internet communication are TCP (Transfer Control Protocol) and IP (Internet Protocol). As mentioned earlier, these two protocols are often collectively referred to as TCP/IP. TCP is the protocol which divides the information into packages, while IP is the protocol which ensures that the information gets through to the right recipient. On arrival the packages are received by a computer which, aided by TCP, composes them into a complete message. If someone sends an e-mail to a colleague, the sender's computer, using TCP, will divide the message into packages. These packages will then be given numbers and messages to facilitate fault location. IP then takes over and makes sure that the packages are delivered to the right recipient. At the recipient's end, the packages are received and assembled into a document. At the same time a check is made to ensure there have been no errors. IP, in other words, has the task of carrying the packages. TCP divides the information into packages, puts these together and checks that they are correct.

In order for information to be transmitted in this way between computers, every computer connected has to be allotted a unique address, so that the information will find its place. Just as the post

office requires a recipient address in order for a letter to be delivered, so addresses are needed on the Internet in order for the information to get where it is meant to. The addresses are made up of numeric series allotted to each computer. These numeric series are connected to the above mentioned transport protocol IP, and are thus known as IP addresses. The structure of IP addresses makes them difficult to remember. So, to make the Internet user-friendly, domain names are linked to IP addresses. These names serve as emblems or symbols for the IP addresses. To enable a computer to translate the IP addresses to domain names, there is a TCP/IP service called DNS, short for Domain Name System. DNS keeps track of the different addresses and translates IP addresses into domain names and vice versa.

1.3 Domain names and Internet communication

Domain names are hierarchically constructed and have what is termed a top-level domain (TLD) as their final stage. This is followed by one or more second-level domains (SLD), of which the one immediately below the TLD is usually called the management domain. For example, the domain name <www.domannamnsutredningen.gov.se> belongs to the TLD .se and has the management domain .gov and .domannamns-utredningen, in which the TLD consists of .gov, indicating that the domain comes under the Government.



The point of this hierarchic structure is that the sender of a message, which is to be transmitted, say, from a computer in the USA to a receiving computer in Sweden need not have all the necessary

information from the beginning. Instead information as to the location of the receiving computer is supplied as and when the message passes through various servers on its way (the servers handling domain name information are usually called DNS servers). If the address which is being sought is the home page of the Committee on Domain Name Administration <www.domannamnsutredningen.gov.se>, the search process will be as follows. The domain name ends in .se and so the first reference the sender obtains will be to a DNS server with information about TLDs, in this case .se. When the message reaches the DNS server for the TLD .se, this server knows where the management domain .gov is and can thus indicate the next DNS server for the message to be sent to. That server in turn will identify the receiving server where the Committee's home page is located.

Thus the entire system is based on the different DNS servers indicating the next server in the chain. Uppermost in the hierarchy are a number of "root servers" which handle the first stage, that of pointing out the different servers in charge of the TLDs. The servers handling the DNS of the TLDs in their turn then have to indicate the servers which handle the DNS information of the management domains.

In order, then, for a message to get through, there must be a DNS server which is operational and can pass it on. Thus the system is vulnerable in that it depends on the DNS servers being in working order. One way of enhancing operational dependability and improving communication, therefore, is to ensure that there are several DNS servers on the same level in the hierarchy with copied – mirrored – information. In this way, should any of the servers break down, there will be alternatives which can be used instead. The server from which the information is copied is usually called the mother server or the authoritative server. The servers containing copied information are usually called slave servers or mirror servers. For example, there are about ten mirror servers referring to DNS information for the Swedish TLD .se. The importance of securing access to DNS information will be discussed further in Section 4.4.

One great advantage of the hierarchic system is that none of the servers involved needs to have more information than is needed for passing on a message. Thus the different DNS databases do not need to be very large and unwieldy. In order for everything to work properly, though, the different servers must have correct information about which server is to be indicated. In addition, the person responsible for a DNS server must know whom to contact if any questions arise concerning a domain name. The handling of contact information, therefore, is a central task in a domain names system. It is highly

essential that there should be fixed routines for information gathering, for the avoidance of malfunctions.

One problem today is the relative ease with which a DNS server can be ”redirected” by feeding it with incorrect information. This problem will also be discussed further in Section 4.4. Another problem is that the person responsible for the authoritative root server must redirect it in order for replacement of the person responsible for managing a TLD to be possible. If, for example, responsibility for the management of the Swedish TLD .se were to be moved, a measure of this kind would require the person in charge of the root servers to redirect them. This problem will be discussed further in point 1.7.3, below.

1.4 Various ways of dividing up TLDs

The various TLDs can be divided into national, such as .se, and generic, such as .org (for organisations) and .com (for commercial players). The reason for this division is partly that the Internet to begin with was an American concern. Consequently, no national distinctions were needed. Thus TLDs were generic and originated in the USA. When the Internet grew, the need for increasing the number of TLDs grew with it. The system adopted was for new national TLDs to be introduced in accordance with the standard national abbreviations defined in ISO-3166. Under this standard, Sweden has the TLD .se, Denmark .dk, Norway .no and Finland .fi. There are today upwards of 240 different TLDs in the world. For a full list of generic and national TLDs, the reader is referred to <www.iana.org>.

Another way of dividing up TLDs is by distinguishing between systems with or without prior assessment. In a system with prior assessment, the application is always subjected to some kind of examination before the domain name is registered. Prior assessment often means that the person wishing to register a name must be able to prove some kind of connection with it. For example, it is commonly stipulated that the applicant must be able to prove registration of a corporate name or trademark in order for a name to be registered as a domain name. In a system without prior assessment, the names are not checked before registration is granted. Instead the applicant for a domain name must promise to comply with a number of predefined rules for the TLD concerned. If the domain name proprietor fails to comply with the rules, this can result in the domain name be de-registered. In these systems, control takes the form of subsequent follow-up, and in this way registration can be done more or less

automatically. This arrangement has the advantage of being both quick and inexpensive to the applicant.

Most generic TLDs are administered without prior assessment. But several of the national TLDs are also administered in a similar way. The Danish TLD .dk, for example, is administered without any prior assessment at all. The same goes for the management of domain names in the UK and Italy. For further information about the Danish system, the reader is referred to <www.dkhostmaster.dk and <www.difo.dk>. The management of Sweden's top domain .se is one example of a TLD with prior assessment.

A system with no prior assessment means a simplified registration procedure. One introductory difference between domain name systems with and without prior assessment, therefore, is that most often the systems with no prior assessment have more domain names registered. Thus the number of domain names registered under the Danish TLD is more than twice the number registered under Sweden's. What is more, the number of domain names under the Danish TLD has increased rapidly since prior assessment in the Danish system was abolished, just over two years ago. The number of registrations under the TLD in Denmark continues to rise far more quickly than the number of registrations under the Swedish system. The TLD with most domain names registered is .com, which today has more than 9 million registrations. What is more, this TLD is understood at present to be growing by something like 13,000 new registrations a day.

The rules of registration differ somewhat between the various systems. In systems with prior assessment, as mentioned above, the person wishing to register a domain name often has to have some kind of legal title to that name. The Swedish system, for example, insists on a registered corporate name in order for a domain name to be registered directly under the TLD .se. Another common requirement is that the party wishing to register a domain name which is identical with a trademark must be able to produce a registered right in the trademark. This is the case, for example, in France, where trademarks may be registered as domain names under the special TLD tm.fr. The same rule has now been proposed for the Swedish system and will be introduced in April 2000.

When there are rules connected to a TLD, there must also be somebody who frames the rules and makes sure that they are complied with. In most systems, the task of framing the rules is entrusted to private organisations, but there are cases of systems where the State manages the national TLD on its own – Finland, for example. For further information about the Finnish system, see <www.thk.fi/ruotsi/index.htm>.

1.5 How does the Swedish system work?

As mentioned earlier, the first Swedish network, SUNET, joined up with the Internet towards the end of the 1980s, but Sweden had been connected to the EUnet by a modem link since 1983. That has come about as a result of a private person spontaneously contacting EUnet representatives in Amsterdam and thus being able to send the first e-mail message from Sweden that same year (the message, transmitted on 7th April 1983 at 14.02 hours, can be said to mark the kick-off of Internet development in Sweden). The procedure was complicated. Among other things, modems had to be specially imported in order for communication to be possible.

During the Internet's infancy, several different kinds of address system were used, but in about the mid-1980s more and more users went in for the addresses associated nowadays with the Internet – domain names. To keep abreast of developments, therefore, the same person who had sent the first e-mail message registered the Swedish TLD .se in 1985. Anyone interested in a domain name under the TLD .se, got in touch with that person, who in turn administered all registrations. In 1985 there were only nine domain names registered, but things gathered speed in the mid-1990s and today (1st February 2000) there are more than 80,000 domain names registered under the Swedish TLD .se.

The development occurring in the mid-1990s made it impossible for one person single-handed to deal with all domain name applications. Instead the task of managing the Swedish TLD was transferred to the Internet Infrastructure Foundation (the II Foundation). Parallel to this, the Agency for Administrative Development made a study of the Swedish part of the Internet (Report 1997:18).

The II Foundation is the organisation now tasked with managing the Swedish TLD .se. For the practical business of administering all registrations, the II Foundation has formed a subsidiary, Network Information Center Sweden AB (NIC-SE), which accordingly is the operative administrator.

The rules concerning what can be registered as a domain name under .se already began to be developed at the beginning of the 1990s. Nowadays it is a body called "The Committee for Domain Name Regulations in Sweden" (NDR) which, acting on behalf of the II Foundation, frames new rules for domain name registration under the TLD .se. Members of the "Board" are appointed by the II Foundation after being nominated by the general public, who are able, through the II Foundation's and NDR's home pages, to submit nominations.

The following are some of the main points of the rules applying hitherto:

- A domain name in Sweden (.se) shall refer to an organisation operating permanently in this country. Before a domain is assigned to it, the organisation shall be registered with the Swedish Patent and Registration Office (PRV), the County Administration, a local tax authority or the Financial Supervisory Authority and shall accordingly have been allotted a corporate registration number.
- An organisation can only register one domain name.
- Individual traders, trading partnerships, limited partnerships, tenant-owner housing associations, jointly-owned farms, non-profit associations and foundations are registered under the county-related management domain (corresponding to the county reference letters) where the organisation has its registered office.
- Private persons can only register domain names under the management domain pp.se.
- Goods, services, trademarks, as secondary names or projects cannot be registered as management domains.

The work of framing new rules proceeds in such a way that NDR observes a need of regulatory change and drafts new rules accordingly. This draft is published on the Internet, and everyone finding their way to NDR's home page has an opportunity of commenting on the rules proposed. At the end of the consultation period the viewpoints are collected and NDR then prepares a final draft regulatory amendment for consideration by the II Foundation. After the II Foundation has approved the change, the rules can take effect on a date of the Foundation's choosing.

The principle hitherto has been that no rules may be altered retroactively. This means that all domain names registered under old rules can remain, even if they would not be permitted under new rules. This can lead to a certain amount of confusion when a party wishing to have a domain name is turned down in spite of others having obtained approval for names which are similar.

The work on the latest draft rules will serve to illustrate how the regulatory process works. This draft was prepared over a considerable period by NDR, which successively published different parts of it on its home page to invite comment from the general public. The final draft was presented for comment during the second half of 1999 and a final resolution was adopted by the II Foundation on 24th February 2000, to the effect that the new rules would enter into force on 3rd April 2000.

The new rules, reproduced on the II Foundation's home page <www.iis.a.se> include the following changes, among others:

- In future, trademarks can be registered under the management domain tm.se.
- Registered organisations can now register one domain name per enterprise name.
- Non-profit associations can register domain names under the management domain org.se.

To register a domain name under the TLD .se, the applicant turns to one of the representatives retained by NIC-SE. An end user can never register a domain name with NIC-SE direct. NIC-SE's home page, <www.nic-se.se> contains a list of all the available representatives. In addition to meeting certain technical qualifications, a representative has to deposit SEK 20,000 security with NIC-SE. This money is gradually refunded to the representative as registrations are communicated to NIC-SE.

In cases where an application is not granted, the applicant can have the decision reviewed by NIC-SE through a special body, "the Review Board" (NNO). If the Review Board also turns down the application, this decision can be reviewed by another body, "the Domain Names Appeals Board" (NÖD). These two bodies, NNO and NÖD, only decide on possible errors in connection with the registration of domain names. Conflicts of other kinds, such as a dispute between two proprietors of the same name wishing to have their own names as domain names, are not decided by NNO and NÖD. Disputes of this kind have to be settled by a common court.

It can be added while on this subject that some of the interested parties the Committee has spoken to have remarked that one advantage of a system with prior assessment requiring the applicant to show authorisation for the name applied for is that not many conflicts occur between proprietors of trademarks/names and domain names. The drawbacks remarked on are that a system with prior assessment, coupled with the faculty of review and appeal, comes very close indeed to the decision-making processes of public authorities, for which reason it has been question whether these functions ought to be entrusted to private law bodies. The question of whether domain names management constitutes the exercise of public authority is discussed in Section 1.8. Another drawback to a system with prior assessment is that the registration procedure becomes more complicated and more prodigal of resources.

1.6 How do things work in other countries?

The Swedish system is not unique, least of all in terms of organisational structure. Some countries also have a regulatory structure linked with their system which resembles Sweden's, meaning that domain name applications have to undergo prior assessment. In the EU countries of France, Spain, Portugal and Belgium, and also in Albania, there are regulations making similar demands as those applying in Sweden. Under all these systems, the applicant has to produce a registered title to the name to which the domain name application refers. Most of these systems, moreover, like Sweden's, limit the number of names which a registered company can apply for.

Several countries – Germany and the Netherlands, for example – have organisations resembling Sweden's. The German and Dutch systems, however, have essentially different regulatory provisions. For example, all types of name can be registered under the TLDs in the Netherlands and Germany, so long as the applicant's activity is represented locally. The same goes for the Polish and Czech systems.

There are also several European instances of domain name systems managed without prior assessment. The Baltic countries have systems of this kind. So do the UK, Austria, Italy, Switzerland, Luxembourg, Liechtenstein and Denmark, as well as Hungary and Russia.

Where the Nordic countries are concerned, there are great organisational similarities between the Swedish and Norwegian systems, but the rules in Norway are somewhat differently constructed. In late 1999, a proposal was presented for a change in the rules applying to the Norwegian TLD .no, relaxing the prior assessment requirements in the Norwegian system. When this change enters into force (on a date which has yet to be decided, 17th March 2000), all registered companies will be able to register 15 domain names. Prior assessment will be confined to the introductory stipulation of a company being registered with the Norwegian Patent and Registration Office. The Norwegian organisation comes under the supervision of the Norwegian Telecommunications Administration.

The rules in Finland are very similar to Sweden's, but the Finnish system is differently organised. In Finland's case the domain names system is managed by the State, more specifically by the Telecommunications Administration Centre (TFC). The technical management of DNS for .fi, however, has been contracted to a private company.

The generic TLDs .com, .org and .net are all systems without prior assessment and with a minimum of rules. They make no stipulations, for example, concerning title names or geographic connections.

There are a number of national TLDs which are used in a similar way to the generic ones. In this connection, mention can be made of the popular TLD .nu of the tiny self-governing coral island of Niue, under which there are purportedly about 30,000 Swedish companies, organisations and private persons registered. There are several other national TLDs, apart from .nu, resembling the generic ones. Moldavia's TLD .md and Sao Tomé's .st are two such examples. Both these TLDs are managed partly or wholly by a representative who is not domiciled in the country concerned.

Summing up, we can say that there are several different ways of building up the organisation and regulations for the management of TLDs in the various countries. Insofar as any trends are discernible, more and more domain names systems in the world are relaxing their regulations. This has happened, for example, in Norway, where the requirement of prior assessment is going to be reduced, and in Italy and Hungary, where prior assessment has recently been abolished altogether. Where several of the other at present restrictive TLDs are concerned, discussions are in progress concerning a relaxation of the rules, and there is heavy market pressure for the rules to be made less restrictive.

1.7 Organisations behind the management of TLDs

1.7.1 Introductory remarks on the control of TLDs

Before answering the question of how the management of Sweden's domain names system can best be organised, one has to consider who is really entitled to control a TLD. This, however, has proved to be an impossible question to answer in straight, simple terms. We can start, however, by looking to see who influences domain name questions on the international plain, and then go on to consider who is entitled to decision-making power over a national system.

1.7.2 Important agents on the international plane

1.7.2.1 Internet Corporation for Assigned Names and Numbers (ICANN)

Overarching responsibility for the handling of the world's domain names is vested in the Internet Corporation for Assigned Names and Numbers (ICANN), an international organisation set up in the autumn of 1998 and headquartered in the USA. Domain name questions have become progressively more important in recent years, and ICANN was created partly as a response to this. For further information about ICANN, see <www.icann.org>.

ICANN, then, is a newly-started organisation and there are still many questions concerning its definitive structure which remain to be settled. It is already clear, however, that ICANN is the body which is to be responsible for domain name questions worldwide. This includes questions concerning the national TLDs. ICANN has at its disposal an ample body of precedent indicating among other things that anyone who is to manage a national TLD must have a regional connection and a high level of technical competence. The document in which this is expressed is called RFC 1591. The principles expressed in RFC 1591 have been confirmed by documents adopted subsequently, such as the document (Internet Domain Name System Structure and Delegation, ICP-1 for short) published by ICANN in May 1999. This latter document expresses the principle applying at the time to the delegation of responsibility for the management of the national TLDs. It is to a great extent based on RFC 1591. The foremost requirement to be met by the manager of a national TLD is that the management must be beneficial to the country's citizens. ICP-1 also states that the desires of the government of a country with regard to the national TLD are to be taken very seriously. At present it is being discussed whether new principles are to be worked out, and here again, the principles laid down in RFC 1591 are one of the main points of departure.

Historically, the delegation of responsibility for a national TLD proceeded in such a way that anyone interested in managing the TLD got in touch with ICANN's predecessor, the Internet Assigned Numbers Authority (IANA). The prospective manager of the TLD concerned and IANA then agreed on the forms and IANA made alterations to the domain names system so that everything would be workable. Often these agreements were verbal and without any formal stipulations whatsoever. One illuminating example, already given, of the way in which this could happen is the delegation of responsibility for managing the Swedish TLD. That responsibility was delegated by

IANA to a private person in Sweden in 1985, and the TLD has been managed from Sweden ever since. The agreement was informal and, purportedly, was never put down in writing. Consequently, as far as the Committee has been able to ascertain, the Swedish TLD is being managed without any agreement or formally binding document to substantiate the delegation.

Thus ICANN is able to make decisions affecting the national TLDs, e.g. on questions concerning the task of managing a national TLD. In practice ICANN at present is chary of taking such decisions, one reason being that the nations of the world have begun to take an interest in domain name questions. Several countries have expressed viewpoints to the effect that the national state must obviously be entitled to decide who should be allowed to manage the national TLD. The problem is that responsibility cannot be transferred on its own. As we began by noting, in order for the Internet to work, there has to be a common structure. A transfer of responsibility for handling requires changes to be made in the root servers and at present decisions of this kind can only be made by ICANN.

As far as the Committee has been able to ascertain, it seems unlikely that ICANN would object if a State laid claim to its own country's national TLD. The necessary changes in the root service system with reference to a national TLD would certainly be made if a State so requested.

1.7.2.2 Governmental Advisory Committee (GAC)

At the formation of ICANN, an advisory committee of governmental representatives (GAC) was affiliated to it. At present the GAC comprises representatives of more than 40 countries. All countries in the world are entitled to attend its meetings. The Committee has no formal influence on ICANN's decisions. Hitherto ICANN has been responsive to the demands which the GAC has made. Several of the countries are represented on the GAC advocate greater national influence on decisions relating to national TLDs. One of the GAC's foremost tasks during the introductory phase has been to agree on a draft policy for delegating the task of managing the national TLDs. (That proposal is presented in detail in Chapter 3.) Thus it is not unlikely that ICANN will acknowledge the right of states to make decisions concerning TLDs in their own countries. That question will be addressed at the ICANN meeting on 15th-16th July of this year in Yokohama.

1.7.2.3 The USA

Another important player on the global plane is the US Government, represented by the Department of Commerce (DoC). It is understandable that the American Government should be an important and influential player, considering that the Internet originated in the USA. American authorities were actively involved in its development from the very beginning, and that interest remains alive today. Added to this, the DoC plays a prominent role within the GAC.

It was the US Government, for example, that initiated work for the formation of ICANN. One of the ideas behind the formation of ICANN was a reduction of the American Government's active involvement in Internet administration. Thus, as ICANN develops into an independent body for overarching questions of domain name management at global level, ICANN's responsibilities will be expanded.

The generic TLDs .com, .net and .org are managed by a company, Network Solutions Inc. (NSI), by agreement with the American Government. It is worth mentioning in this connection that the national American TLD .us is also managed through an agreement between the DoC, NSI and a university in California.

1.7.2.4 The European Union

Up till now the EU has been fairly reticent in the global debate on domain names, but lately it has shown more interest. Within the EU, domain name questions are handled by the Information Society Directorate-General, formerly DG XIII.

The Committee's line has been that questions concerning the national TLDs within the Community are to be settled at national level and not in the context of Community co-operation.

From a Swedish point of view it is interesting that several European domain name systems, Sweden's among them, have been reported to the Commission for violations of the Community rules, one reason being that the systems in question do not permit citizens of other Member States to register domain names on the same terms as their own nationals. Having rules which exclude other EU citizens than those of the Member State concerned could amount to an impediment to free movement and thus be incompatible with Community law. This matter, however, has yet to be adjudicated. At the present stage of things it is unclear what position the Commission will take on the complaints.

Another question which may have a bearing on the management of domain names in Sweden is that the EU is actively working for the introduction of a new TLD, .eu.

1.7.3 Important players on the national plane

The question of who is entitled to make decisions about the management of domain names on the national plane is also difficult to give a straightforward answer to. The Committee has noted that more and more States are laying claim to their national TLDs and that support for a State doing so is steadily increasing. As noted above, it also seems likely that ICANN would accept a State laying claim to its national TLD. This has already happened, for example, in the case of the Pitcairn Islands TLD .pn, in a decision made by ICANN/IANA recently (on 11th February 2000). That case concerns re-delegation of the management of the TLD concerned, and the decision underscores the importance of a national TLD being managed for the benefit of citizens in the region to which it refers. This was a rather unusual case, the whole population of the island having jointly expressed a desire for management responsibility to be re-delegated. Furthermore, that request was supported by the island's government and by the United Kingdom, which administers the island's affairs. In addition, the person responsible for the management of .pn had made no efforts to improve Internet communications on the island. So there were several strong arguments in favour of re-delegation.

Actual responsibility for management of domain names in Sweden today rests with the II Foundation, which took over from the person who had originally been responsible in 1985. Arguably, then, the II Foundation is entitled to make decisions concerning the Swedish TLD. At least, it is now undeniably in a position to do so.

Whoever can be deemed entitled to make decisions about the management of the Swedish domain, it is impossible to make any changes to the root service system without ICANN agreeing to the solutions proposed. As we began by mentioning, ICANN is responsible for the root servers and, with the Internet constructed as it is, a re-delegation of the management of a national TLD requires the root servers to be ”redirected”. Only ICANN can do this, and so in this way it can also be said to have decision-making powers over the Swedish TLD.

The Committee has discussed this question with several interested parties, among them representatives of the DoC. Briefly, one finds that no clear and straightforward rules exist. There are guidelines in the

document mentioned above (RFC 1591), but as yet the task of managing the national TLDs is quite informal in character. The DoC is currently working to draft an agreement to be used for stabilising relations between ICANN, representatives of the State and representatives of the prospective manager of the national TLD concerned. An agreement of this kind is intended to dispel the current uncertainty as to who is responsible for what. The GAC, accordingly, has presented a draft version of the possible structure of such an agreement.

In the Committee's opinion, it is desirable that responsibilities should be clarified, whatever the system adopted for actual management. (This question will be further considered in Chapters 3 and 5.)

1.8 Domain names management and the exercise of public authority

Chap. 11, Section 6 of the Constitution Act (RF) provides that an administrative task involving the exercise of public authority may be transferred to a foundation or some other private law agency only where there is statutory authority for doing so. The exercise of public authority is defined as exercise of a power to decide on a benefit, right, obligation or some comparable matter.

The term recurs in the Administrative Procedure Act and is more closely defined in case law. Essentially, the concept of the exercise of public power refers to decisions or other measures which, in the ultimate analysis, are expressions of the powers of society in relation to individuals, both natural and legal persons. The decisions themselves may concern both obligations and benefits. Characteristically, however, the individual, one way or another, is in a position of dependence, and in the majority of cases the decision is made unilaterally by the public authority.

Thus the concept does not include matters decided by an authority concluding an agreement with an individual party, because then the individual is protected by having recourse to a court of law in the event of a dispute with the authority.

If an activity is to be regarded as the exercise of public authority, then, regardless of whether it takes place under the auspices of public or private law, it will have the following consequences, among others:

- As a rule, the Administrative Procedure Act will apply to the activity.

- The rules laid down in Chap. 1, Section 8 of the Secrecy Act, indicating that the rules of the Press Freedom Ordinance on the right of the general public to gain access to public documents are applicable, become operative, because that section also applies to bodies listed in a schedule to the Secrecy Act, the main rule being that activities involving the exercise of public authority under private law are added to the agency mentioned in the schedule.
- Publicity requirements would apply to the activity, e.g. as regards the logging of incoming and outgoing documents.

A domain names system can be constructed in several ways. Under the present Swedish system, the Swedish TLD .se is managed by a private law foundation (the II Foundation). Among other things, this means that the II Foundation, on the basis of rules of its own making decides who can be allowed to register a domain name under the TLD .se. This arrangement emanates from an informal contact between the Foundation's predecessor and an American non-profit organisation in the mid-1980s.

Several of the viewpoints conveyed to the Committee on Domain Name Administration concern the question of whether domain names management is to be regarded as the exercise of public authority. One first precondition for this is for the activity to be conducted by exclusive right. Unquestionably, the registration of domain names under the TLD .se presents a monopoly situation. No party except the II Foundation, acting through NIC-SE, can at present add new registrations to the authoritative DNS server. The question is, however, whether this activity is so exclusive as to be deemed an exclusive right. One can argue that anyone wishing to register a domain name is at liberty to turn to the registration units for other TLDs. It can also be argued that being registered specifically under .se does not have any legal consequences.

Even so, there is no doubt of the consensus view being that domain names management hitherto, where the TLD .se is concerned, has been quasi-official. Viewpoints received by the Committee have, for example, been that the vital rules of domain names registration should be decided by a public authority, not by a private law organisation.

All viewpoints have referred to the fact of the prior assessment which precedes the grant of a domain name registration being very similar to the processing of trademark applications by the Patent and Registration Office.

2 The remit and the working method chosen

2.1 What is to be investigated?

The Committee's terms of reference state that the question of how domain names should be managed within the Swedish part of the Internet is in urgent need of investigation. They go on to specify the following fields for mapping and analysis:

- mapping and evaluating the existing organisation of allocation and registration of domain names, with regard to function, availability and pricing, transparency and questions of responsibility;
- analysing the need for and investigating the possibilities of settlement of disputes concerning domain names assigned;
- investigating the responsibilities of the State, with special emphasis on the question of whether the State shall exercise supervision of the management of domain names and, if so, how that supervision shall be constructed;
- putting forward the legislative proposals occasioned by the inquiry, and
- investigating the need for functions to safeguard the quality of information in the domain names database.

2.2 Working method

The Committee has chosen to work with a small Secretariat. Contacts with experts, specialists in the field, business enterprise, the general public, community representatives and representatives of the organisations managing the Swedish TLD .se have played an important part in the investigation, for the ongoing clarification and acceptance of objectives and proposals.

The Committee commenced its work by circulating a small-scale questionnaire to the organisations which, according to the Committee's introductory assessment, had a great interest in questions relating to the management of domain names in Sweden.

Subsequently the Committee carried out a major questionnaire survey of all enterprises which at 1st December 1999 were representatives of NIC-SE.

In addition, the Committee carried out a minor questionnaire survey of a sample of interested parties, mainly comprising trade organisations and national authorities.

Throughout the inquiry, national authorities and business enterprises have been contacted in order to discuss the Committee's conclusions and to gain understanding and acceptance of its proposals. Those contacted have, for example, included representatives of the organisations managing the Swedish domain names system, representatives of PTS and PRV and the IT Commission.

Special communication has taken place with the Trademarks Committee.

Part of the Committee's work has involved maintaining an active home page on the Internet. This home page has been active insofar as interested parties have been able by this means to communicate viewpoints to the Committee. In addition, the Committee's questionnaire surveys have been published on the home page, with an appeal for viewpoints from all interested parties, and the home page has also included a special forum in which those interested have been able to present and express their points of view.

The home page has also given the Committee an opportunity of publishing material of importance for giving interested parties an opportunity of following the progress of the inquiry. Documentation has been published on the home page throughout the course of the Committee's deliberations.

The Committee has received many viewpoints as a result of the information published on the home page.

The Committee has engaged consultants in the following fields:

- A technical description of the domain names system.
- A deeper analysis of foundations as an organisational structure.

2.3 Limitations

In the course of its work the Committee has observed that the problems proving central to the function and management of the Swedish TLD .se are to a great extent connected with questions concerning the rules which will apply to domain name registrations. The Committee has therefore chosen to address and discuss the regulations in a separate chapter.

The Committee has observed that there are rival TLDs connected with Sweden, but it has chosen to concentrate the inquiry on questions relating to the management of the national TLD .se

3 The latest international development

3.1 Developments within GAC

3.1.1 Proposed formalised delegation

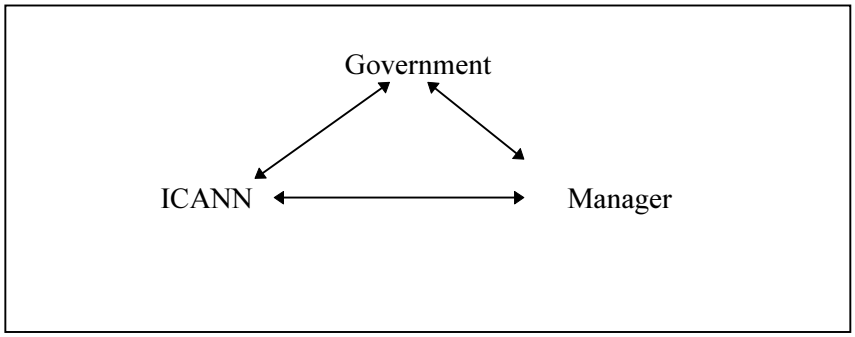
As mentioned in the introduction, GAC has put forward a proposal as to how responsibilities relating to the national TLDs can be formalised. The proposal takes as its starting point the development of Internet use in recent years. GAC notes that use of the Internet has now come to include everything from commercial activities to education and communication. When RFC 1591 was presented in March 1994, use was mainly confined to universities and research environments. Rapid development has now made it necessary for the delegation of the national TLDs to proceed in a more formalised manner.

However, the underlying principles of RFC 1591 still apply. Whoever is to handle a national TLD has the task of serving citizens in the region where he is active. Furthermore, whoever is tasked with management has a responsibility towards the international organisations governing development of domain name management.

With this background in mind, GAC has drafted a proposal whereby delegation of the task of managing the national TLDs is ultimately to be a matter for the national government or the authority appointed by the Government (referred to below as ”the Government”). The idea is for stability to be guaranteed by the Government signing an agreement for the management of the national TLD with the manager. In this connection, a manager is the party to whom the government entrusts the management of domain names. In the Swedish system hitherto, this task has been given to the II Foundation, originally after delegation from IANA. An agreement is also signed between the manager and ICANN, guaranteeing that the national TLD will be managed in a way which is acceptable to the international community. The Government

shall then inform ICANN of the way in which the relationship between the State and the manager is regulated.

Summing up, then, the following three agreements are signed:



Through this structure a stable, legitimate foundation is created between those who can be deemed responsible for the way in which the national TLD is to be managed. The contractual arrangement means that no party can alter the underlying conditions unilaterally.

3.1.2 What shall the agreements contain?

3.1.2.1 The role of the manager

GAC's proposal specifies the role which the different parties to agreements are to have. The manager shall be responsible for the national TLD being managed in the best interests of the general public. For these purposes, the general public comprises citizens in the relevant region. For a national TLD this means in principle that the manager shall manage the national TLD in the citizens' best interests. Furthermore, the administration and marketing of the national TLD shall be segregated from regulatory activity. Furthermore, the manager shall acknowledge that the overarching responsibility for the national TLD devolves on the Government, and shall act in consensus with the Government.

The manager shall reside in the country to which the TLD refers. The manager shall also concede that the national TLD does not give rise to any intellectual rights on the manager's part.

3.1.2.2 The role of the Government

With the model proposed, overarching responsibility devolves on the Government, which, as representing the interests of citizens, shall see to it that management is conducted in a way which is beneficial to the general public. In addition, the Government shall ensure that management is not discriminatory, complies with current laws and regulations and respects personal privacy and the special protective interests of consumers. The Government shall also see to it that the manager has a high level of service with reasonable pricing and that international laws and conventions are complied with.

The Government shall also ensure that management is efficiently conducted and that there is good competition in the system. When the manager is appointed, the Government shall bear in mind the importance of long-term stability in the domain names system. Moreover, an organisation rather than an individual person shall be appointed as manager.

3.1.2.3 The role of ICANN

ICANN is the international organisation which will become a party to the agreement with the Government and the manager. ICANN's main function is that of monitoring technical stability. Among other things, this includes administering the root-server system and developing rules of delegation. In addition, ICANN has the important task of framing and developing technical standards for Internet communication.

3.1.3 Principles of delegation

Responsibility for the management of a national TLD may only be delegated in consultation with the Government. If the manager is found to default on his side of the agreement, responsibility can be delegated to another manager. This is done after the Government has notified ICANN of its desire to re-delegate the task of managing the national TLD. ICANN shall act promptly in accordance with the Government's wishes.

To ensure the possibility of quickly changing managers in connection with the agreement on the management of the national TLD not being complied with, there should always be a DNS server with mirrored information which is outside the manager's control.

The manager in turn shall be guaranteed rights under the laws of the country where the activity is carried on. Furthermore, the manager shall be protected against discrimination in connection with a delegation.

3.1.4 Principles of communication between the parties

The Government shall provide ICANN with information on the way in which relations between the State and the manager are regulated. Furthermore, ICANN shall be informed as to how the Government shall ensure that the agreement with the manager is complied with, and the parties shall acknowledge ICANN's right of creating new TLDs which do not encroach on the national ones.

The agreement between the Government and the manager shall contain an undertaking by the manager to promote the interests of citizens. It should also make clear that the manager acknowledges the Government's overarching responsibility for the good management of the national TLD. In addition, it shall be clear that the manager is aware of being subject to national laws and regulations applying in the country to which the TLD belongs. Furthermore, a procedure shall be specified for resolving any conflict relating to domain names registered under the TLD in question. It should also be made clear that the manager consents to provide the Government with DNS information and that the manager does not have any intellectual property rights in the national TLD. Lastly it shall be made clear that the manager realises that management of the national TLD is not a right but a non-profit assignment.

ICANN, in relation to the manager, shall see to it that stable, secure access to DNS information concerning the national top level domain is provided through an open authoritative database. ICANN shall also ensure that the information coming from the authoritative database is reliable and that the root server of the national TLD is managed in a stable, secure manner. ICANN shall also inform the manager regularly of any changes regarding ICANN's contact information. The manager in turn shall provide ICANN with information concerning changes of contact information and shall guarantee that the DNS management is carried on in a stable, secure manner. Furthermore, the manager shall guarantee ICANN a high level of security with a declared plan for a way in which information in DNS is copied and protected. Plans for the copying and protection of DNS information shall be approved by the Government. The manager shall not have sole control of the information reflected.

3.2 Developments in the USA

As mentioned by way of introduction, the Federal Administration advocates a contractual relationship between ICANN, the national state and the national domain names manager/manager for the handling of domain names. During talks between the Committee and representatives of the Department of Commerce (DoC), which drafts domain names questions for the Federal Administration, it has also emerged that the model advocate by DoC is very similar to that which has been proposed by GAC. The Committee has good grounds for its belief that an immediate Swedish initiative in this field would be in line with the developments which the DoC would like to see.

As regards the American national TLD. us, the Committee, following talks with representatives of the DoC, comes to the conclusion that the DoC is not satisfied with the development of this TLD. The problems emanate from a complicated regulatory structure with associated prior assessment. The rules have the effect of placing all domain name registrations under .us under TLDs for each state. Further subdivisions take place at the state level, depending on the city where the applicant is active. Due to the complexity of the regulation, the TLD .us has not been much of a success. As far as the Committee has been able to understand, the DoC wishes to change this, and so it does not seem unlikely that the assignment of managing the American TLD .us will also become a subject of change.

3.3 Developments within the European Union

The EU is a legal system based on the Member States complying with the common rules adopted. The attitude within the EU is that decisions concerning the national TLDs of the various Member States are made by those States themselves. Needless to say, the making of decisions by the Member States themselves presupposes that they are framed in such a way that they cannot be deemed to come into conflict with Community law. Formalising the allegation of responsibilities with regard to the handling of the national TLD as proposed by GAC it is unlikely, however, to mean that they are contrary to Community law. Besides, the EU has an observer post with GAC and thus can be said to be well aware of GAC's proposal and its implementation.

The framing of the rules is a different matter altogether. As was mentioned by way of introduction, a complaint has already been filed

with the Committee concerning the Swedish regulatory structure hitherto, and among other things the rules stipulating abode in Sweden as a condition for domain name registration being granted is now under review. Without anticipating the Commission assessment as to whether this constitutes an impediment to free movement, the Committee can note that in the framing of future regulations it must go without saying that proposals are to be reviewed in relation to current rules and principles within the Community.

Even if there do not exist any express initiatives in the domain names sector, there has for some time now been a strong determination within the EU for Europe to catch up on the USA as regards Internet use, both in connection with electronic commerce and in connection with entrepreneurial start-ups. This is expressed, for example, in the Commission's report prior to the European Council meeting in Lisbon on 23rd-24th March. When designing the national domain name systems of the Member States, therefore, attention should be paid to the importance of stimulating the development of electronic commerce and Internet enterprise. A system which does not take these effects into account will come into conflict with these aspirations.

4 Deliberations and proposals concerning the regulatory structure

4.1 Points of departure

4.1.1 Criticism of the regulatory structure

During its work on this report, the Committee has been in contact with a large number of interested parties. Several of these have expressed criticism of the domain names system in Sweden hitherto. The Committee has noted that the main target of criticism has been the regulatory structure, not the organisation. Many interests have queried why the rules have been framed in such a way as to restrict the users' possibilities of registering domain names. Other commonly expressed viewpoints have been that the existing management resembles the exercise of public authority and that, accordingly, the system ought not to be managed by private law organisations. As stated in Section 1.8, the Committee finds that in most cases the regulatory structure is the reason for management assuming a quasi-official character. It is on account of the rules that applications have to be subjected to prior assessment, which in turn means that applications can be reviewed and appealed. When the concept of exercise of official power is analysed, it is primarily the elements of examining applications from private individuals which cause management to resemble the exercise of public authority.

The Committee has therefore chosen to address the regulatory structure first, before going on to deal with the question of how to create the best organisational structure. The latter question is dealt with separately, in Chapter 5.

4.1.2 The aims of Swedish domain names management

Sweden occupies a prominent role in the world where IT use is concerned. It is also the declared intention of the Swedish Riksdag (parliament) and Government to maintain and advance those positions. In its Budget Bill for 2000, the Government writes that where IT development is concerned, it is the responsibility of the State to ensure that good opportunities exist for the development of IT and their obstacles impeding or delaying development be removed. It goes on to say that e-commerce should be stimulated and rules impeding the development of the digital society shall be removed. The intention of strengthening Sweden's position as an IT nation is also evident, for example, from the assignment given to the national authority Invest in Sweden Agency (ISA) to facilitate the establishment of foreign enterprises in Sweden.

The Committee's terms of reference also affirm that the efficient management of domain names under the TLD .se is a matter of public interest. It is arguable per se that domain names are merely technical addresses which do not really have any great value. In some of the viewpoints communicated to the Committee, this has been put forward as argument that the management of domain names can be left without any form of State involvement. This standpoint, however, is not represented by a majority of those with whom the Committee has had the opportunity of communicating. Instead the majority agree that the question of how domain names are to be administered is a very important one. It affects many people, organisations and enterprises and is playing an ever more important role for the possibilities of being seen on the Internet. Thus there is widespread agreement that the domain names question is a matter of major public interest and that the management of domain names has a bearing on IT development.

It is also clear that access to domain names is important, perhaps even decisive, for a company's possibilities of conducting trade or some other activity on the Internet. When new players wish to establish activities on the Internet, the question of which domain name is to be used is one of the first which have to be answered before the activity can be planned any further. The new economy calls for new approaches, not least in the IT sector. For the encouragement of enterprise and growth in Sweden, it is important and urgently necessary that new enterprises should be able to register domain names under the national TLD .se.

When, therefore, the Swedish domain names system is to be developed, one important aspect must be to ensure that this will not

stand in the way of IT development and the emergency of the new economy. If the domain names system can be designed in a manner which moves development forward, this, of course, will be better still.

Thus there is no doubt that Sweden is a successful IT nation and that there is a determination on the part of Riksdag and Government for this to remain so. It should also be clear that Sweden as an IT nation should have efficient management of the national TLD and a system constructed in a way which makes it possible to accommodate all of the many actual and prospective users.

The statutes of the II Foundation, moreover, make it clear that the II Foundation shares this overarching objective. Thus:

> ”To promote good stability in the infrastructure for the Internet in Sweden and to promote research, education and teaching in data and telecommunication, with special focus on the Internet. …the Foundation shall in Particular promote the development of domain names management under the TLD ‘se’ and other national domains referring to Sweden.”

In addition, the II Foundation has the vision of the TLD .se being developed into a natural abode for all users connected with Sweden. This is apparent, for example, from the preamble to the II Foundation’s latest draft rules, part of which read:

> ”The national TLD .se shall be the natural abode for all users connected with Sweden. This shall be achieved without future technical progress or the appearance of new services being jeopardised or impeded. The domain shall be characterised by stability and security, at the same time as its administration shall be swift, flexible, predictable and unbureaucratic.”

The principle that the overarching objective of the national TLDs should be to provide a natural abode for everyone connected with country in question is also supported by the GAC proposal, which expressly states that the national TLDs are to cater to the needs of users in the region to which the top domain refers.

It is also important for communication on the Internet that domain names for all users should be available under the Swedish TLD .se. The Democracy Commission, in a report submitted recently (SOU 2000:1), points to the importance of making IT available to all. Making it possible for all users in Sweden to obtain a domain name under the TLD .se could be termed a way of improving availability.

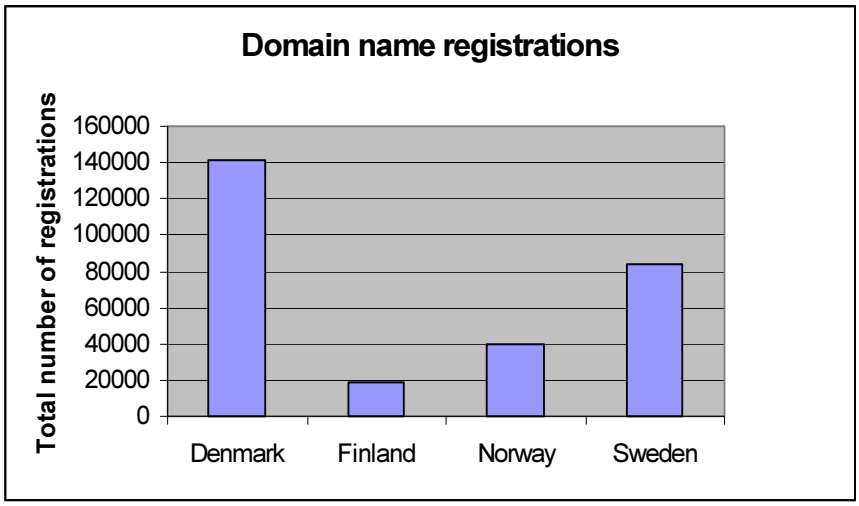
The Committee is therefore of the opinion that it is vital for the Swedish domain names system to be developed in such a way that the Swedish TLD .se will become a natural abode for all users connected with Sweden. As has already been made clear, this opinion is very widely endorsed. It is shared, for example, by a large majority of the interests which the Committee has been in touch with.

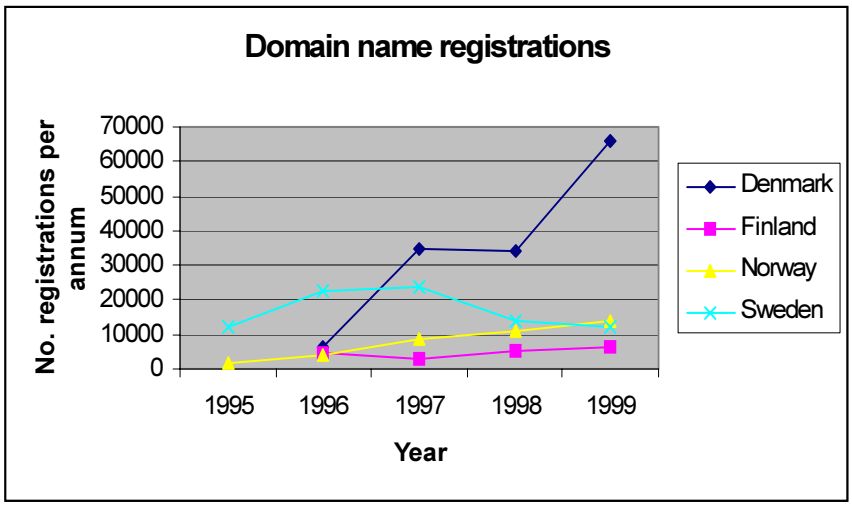
There is, in other words, great unanimity as to what must be achieved. The aim is to facilitate activities connected with Sweden and to create a possibility for all these users to register domain names under the Swedish TLD .se. The question, then, is whether this can be achieved within the present system and, if it cannot, what may be the appropriate course of action.

4.1.3 Are the objectives provided for in the system existing hitherto?

One suitable point of departure for judging whether the needs of users connected with Sweden are provided for in the existing system is to investigate the development of domain name registrations.

Compared with the neighbouring Nordic countries, Sweden has fewer registrations than Denmark but more than Norway and Finland. Taking into account the difference regarding Sweden's economy and population, the number of registrations compared with Denmark becomes remarkable.





Perhaps the most disturbing point is that the graph for the number of new registrations per annum on .se is declining, while in all the other countries it is increasing, and especially in the Danish domain .dk. One is naturally moved to ask what is the reason. Conceivably, demand is already provided for in Sweden and everyone already desiring a domain name has been registered. But this is not the case. Instead the great majority of users in Sweden are registering their domain names under other TLD names instead of Sweden's .se. Above all this applies to the generic TLD .com, but the national TLD .nu has also proved to be very popular. Clearly, then, many of the users who have a natural connection with Sweden are not to be found under the national TLD .se.

As regards statistical data concerning the number of domain name registrations in various TLDs, exact and comparable figures have proved hard to come by. Thus the Committee has to a great extent had to make do with estimates, but even conservative estimates yield striking results. Nearly two-thirds of all Swedish users are registered under TLDs other than Sweden's, and this proportion is increasing. Of course, the management of domain names is not to be viewed as a competition to see which system has most names registered. But these figures are of the utmost importance for deciding whether the above stated aims for the management of Sweden's TLD .se are being achieved.

In this connection it is worth mentioning that the TLD .nu has within a short time approached the numbers registered with NIC-SE. According to certain calculations, the number of registrations under the

TLD .nu actually exceeds the number of .se, e.g. according to calculations performed by the enterprise DomainStats.com, in which .nu has 80,000 active users as against 39,000 for .se. The dramatic difference between these figures and those given in the table above is due to the method used for collecting data. DomainStats.com takes as the starting point for its surveys the number of domain names which are technically operational, whereas the figures presented in the table show how many domain names have actually been registered. The big difference between these figures underlines the importance of using statistical data carefully. Even so, this information from DomainStats.com is a clear pointer to developments in different domain name systems.

Thus the Committee comes to the conclusion that the aims of the management of Sweden's TLD .se are not being accommodated within the existing regulatory structure. There are a large number of users connected with Sweden who cannot register their domain name under .se and are therefore thrown back on other alternatives.

4.1.4 Are the objectives of the II Foundation's new regulations being achieved?

The rules, stated in Section 1.5, for the registration of domain names under the TLD .se make heavy demands on anyone wishing to register a domain name. What is more, the rules mean that many users are unable to register domain names at all. This problem has been observed and for more than a year now an extensive revision of the rules has been in progress. The process of change has resulted in a new set of rules, version 2.0, which enters into force on 3rd April this year (see further <www.iis.a.se>. The new rules imply changes with regard to the possibilities of users registering domain names. Among other things, it will be possible to register a trademark under the special TLD .tm.se. Another change under the new system will be a possibility of firms registering more than one name, since under the new rules it will be possible to register one name for every branch of activity, as opposed to the previous rule stipulating one name per organisation.

The rules have the effect of increasing the possibilities of users registering domain names under .se. But the new rules imply continued prior assessment, and in certain cases, moreover, an enlarged prior assessment, since trademark registrations also have to be examined. Furthermore, the new rules mean that the majority of users will be referred to secondary-level domains (SLDs) instead of registrations directly under the TLD. It makes perhaps little difference to a private

person what the domain name looks like, but to those wishing to carry on business over the Internet, the importance of the domain name directly under the TLD is obvious. The interested parties questioned by the Committee have replied unhesitatingly that the great majority of users opt for other TLDs instead of the Swedish one if they are unable to obtain registration directly under the TLD. Even if some will no doubt accept a position under an SLD, it is clear that many will continue to turn to other TLDs – generic or national – instead of .se in order to register domain names with activities connected to Sweden.

Experience of other domain name systems which also use SLDs shows, moreover, that these do not usually become very popular. France has an SLD tm.fr but the Committee has been given to understand that the number of registrations under this domain is extremely limited. The same problem also occurs with regard to the American TLD .us, which has a large number of SLDs but a very limited number of registrations in relation to the US population and the widespread use of the Internet. Furthermore, experience of existing Swedish SLDs, pp.se for private persons and county domains for small firms and organisations, shows that it is difficult to attract users to them.

There are, admittedly, management domain systems which have proved workable – the British, for example. In that system, however, the SLDs have existed right from the start, which means that the users do not have to compete with those existing directly beneath the TLDs. In a system where some were able to register domain names directly at the top domain, being registered under an SLD becomes less attractive, added to which, a system in which domain names are registered both under the TLD and under several different SLDs is not easily explained to the users. A consumer looking for a particular firm or product cannot track it down without an extensive knowledge of the system if the domain name he is looking for can be represented directly under the TLD .se or under one of the SLDs.

In practice it is probably impossible today to ”educate” Swedish users and teach them to remember the different SLDs and the types of phenomena represented under them. The question is whether it is not more reasonable to try to adapt the regulations to users’ needs instead of the other way round.

What is more, the new Swedish regulations amount to a continuing obstruction to several important user groups. The rule on trademarks, for example, allows only registered trademarks to be used as a basis of domain name registration. This way, somebody who has an established a common law trademark or has applied for trademark registration but not yet obtained any cannot get a domain name registered. Further-

more, individual traders whose business names are not registered with PRV (the Swedish Patent and Registration Office) or have not been assigned a corporate registration number by some other Swedish authority will still have to make do with being represented under the management domain of the county where the business operation has its head office. Private persons will have to go on registering domain names under the management domain pp.se and non-profit associations will have to register domain names under the management domain org.se.

One consequence of these regulations, then, is that many new small entrepreneurs with creative ideas have no reasonable chance of registering domain names for their entrepreneurial activity, because first the ideas will have to be translated into a registered trademark or a company name. With these rules, one cannot exclude the possibility of a heavier load on PRV resulting as more and more people find themselves needing to register firms and trademarks. Moreover, those in a position to do so will probably try to register their trademark ideas as company names, as a means of getting fast-track treatment from PRV. A system of this kind favours those who have money and possibilities. Small firms and individual persons without much capital but with good ideas will thus come off second best. Another consequence of this is the expenditure of time and money entailed for both users and PRV.

The Committee has also observed that a growing number of Swedish national authorities, folk high schools etc. are registering their domain names under national TLDs which are open to them and not under the Swedish TLD .se, the reason being that the strict regulations surrounding .se do not permit registration under .se. The new regulations will not being any improvement in this respect.

Summing up, the new rules of the II Foundation can be said to present a wider opportunity, above all where existing businesses are concerned, of registering domain names under the Swedish TLD .se. It has also been pointed out that there may be reason to relax the rules successively, because in principle restrictions, once removed, can be reintroduced. The Committee can therefore understand why the II Foundation has chosen to make haste slowly. But it is already clear that the new rules will not lead to the achievement of the predefined objective, namely that the of the Swedish TLD becoming a natural abode for everyone having a connection with Sweden.

4.2 No prior assessment but clear, simple rules

Talks with interested parties and contacts with representatives of II Foundation have made it clear to the Committee that the main reason for so few domain names being registered in Sweden is the restrictive regulations which among other things require anyone wishing to register a domain name directly under the TLD .se to produce a registered company name. In other cases the applicant is referred to various SLDs. Another problem is that the existing regulatory structure requires all domain name applications to undergo prior assessment.

In order, therefore, to create a domain names system capable of achieving the objective initially stated in this chapter, the Committee recommends that the rules for registration of domain names under the TLD .se be altered from the present system to a system of clear, simple rules with no prior assessment. In this way development will be stimulated and it will become possible for all users whose activity is connected with Sweden to register a domain name directly under the TLD .se. At the same time information retrievable will be made easier for citizens and consumers.

Everyone wishing to register a domain name under the TLD .se shall thus be given an opportunity of doing so, insofar as the name of the name applied for is vacant. Registration shall take place without any prior assessment being made. The party registering a domain name will have to accept that registrations under the Swedish TLD .se are made on certain carefully defined conditions of agreement. These conditions must be few and simple but at the same time guarantee that those registering domain names under the Swedish TLD .se are in earnest and comply with the laws and regulations applying in this country.

The Committee recommends a stipulation that at least the following basic conditions be included in the registration agreement and accepted by the party wishing to register domain names under the Swedish TLD .se.

In order to get a domain name registered under the TLD .se, the applicant

- must reside in Sweden or have an activity connected with Sweden,
- accept that Swedish laws and rules apply and that Swedish courts are competent to try disputes relating to the domain name in question.

The requirement of compliance with Swedish laws and rules should also be specified on certain points. Thus a person having a domain name registered under the TLD .se shall also

- comply with the rules of consumer protection applying in this country,
- accept that the domain name may not infringe any other party's trademark or trade name valid in Sweden,
- undertake not to use the domain name in such a way that it conflicts with Swedish rules concerning pornography, racial incitement or discrimination or can otherwise be perceived as manifestly repugnant.

In addition, guidelines are needed on the technical construction of the domain name itself. There may also be cause to reserve a few geographic designations and important names. Added to this, certain names should be excluded from the possibility of registration as domain names, in the same way as certain combinations of letters are excluded from the possibility of becoming vehicle registration numbers.

It may also be appropriate to introduce a stipulation to the effect that those registering domain names under the TLD .se must use them. A stipulation of use is aimed at preventing domain names from being registered for resale and also at guaranteeing that good names which are not used can be recycled and made eligible for re-registration. Several domain name systems already apply rules concerning the stipulation of use. In Norway, for example, continuance of registration is conditional on a registered domain name being used. ”Use” in the Norwegian system means that the domain name is technically operative, i.e. that a server applies when the actual domain name is called.

In the proposed system, it is important that the II Foundation lose no time in devising routines for weeding out domain names which are not being used. Weeding should take place as soon as a domain name is discovered which is not being used, after the person responsible for the domain name concerned has been allowed reasonable time in which to make it operative. It is part of the user's responsibility to ensure that he can be contacted at the addresses which he has given. It should be noted in this connection that NIC-SE, under its general conditions, is already able to de-register a domain name if the contact information does not tally. The same applies in cases where the annual charge is not paid.

Summing up, the system proposed here, whereby the applicant promises in an agreement to comply with certain predefined, clear and simple rules, means, as always where contractual relations are

involved, that cancellation and, in this case, de-registration may come into question if the agreement is not complied with.

4.3 Need for a transitional period

When introducing the system, advocated by the Committee, without prior assessment, it may be necessary to consider also introducing transitional rules.

To guarantee those who have registered rights in trademarks and trade names the possibility of using them as a basis for a domain name registration directly under the TLD .se, these proprietors should be allowed, for a transitional period, to register domain names before other users without registered rights are given this possibility.

In domain name systems with no prior assessment, domain names can be transferred and sold. If, therefore, prior assessment is abolished in the Swedish system, names with a special meaning would in all probability be registered with a view to reselling them later. The possibility of selling domain names indicates the importance of a good domain name and constitutes a supportive argument for the Committee's proposal.

Some of the interests with which the Committee has spoken, however, are of the opinion that trade in domain names is not entirely beneficial to the development of the Internet, and they have therefore expressed desires for the II Foundation itself, during a transitional period, to put specially attractive names of a generic nature, such as bil.se (cars), cd.se (cds) and mat.se (food), up for auction. With a procedure of this kind, the names would go to persons really intending to use them in their business activity, at the same time as the proceeds would prove to the II Foundation and, accordingly, Internet development in Sweden. There are, however, no guarantees of such a procedure creating justice, added to which, the Committee believes difficulties to be inevitable. What is more, the Committee finds that the stipulation of use which it recommends for the new system will make it more difficult to accumulate names. In cases where it is obvious that a domain name is being registered solely with a view to resale and where the domain name is not actually used, de-registration may thus come into question.

4.4 How is operational dependability guaranteed?

4.4.1 Operational dependability in the domain names system

One of the most important questions for Internet development in Sweden is how a high level of operational dependability can be guaranteed in the Swedish domain names system. Nearly all interested parties with which the Committee has been in touch refer to this as one of the most important questions and have underscored the importance of security aspects being taken into account in all the Committee's proposals.

Operational dependability can be discussed on several levels, and the Committee has chosen to address the question in terms of three areas, namely domain name management, access to DNS information and protection of DNS information.

Domain name management

As stated earlier, the existing Swedish system is characterised by a high standard of operational dependability in its management. Important factors involved in the assessment of operational dependability on the existence of firm, clear routines for gathering information as to which persons are responsible for a registered domain name and which servers are supposed to keep the name in question operational. As mentioned in the introductory chapter, one of the preconditions of the DNS system being workable is the accuracy of the information which it contains. When a question is sent to a DNS database, the information in that database concerning the location of the receiving computer must be correct, otherwise the answer will be wrong whatever the technical functionality. This makes it very important that persons registering domain names should furnish correct information and that there should be routines for following up changes. If a user changes operators, for example, this must be reported so that the changes can be introduced in the DNS database.

The Committee finds that NIC-SE has good routines for responding to this need. It is also of the opinion that there are good prospects of continuing high security in this area without any further alterations, and that the existing organisations have the resources of both technology and manpower to meet the demands which the proposed system will entail.

Access to DNS information

The security of the DNS system also hinges on the number of DNS mirror databases. If the DNS information in the Swedish system were to be gathered in one database and only be available in one server, the entire system would come to a standstill if that one computer went down. To enhance operational dependability, therefore, the DNS information needs to be mirrored in other databases, so as to spread the risks of a failure. A system with many mirror servers has good security or, as the term goes, high redundancy.

The present-day Swedish system has more than ten mirror servers in various places in Sweden and the rest of the world. The Committee is of the opinion that the redundancy of the Swedish system is very good.

In the course of the inquiry viewpoints have been received to the effect that there should be additional mirror servers and that at least one of them should be controlled by the State. This will ensure that the very important information obtained in the DNS servers will always be made available, regardless of the actions of the organisations responsible for management. As shown in Chapter 3, this standpoint is endorsed by the GAC's proposals. The question will be considered further in Chapter 5.

Protection of DNS information

As mentioned in the introduction, the DNS system is a distributive database constructed in such a way that each individual can manage his or her own part of it. This local administration facilitates the task of keeping the database updated. Up till now, however, there has been nothing in DNS to verify who has entered what information, and so it is easy to "fib" – that is, to enter false information and, for example, assume a false identity. False DNS information opens up opportunities of "stealing" someone else's information (e-mail, for example) and disrupting transactions (e-commerce, invoices etc.).

These problems have been noted and techniques now exist for handling DNS information far more securely with the aid of Secure DNS (DNSSEC).

DNSSEC is based on DNS information being encrypted and on "keys" having to be used in order to add information in a DNS server. Asymmetric encryption is the technique used, and it employs check-sums. These are numbers obtained by applying a mathematical algorithm to a certain quantity of information. The algorithm is designed in such a way that the slightest change in the information

leads to a change in the checksum. If the ”honest” DNS server works out the checksum for all its DNS items and then encrypts the checksums one by one, at the same time adding the encrypted checksum to each item when it applies to DNS questions, the enquirer can calculate a checksum of his own for the DNS item and compare his own checksum with the one enclosed. If these checksums are identical, one can be certain that the information has not been distorted in transit and that it really comes from the right ”sender”.

The Committee is of the opinion that work to facilitate the secure handling of DNS information which DNSSEC entails is of the greatest importance. Special recommendations on DNSSEC are put forward in Chapter 6.

4.4.2 Will operational dependability be affected by the abolition of prior assessment?

During the inquiry a long succession of viewpoints have been tendered on the subject of operational dependability in a system with no prior assessment. Many people have warned against creating large DNA databases, which may result from abolition of prior assessment in the Swedish system. During the initial phase of the inquiry, it was said that it would be impossible to create a DNS database with the same high level of technical efficiency as before if there were to be more than a million domain names directly under the TLD. Capacity, however, has proved to be far greater than that. For example, the generic TLD .com has more than nine million domain names registered directly under the TLD, and technically it works well. The only real consequence of a larger database is that, with the technology being used today, transmission times to the mirror servers grow longer. In the case of DNS information for .com, transmissions at present take roughly four hours. Thus the danger with a large database is that, with present-day technology, some hours will pass before a registered domain name has been entered in all mirror servers. Against this must be balanced the fact that, in a system of prior assessment, it usually takes several weeks to get a domain name registered at all.

How the person handling the system is to adapt his activity to a substantially greater number of users is an entirely different question. All information handling and all changes, for example, in contact information will become more time-consuming if the number of domain names increases. This, however, is a passing problem and exclusively one of adapting resources of technology and personnel to the new demands entailed by a system with no prior assessment. The

Committee concludes that NIC-SE has good possibilities of adapting its activities to the new requirements and, accordingly, does not see this as an objection to abolishing prior assessment.

4.5 How are conflicts concerning trademarks and trade names to be handled?

4.5.1 Competition for the same name

As mentioned by way of introduction, the domain names system is based on each Internet user having a unique address. Every domain name, in other words, has to be unique. At the same time, it is possible for identical trademarks and trade names to be registered by different users. Trademarks, for example, can be registered for different groups of products without this implying any risk of confusion between the products. The trademark WASA is both as a name for both insurance and crispbread, the Renault trademark applies both to cognac and motor vehicles, and so on. The fact of all domain names having to be unique, however, means that only one WASA and one Renault can be registered as domain names directly under the TLD .se. This problem exists whatever the domain names system adopted.

The only possibility at present of permanently resolving the competition which can exist between different proprietors of the same name is to compel them to share a home page with the desired name. The different proprietors can then insert links from the common home page to their respective pages. This has been practised on a voluntary basis in a number of instances. For example, the municipalities of Habo and Håbo (which have to share the same name because at present the Swedish diacritics å, ä and ö cannot be used in domain names) share a home page. From this common home page, users click to the municipality they want to visit. Through this simple solution, two users competing for the same name have overcome the problem of not being able to have more than one, identical domain name. This would not seem to mean much of a problem for the users either: all they have to do is push one more button.

The successful arrangement thus arrived at by Habo and Håbo, however, does not make it likely that all parties competing for identical names in the Swedish part of the Internet will be equally accommodating. To escape the problem of competition for names, therefore, the manager will be forced to introduce a rule requiring proprietors of the

same name to start from a shared home page. This is really an attractive idea, but its introduction is likely to entail serious problems, added to which there are a number of technical and administrative problems which may be hard to solve if the users do not agree between themselves. Furthermore, it is impossible to alter the preconditions for those who have already registered domain names under the old rules.

The Committee therefore concludes that, whatever the rules attached to the TLD in question, competition between different proprietors of the same trademark or trade name for identical domain names is unavoidable with the present-day technology of Internet communication.

4.5.2 Abuse

A system with no prior assessment presupposes that the users will be able to register their domain names without difficulty. This means that the applicant cannot be required to present a registered trade name or trademark for prior assessment before a domain name can be granted. Consequently it may be possible for others instead of the proprietors to register trademarks, for example. A procedure of this kind can in several cases mean infringement of rights in a trademark or trade name, which of course cannot be allowed. Several interested parties the Committee has spoken to have warned that conflicts concerning rights in trademarks and trade names will occur if prior assessment is abolished. Others have maintained that the risk of problems concerning trademarks and trade names in a system with no prior assessment are exaggerated.

One natural starting point when judging how great a risk is to be expected is to make comparisons with other systems which do not include prior assessment. Denmark is one example close at hand. Prior assessment there was abolished just over two years ago. Since then, just one dispute over rights in trademarks and trade names has been taken to court. The example usually quoted to substantiate the existence of problems in systems with no prior assessment is the number of conflicts in the .com domain. In the past few years a hundred or more disputes between trademark proprietors and proprietors of domain names registered under the TLD .com have been taken to court. It has to be considered, though, that there are today more than nine million domain names registered under the TLD .com, and that the American legal system is far more litigious than Sweden's. Given this experience, and in the light of Swedish conditions, it is

reasonable to suppose that in Sweden roughly one case per annum will be taken to court.

Thus the Committee does not believe that there will be very many disputes over trademarks and trade names in the Swedish system when prior assessment is abolished. In other words, it would be perfectly possible to make this change to the Swedish system without any special rules focusing on problems of rights in trademarks and trade names.

Since, however, corporate names and trademarks mean a very great deal to proprietors, certain precautions may be called for. One way of reducing the number of potential conflicts is by relaxing the rules a little at a time. By restricting, for a transitional period, the possibility of registering domain names to register proprietors of trademarks and trade names, the registration of these protected names by other users can be avoided. Then, when prior assessment is abolished, those proprietors wishing to register their names will already have had the opportunity of doing so.

If the stipulation of use is introduced in the Swedish domain names system, this too will make things difficult for those attempting to register domain names solely with a view to selling them to the proprietors of registered trademarks and trade names. In addition, a rule forcing the applicant for a domain name registration to accept that use may not constitute infringement of a trademark or trade name right applying in Sweden will serve to indicate that abuse will not be accepted. Even if someone chooses to break the rule and register a domain name which infringes rights of another this problem can be overcome, by authority of the rule, by de-registering the names which constitute infringements of the rights of others, because any such act constitutes a breach of contract and, accordingly, can be grounds for de-registration. The Committee believes that by this means the number of conflicts will be kept small. In cases where adjudication nonetheless becomes necessary, recourse can be had to the common courts. They have the requisite competence and are already responsible for settling disputes concerning infringement of trademarks and trade names. The same possibility, of course, also exists when the infringement has been committed through the use of a domain name.

In the course of the inquiry, viewpoints have been expressed to the effect that it would be appropriate for all conflicts including domain names to be referred to one and the same court of law, so as to concentrate competence and experience and in this way promote uniformity of adjudication. The Committee, however, is unable, without further deliberations, to recommend introducing such a rule. If the common courts prove to have difficulty in coping with the disputes occurring in connection with domain name use, however, this possibility should be

considered, one argument in favour of it being that this is a complicated field and that few disputes are likely to arise.

Another problem requiring attention is that proceedings in a common court are both expensive and time-consuming. This is above all a disadvantage to small players, and so to make things easier for them it could be reasonable to build up a system of conflict resolution resembling that which ICANN has adopted for the generic TLDs (Uniform Domain-Name Dispute-Resolution Policy, UDPR). The system focuses on domain name registrations in bad faith, where a party has registered a domain name for the obvious purpose of disfavouring the proprietor of a trademark or trade name, either in order to poach on his good reputation or in order to sell the domain name. The proprietor of a trademark or trade name considering the domain name registration to be an infringement of the mark or name concerned can have recourse to a small, flexible administrative panel which will decide the matter quickly and cheaply. If the administrative panel finds that there is an infringement, it can order the cancellation of the domain name registration. No other sanctions are possible. The administrative panel should consist of persons who are trusted, and the parties themselves can appoint members. One great advantage from the viewpoints of efficiency and expense is that all correspondence must be electronically manageable. For further information concerning the system of conflict resolution which ICANN employs, reference is made to <www.icann.org>.

As has already been made clear, this system is applied concerning the generic TLDs, but it has been suggested that the system should also be made available as a pattern of conflict resolution for national TLDs. The Committee sees a great advantage in the system of conflict resolution used for the Swedish TLD being adapted to other systems in the world. The system employed by ICANN is capable of being developed into a common standard, and so it may be appropriate to create the same possibility in Sweden. If, therefore, the question arises of introducing alternative means of conflict resolution, ICANN's model can be used as a pattern. In the Committee's opinion, however, this is not necessary at the present stage of things, mainly because there appears to be little risk of conflicts, added to which, the problem of creating alternative "courts" – for example, a administrative panel to deal with domain name disputes – is that very often they are perceived as public authorities by users coming into contact with them. It would, moreover, be unfortunate if rights in trademarks and trade names were to be made a subject of adjudication by a number of different bodies apart from the common courts.

In the Committee's talks with the Trademarks Committee, it has emerged that the Committee too considers it essential that the field of trademark and trade name rights should receive uniform treatment. Uniform assessment is best achieved by adjudicating conflicts over trademark and trade name rights by the same procedure as far as possible.

Summing up, the Committee finds that disputes concerning domain names should as far as possible refer to the existing bodies for the settlement of disputes, i.e. the common court. In order to reduce the number of potential conflicts, the II Foundation should, for a transitional period, allow proprietors to register domain names directly under the TLD .se before prior assessment is entirely abolished. In addition, problems concerning rights in trademarks and trade names should be provided for in the clear and simple rules which are to apply concerning registration under the TLD .se. No alternative "courts" should be set up unless absolutely necessary. If there is nonetheless found to be a need for such possibilities, this question will have to be considered separately. The same applies concerning the need to gather all conflicts relating to domain names within a chosen court of law.

4.6 How are consumer interests provided for?

In Swedish legal tradition, the position of the consumer is particularly deserving of protection, and so it is essential that the activities conducted under a domain name registered under the Swedish TLD .se should also take consumer interests into account. Consumers shopping on the Internet, on home pages registered under .se, must be able to count on the same sort of protection as when shopping in a bricks and mortar store or by mail order. This principle is guaranteed by everyone registering domain names under .se having to accept that Swedish consumer rules will apply. If a trader on the Internet carrying on business under a .se domain is found violating the rules, the consumer will have a remedy, just as with malpractice in the "real world", e.g. by contacting the Consumer Ombudsman or the Consumer Complaints Board or taking the matter to court.

Internet trading, however, can be said to make additional demands on security and protection, one reason being that e-commerce is still a new phenomenon and many consumers feel insecure about it. Arguably, moreover, it is easier to evade liability for the trade one is

carrying on if the sale takes place on the Internet as opposed to a permanent place of business in this country.

In the Committee's opinion, the parties to disputes relating to consumer trade ought primarily to rely on the instruments existing to guarantee compliance with consumer protection. By stipulating, moreover, that those registering a domain name under the Swedish TLD .se must comply with Swedish rules of consumer protection, one indicates that this is something of importance for those who are to act under a domain name in the TLD .se. Failure by the domain name proprietor to comply with the conditions signed up for shall result in the domain name being de-registered.

De-registration of firms breaching the registration agreement will reduce the number of conflicts with consumers. One decisive de-registration criterion shall be that the domain name proprietor is in breach of the registration agreement and does not take remedial action. It is essential that questions of de-registration shall be dealt with swiftly.

Summing up, the Committee sees good prospects of providing for consumer interests if the rules are amended in accordance with its proposals. The basic principle is that consumers have the same protection as ever, even when purchases are made from a home page coming under the Swedish TLD .se. In addition, the Committee recommends that consumer interests also be taken into account in agreements governing domain name registrations. In this way a party carrying on business at a .se domain will risk de-registration if consideration is not shown for the consumers. The threat of de-registration is a deterrent in itself and means better possibilities for consumer-related e-commerce. Further recommendations concerning consumers are made in Chapter 6.

4.7 Other effects of abolishing prior assessment

There are further reasons in favour of a system with no prior assessment. It avoids the problems, already mentioned, of the private agent handling registration acquiring a quasi-official character. It is above all the different stages of assessment which create these elements of the exercise of official power (see Section 1.8). When prior assessment and the rules by which it is governed are removed, most of the elements of exercise of authority inherent in the present system will also vanish. It is worth adding in this connection that the Committee

doubts that it is at all possible for management to be entrusted to private agents with the system as it is at present constructed. Implementation of the regulatory change proposed by the Committee, in other words, is a precondition for management being able to continue within the framework of the private sector. That, however, in the Committee's opinion, is where the management of the domain names belongs.

Furthermore, a system with no prior assessment will make it possible to build up a system of registration which can be managed entirely electronically, thus saving applicants a great deal of time and expense. Above all this applies to newly started businesses. As a result, representatives can be given wider powers, enabling them to complete the registration of domain names instead of just receiving applications and passing them on to NIC-SE.

Representatives, then, would acquire wider powers. But a change of this kind will mean heavier technical demands on the representatives. In the Committee's opinion, however, several representatives today are amply qualified for the task. By allotting the representatives a more distinct role as registration officers, the tasks of NIC-SE can be narrowed down to monitoring technical efficiency. This proposal, of course, assumes that the II Foundation will see to it that the charges payable by representatives to NIC-SE are adapted to the new conditions implied by the increased number of domain name registrations and the reduced administrative workload.

To guarantee the security and functional efficiency of the new system, the agreements between the different representatives will be central. The user will get in touch with a representative who, on a basis of free competition, will carry out registrations of domain names under the TLD .se. In connection with registrations, however, the applicant will have to accept the stipulations specified in Section 4.2, enabling the II Foundation to order the de-registration of a domain name if the user agreement is not complied with. To guarantee that NIC-SE receives correct contact information as to who is responsible for each domain name, there must be firm routines indicating how changes in such information are to be communicated between the users, the representatives and NIC-SE. In addition there must be an agreement as to how technical operations are to be managed between the representatives and NIC-SE, and rules for the handling of a de-registration matter, both administratively and technically speaking, should be written in as a term of the agreement. It is also appropriate for the tasks of NIC-SE to be classified in written instructions between the II Foundation and NIC-SE. Since the II Foundation manages the Swedish domain names

system on a non-profit basis, revenue accounting will be an important part of the instructions between the Foundation and NIC-SE.

As the Committee sees it, the new system implies advantages to all parties. The entire registration procedure will be simplified for the users, who in the normal run of things will only need to contact a representative, who will be able to carry out a domain name registration automatically. The representative, as a number of representatives the Committee has spoken to put, will be spared ”sitting on two chairs”, i.e. both representing his customers and being a first instance of prior assessment vis à vis NIC-SE. NIC-SE will be spared the practical administration of registrations which the prior assessment at present implies and will be able to concentrate on its main task of guaranteeing technical efficiency. The II Foundation, finally, will acquire a more distinct role as manager and main provider. This can be achieved partly by domain name registrations being effected by the representatives, who are completely independent of the II Foundation.

With this new allocation of roles, more justice will be done to the competence of the existing organisations. The representatives, who have a wider customer interface and better possibilities of acting commercially, will be an identifiable face towards the users. NIC-SE will no longer need to devote time and resources to prior assessment and will be able to concentrate on building up its technical competence. The II Foundation in turn will acquire a more distinct role as responsible for management. Its various organisational components have the knowledge which this task requires. The various boards which have been set up to administer the system hitherto can acquire other roles in the new one. The competence which has been built up within the two boards, NDR and NÖD, where a large part of the II Foundation’s knowledge of the domain names field is concentrated, will of course continue to be important, not least in connection with drawing up of the new agreement.

5 Deliberations and recommendations concerning the organisation

5.1 Points of departure

As shown in the preceding chapter, there are great possibilities of making the changes that are needed in order for the Swedish domain names system to attain the objectives. This can be done by changing the rules and through the organisational changes prompted by the abolition of prior assessment. As has also been mentioned previously, it has been found that there is relatively little criticism of the active organisation. Several interested parties, however, have referred to a lack of legitimacy in the system hitherto, due very much to the prevailing regulatory structure. The fact of the task of managing Sweden's domain names system having absolutely no support in legislation or agreements is also part of the explanation. It is of the utmost importance that the organisation undertaking the task of managing the domain names system in Sweden should be perceived as legitimate by users. Accordingly, the proposals in this chapter are above all aimed at creating organisational legitimacy for the domain names system. In this connection the Committee has taken note of the proposals drafted by the GAC and already presented here in Chapter 3 concerning delegation of responsibility for the management of the national TLDs. The GAC proposals, it is true, have not yet been adopted by ICANN, which at its last meeting, in Cairo last March, resolved that the GAC's proposals were to be discussed further on an open-ended basis and would hopefully be ready for an adoption resolution at the Yokohama meeting on 15th-16th July this year.

There is a desire on the part both of Swedish society and of those responsible for the existing organisations to see a legitimate basis created for domain name management. The II Foundation, for example, has said that it would be a good thing if the State were to demonstrate its interest more clearly and assume greater responsibility for domain

name issues. The State having influence on management and responsibility for it being properly conducted is also supported by the existence of a wide international consensus in favour of the national TLDs being run on a non-profit basis. The Committee is convinced that these wishes can be accommodated within a system based on the proposals put forward by the GAC.

5.2 A Swedish model corresponding to that proposed by the GAC

The Committee recommends the introduction by Sweden of a model agreement corresponding to that proposed by the GAC for the delegation of responsibility for the national TLDs. There are several arguments in favour of creating this contractual structure and very few against it.

The main reason for introducing the proposed contractual structure is the above mentioned view on the part of users that the existing organisation lacks legitimacy. Another reason is the strong desire among the countries of the world today to resolve the vagueness which applies concerning delegation of the task of managing the national TLDs. That desire has been given concrete form in the GAC proposal. The Committee is of the opinion that it is desirable for Sweden to act in accordance with efforts which are being made internationally in such a global field as domain name management. These arguments are further strengthened by the prospect of Sweden, as a successful IT nation, also being a pioneer by becoming one of the first countries in the world to introduce the proposed contractual structure.

One possible argument against introducing the proposed contractual structure is that the present-day system is firmly rooted in the underlying historic development of the Internet. Sweden is a country which, in these connections, has been involved for a long time and from an early stage of things has had both the interest and the competence for dealing with questions concerning domain names. From the first registration in the mid-1980s down to the present day, developments have in principle been driven by enthusiastic, competent persons with visions of the importance of domain names for the development of the Internet. The majority, moreover, have worked almost entirely on a voluntary basis and have made a great contribution. As a result, the present-day system is designed entirely in accordance with the demands and guidelines previously defined by the Internet community. There are also a number of other systems which

have been designed on similar lines to Sweden's, e.g. Norway's for the TLD .no.

The overriding objective when the present Swedish system was designed concerned the assurance of good security in the domain names system, and the Swedish TLD .se is distinguished by a very high level of operational dependability, and its administration by a high standard of technical competence calculated a guarantee that operational dependability can also be retained in future. Many of the interests with which the Committee has spoken argue that neither the objectives nor the requirements have changed appreciably and that, accordingly, there is no reason why the existing structure should be altered.

The Committee, however, is of the opinion that the proposed contractual model does not imply any decisive changes to the existing organisational structure. Instead it is a matter of clarifying responsibilities. In addition, the use of the Internet and domain names is essentially different today from what it was when the task of managing the Swedish TLD .se was originally delegated. Today domain name management represents great commercial value to business undertakings and individual persons, and so it is justifiable that the State should assume greater responsibility for management.

In the course of the Committee's work, viewpoints have also emerged to the effect that it is unfortunate that private law organisations should decide rules which have far-reaching consequences for business undertakings, organisations and individual systems, e.g. concerning who is to be allowed to register a domain name under the TLD .se. The persons propounding these arguments maintain that the State itself should have general responsibility for management and should also be responsible for actual administration.

But the great majority of viewpoints received by the Committee have warned against entrusting the practical management of domain names to a national authority. To a great extent these arguments are based on domain name management making very heavy demands on flexibility and speed. Those demands are best met if management is entrusted to a private law organisation which is more capable than a national authority of adjusting to the rapid changes by which Internet development is characterised.

Another, not insignificant objection to letting the State assume full responsibility for management is that there is no call for such big changes if there is a workable system of domain name management to start with. Several of the viewpoints received by the Committee point in that direction.

5.3 Alternative models of domain name management

In the course of the enquiry proposals have been put forward for other models than the existing one. In the various proposals received by the Committee, three models are distinguishable over and above the existing one, namely the assumption by the State of full responsibility for management, the State assuming responsibility for management but delegating administration to another agent, and all responsibility for management being entrusted to one and the same private agent. The three models are presented below. This is followed, in the next section, by an account of the Committee's reasons for assuming that the II Foundation should remain as manager.

5.3.1 State responsibility and administration

This solution is based on the State taking over responsibility for the TLD .se from the present organisation, the II Foundation. All administration will be conducted under public auspices, e.g. within the framework of a national authority. Finland offers a closely related example. There the State has chosen to assume full responsibility for the administration of the Finnish TLD .fi. In purely practical terms, administration is conducted by the Finnish counterpart of PTS (the National Post and Telecom Agency) and all rules applying to domain names in Finland are made by a statutory authority.

Similarly, PTS or PRV (the Swedish Patent and Registration Office) could conceivably take over the practical management of domain names in Sweden. The present rules would be turned into official regulations and the present system of conflict resolution would be superseded by the system offered by our administrative courts.

5.3.2 The State assumes responsibility but delegates

Another option is for the State to take over main responsibility but for registrarship to be delegated to a private law organisation which will attend to the practical work. In this model, the registrar function could be delegated by a procurement procedure. Administration will thus be handled on the strength of an agreement between the State and the private law organisation.

This way of organising the management of domain names exists, for example, in the USA, where the federal government has played an active part as principal manager but practical administration has been attended to by private law bodies on the basis of agreement between themselves and the administration. Both the American national TLD .us and the generic TLDs .com, .org and .net are managed on the basis of a model resembling the one presented here.

5.3.3 A market player is responsible

This can be termed the most market-adapted model. A private agent has full responsibility and administers the TLD .se in response to the demands of the market. Thus the explicit demand at present for activities to be ”non-profit” cannot be sustained. It is common practice for the management of domain names questions to be organised on these lines. For example, the TLD .nu is administered in this way, and certain other TLDs with it.

Management of a TLD on commercial terms has several advantages. The private agent has the possibility of investing in the earnings in technical competence and the development of the TLD concerned. In addition, the competition existing between various TLDs in the world forces the company administering a TLD to be competitive in terms of pricing and service. If the company in charge does not measure up to the market’s demands, this is immediately reflected by a falling-off of applications. If administration is placed outside the market, development is liable to be inhibited.

5.4 The II Foundation becomes manager

All the above models presuppose more or less thoroughgoing changes to the existing system. Responsibility for the TLD .se, for example, will have to be re-delegated in the event of any of the models presented above being proposed by the Committee. International developments do in fact indicate that states are tending more and more to assume responsibility for the TLDs in their own countries. Besides, there is nothing to suggest that ICANN would object to a request from the Swedish Government for re-delegation of responsibility for the national TLD .se. Thus the Committee is of the opinion that responsibility could be transferred if the initiative came from the Swedish Government.

This could, however, pose problems, partly because questions as to who may dispose of a TLD are not clearly answered, and partly because it would doubtless take time for a new system regarding organisational conditions to achieve stability and permanence in connection with a major alteration of Sweden's domain names management. The Committee's basic principle, therefore, has been that any proposals for thoroughgoing changes to the organisational structure will have to be considered very carefully. In addition, of course, they have to be viewed in relation to the alternative of using the existing structure as a starting point and instead proposing changes within that framework.

One fact to be noted is that the II Foundation is tasked with managing the TLD .se and that, thanks very much to NIC-SE, this has worked well within the framework of the rules applying. If the II Foundation, and NIC-SE with it, are allowed to continue, the competence present within the existing organisations can be utilised. Another important argument is that, during the years in which they have been managing the TLD .se, the present-day organisations have forged important contacts, not only internationally but also with other organisations in Sweden. The Foundation, moreover, has the advantage of coming under supervision by the County Administrative Board. It can also be added that the Foundation is a form of association well suited to an assignment such as the management of domain names.

Therefore, as things now stand, the Committee sees no need for any extensive changes to the organisational structure. To strengthen the legitimacy of that structure, the Committee recommends that the task of managing the Swedish TLD .se be formalised in an agreement concluded by the Swedish Government or by a national authority acting on its behalf. The agreement should be made to include the conditions set by the State for domain names management in the community interest. The further changes which have been made in order to ensure legitimacy do not impact on organisational structure. The Committee concludes that the II Foundation, given the fact of its already administering .se, should continue to be entrusted with management of the Swedish TLD.

Legitimacy, however, can be further reinforce. The Committee recommends that this be done by making two permanent seats and one alternateship on the Board of the II Foundation available to representatives appointed by the Government after nomination, for example, by PTS. This proposal will necessitate amendment to the present statutes of the II Foundation, amendments which the Foundation, during talks with the Committee, has pledged itself to make, in accordance with the Committee's proposals. When the members

appointed by the Government take their seats on the II Foundation Board, the Foundation's legitimacy will be further reinforced. In addition, it would be appropriate for the statutes to be amended in such a way as to make every member of the Board eligible for the chairmanship.

It has been further proposed that the Government should appoint an auditor to examine the activities of the II Foundation. The Committee has considered this proposal but, bearing in mind the changes which the Committee has reposed to the recruitment of the Board of the Foundation, the Committee finds that this is not necessary at present. Furthermore, the distinctly "not-for-profit" focus of the statutes and the fact of NIC-SE as a joint stock company, already being subject to auditing, argue that no further auditing is needed. This, of course, is conditional on the II Foundation, on its home pages and in other parts of its activities, showing a transparency commensurate with the demands which can be made on a foundation with the expressed objective of operating on a non-profit basis.

In the course of the inquiry, other viewpoints have also been tendered concerning ways of strengthening legitimacy. It has been remarked that one of the reasons why the existing organisation is not perceived as legitimate is that the II Foundation itself owns the company, NIC-SE, which is the registrar unit. Thus another way of creating legitimacy could be to entrust actual management to an entirely separate company. A proposal of this kind would mean the II Foundation having to sell off its shares in NIC-SE, the intention then being for the assignment as registrar unit in future to be procured on a basis of free competition.

The Committee, however, wishes to observe that the private law agent signing an agreement with the Government on the management of the Swedish TLD .se must be given a free hand in deciding purely practical methods of administration. The expedient adopted by the II Foundation of putting NIC-SE in charge of practical management has worked well up till now, and NIC-SE has conducted its share of domain names management in a creditable manner.

If the II Foundation were to breach its agreement with the Government, e.g. by failing to achieve the objectives of management, re-delegation of the task of managing the Swedish TLD could come into question. A breach of contract, of course, has consequences in contract law, one of them probably being a repudiation of the agreement and subsequent re-delegation of the assignment. In this connection the Committee wishes to underline that apart from the agreement with the Government must be for the II Foundation to undertake to adapt its pricing to the new conditions. It is worth mentioning that when the

.com domain was opened up to competition, NSI reduced charges payable to the registrars from about SEK 300 to barely SEK 80. This can be an indication of the amount by which charges could be reduced in the Swedish system.

Summing up, the Committee believes that the lack of legitimacy existing for organisational reasons in the present-day system will disappear if the task of managing the Swedish TLD .se is formalised through an agreement between the Government and the II Foundation. To this must be added the Committee's proposal that the II Foundation make two permanent seats and one alternateship on its Board available to representatives appointed by the Government.

5.5 Preconditions for the assignment

Thus, as shown in Section 1.8, the system hitherto for managing the TLD .se has been organised on quasi-official lines. As far as the Committee has been able to understand, the purpose in choosing this structure was to impart legitimacy to the organisation. There is of course no law against borrowing organisational ideas from the public service, but in the event the quasi-official traits have if anything created confusion in the minds of users, rather than the legitimacy they were intended to achieve. Problems of legitimacy apart, the quasi-official traits can also entail difficulties when the time comes to sign the agreements described above. The present management being quasi-official, this could arguably mean that the Government's agreement with the II Foundation will include the exercise of public authority, which cannot be transferred by agreement without statutory authority.

According to the definition of exercise of public authority given in Section 1.8, an agreement as such falls outside the concept. Thus an agreement between the Government and the II Foundation, framed by both of them, would not amount to the exercise of public authority. An agreement of this kind, however, will not be permissible if the task to which it refers involves the exercise of public authority at a later stage.

One precondition for the II Foundation being commissioned, without further deliberations, to manage the Swedish TLD .se is for the regulatory changes proposed by the Committee in the preceding chapter to be put into effect. By altering the system and removing those parts which calls management to assume aspects of the exercise of public authority, the task of managing the Swedish domain names system could be allotted through an agreement between the Government and the II Foundation. The Committee concludes that it is above all the regulatory provisions and the prior assessment linked to

them that constitute the problem. If prior assessment is abolished and the regulatory structure altered, in such a way that everyone applying for a domain name will, as a general rule, be able to register it, then management, in the Committee's opinion, will not include the exercise of public authority.

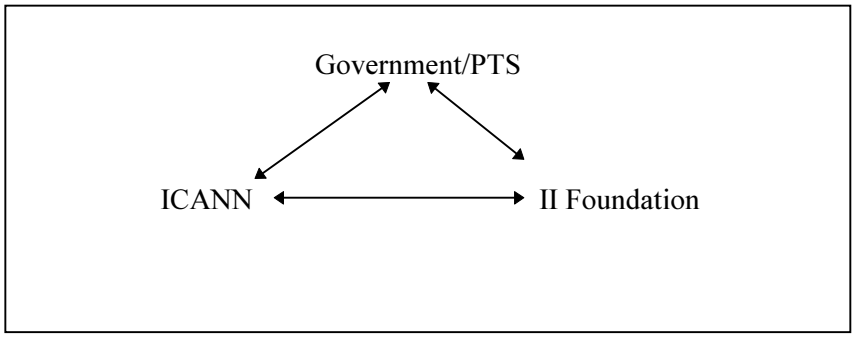
5.6 The Government makes the National Post and Telecom Agency the responsible authority

The GAC proposals refer to contractual relations in which the Government or the authority appointed by the Government shall be a party in relation to the manager and ICANN. Concerning responsibility for the management of the Swedish TLD .se, the Committee commends that PTS be the authority to which the Government transfers responsibility as a contracting party. This question has been discussed with PRV and PTS among others, and with a number of interested parties. The main arguments in favour of PTS being made a contracting party are that domain name management is predominantly technical by nature and that the competence required for a contracting party is best represented within PTS.

With PTS as a contracting party, the Government, of course, will not be deprived of its possibility of issuing PTS, through the assignment or by other means, with instructions concerning matters which the Government considers to be of such importance to society that they should be included in the agreement with the II Foundation as a condition of the contract.

5.7 How are the agreements between the different parties to be framed?

The tripartite construction referred to in the GAC proposal would thus assume the following appearance in Sweden's case:



There will be one agreement between the Government and ICANN and one between the II Foundation and ICANN. The two last mentioned agreements are both of secondary importance in this connection. The purpose of both of them is for the parties to inform each other on how the management of the domain names system is to be conducted.

The agreement between the Government and ICANN, according to the GAC proposal, means for the Government supplying ICANN with information on how relations between the State and the manager are regulated. Furthermore, ICANN shall be informed as to how the Government will ensure that the agreement with the manager is complied with. There already exists an undertaking between ICANN and the II Foundation – albeit of an informal nature at present – concerning management of the Swedish TLD .se. Within the framework of the proposed contractual structure, the agreement between ICANN and the II Foundation will also have to be formalised.

The agreement between PTS and the II Foundation has a central bearing on the Committee's proposals. The Committee recommends that this agreement be framed in line with the proposals which have been discussed by the GAC. Thus there should be an undertaking on the part of the II Foundation to promote the civic interest. Particular attention should be paid to consumer interests and to the fact that de-registration matters must be quickly dealt with. Furthermore, it shall be evident from the agreement that the Government has general responsibility for the functioning of the national TLD. Another important point is that the II Foundation accepts a mirror-server referring to the TLD .se being placed under PTS's control thus beyond the influence of the II Foundation. In addition, there should be a clause making it clear that the management of the TLD .se does not constitute a right but is more to be regarded as a public service assignment. The Committee also wishes to point out that the agreement should be concluded for a definite term, which of course, out of consideration for the stability of the system should not be too short.

5.8 Further recommendations with regard to the existing organisation

In the course of the inquiry, strong criticism has emerged from companies and organisations – but also from the general public – regarding the capacity of the existing organisations for supplying adequate, up-to-date information. The information difficulties are clearly instanced by the fact that when, during April and May 1999, the Committee made exploratory contacts, it discovered that several of the different parts of the organisation did not really know what the others were doing. These problems are due to the organisations in question being at the build-up stage. At this stage it is difficult to keep information updated internally and also in relation to the general public. Another explanation is that a great deal of the work involved has been done more or less on a voluntary basis by the persons taking part, over and above their regular duties. Attending to information management under such conditions is of course no easy task.

The fact of there being an explanation for the deficiencies of communication in the existing system, however, does not mean that they can continue. Domain name management is a matter of great public interest and, consequently, it is exceedingly important that the organisations tasked with management should be alert and aware of the demands made concerning outward information to the general public but also inward information to the different parts of their own organisation. Deficiencies have, for example, included the home pages of the various organisations, several of which have proved to be poorly updated. This has been pointed out by several of the interests with whom the Committee has spoken, and it has the effect of impairing confidence in those responsible for domain names management. This, probably, is a further reason why several of the interested parties with which the Committee has spoken feel that the existing organisation has lacked legitimacy.

When the task of managing the Swedish TLD .se is, in future, to be undertaken on the basis of an agreement with PTS, this will mean the authority, and the Government with it, having cause and possibility to keep itself better informed of the activities conducted by the II Foundation. Transparency will be further improved by the Government appointing members of the Board of the II Foundation. Another way of improving communications with national authorities and community representatives is to continue the development of the work already in progress within the working group formed in the wake of the Agency for Administrative Development inquiry ”The Swedish Part of the

Internet", otherwise known as the DOSA Group. That group already includes representatives of the State and the various organisations responsible for domain names management.

The Committee further believes that the proposals which it has presented in preceding sections will also lead to an improvement in the management of information issues. The clearer allocation of roles discussed in Section 4.7, not least, will make it easier for the general public to see who is responsible for what. In this way it will also become easier to acquire information and to address questions to the right recipient. For the further improvement of communication with users and the general public, it is also important that adequate, up-to-date information should be available on the home pages of the organisations involved. Perhaps consideration should also be given to the need of the officers of the II Foundation of a greater element of permanent staff qualified for the task and capable of dealing with these matters. At all events, in the Committee's opinion, the II Foundation must give priority to the task of informing the different parts of the organisation and recipients in its future role as the organisation responsible for the task of managing the Swedish TLD .se.

6 Further proposals and recommendations

6.1 The introduction of Secure DNS

As mentioned in Section 4.4, a more secure technique, known as Secure DNS (DNSSEC), exists for the handling of DNS information. Sweden has made quite considerable headway with the incorporation of DNSSEC. On the technical side, it can be noted that Swedish DNS engineers are taking part in international working groups for the standardisation of Internet protocols. Internationally too, experiments, again with Swedish agents taking part, have begun with the software which exists. In addition, NIC-SE, the Swedish registration unit, is developing technical systems for the handling of signatures among other things.

One important factor for the development of the Swedish part of the Internet is that secure systems must be built and their development given priority. In this connection, therefore, the Committee wishes to recommend that all agents involved give priority to the development of DNSSEC. It would, for example, be a great help if Swedish national authorities were to campaign at international level for openness in these matters between different countries, not only in Western Europe but also in America and in other parts of the world. Swedish national authorities should also contribute towards the spread of DNSSEC by themselves becoming early users of the new technology and in this way inspiring confidence in the methods. Certainty of actually communicating with the right authority in the ever-increasing volume of electronic correspondence would spur the development of DNSSEC and stimulate the interest of businesses and private individuals in more secure technology.

In this connection it is also essential that domain name users in Sweden be enabled as soon as possible to choose and make use of the more secure technology.

Offering DNSSEC, however, means heavier demands on the registration unit. In the Committee's proposals, moreover, representatives will be allotted greater responsibility than before. The Committee, however, is convinced of the existence of good competence, both within the present registration unit NIC-SE and on the part of several of the representatives affiliated to NIC-SE. It is not necessary for all representatives to be in a technical position to offer DNSSEC. Being able, as a representative, to offer users the possibility of using a more secure technique will be a competitive asset. In this way the move towards more secure systems will come to be market-driven. Should it prove necessary to stimulate the use of DNSSEC, another means could be for NIC-SE and the II Foundation to use the pricing mechanism as a steering instrument.

6.2 Swedish diacritics

One problem to which the Committee's attention has been drawn is the impossibility of using Swedish diacritics (å, ä and ö). This is reflected, for example, by the case described in Section 4.5, of the two municipalities of Habo and Håbo. Because the diacritic cannot be used in a domain name, a name otherwise including them has to be translated – transcribed – in order to become a domain name. Thus Håbo has to be transcribed in order to be turned into a domain name, habo.se, which of course was unfortunate for the real Municipality of Habo. Technology does in fact exist whereby Swedish diacritics can be used in domain names, but no generally accepted standard has yet been adopted.

The Committee considers it urgently necessary that such a standard be created, and it therefore recommends that the Government, national authorities, the II Foundation and other agents involved actively pursue, both in their own internal work and in the international context where they are represented, the question of devising a standard which will make possible the use of Swedish diacritics in the domain names system.

6.3 Educational initiatives

As has already been mentioned, Sweden today occupies a leading position where DNS competence is concerned. The maintenance of that position, however, is not a foregone conclusion, and the Committee therefore recommends that the II Foundation act on the wide-ranging

instructions conferred by its statutes and apply part of the funding generated by domain names management to encourage research and education in this field. Close co-operation exists already with universities and other higher education establishments, and the Committee feels that it would be beneficial if this could be concretised in a programme for the preservation of future competence.

The Committee therefore recommends the II Foundation to take the initiative in this field, in keeping with its own statutes.

6.4 Consumers

The question of how consumer interests can be provided for in domain names management is discussed at several points in the report. First and foremost, consumer interests will be provided for through the applicant for a domain name registration under the TLD .se being alerted to the fact that an infringement of Swedish rules of consumer protection can lead to de-registration of the domain name. The question as to whether a domain name is to be de-registered can, however, involve a delicate balance. Borderline cases may occur where it is not immediately clear whether a domain name is to be de-registered. In such cases it is important that the consumers not be the losers. If, in the event, several such cases occur, the Committee recommends that the II Foundation consider introducing the possibility of compensation for consumers who have suffered harm. This could be done, for example, by paying reasonable compensation to consumers adversely affected by the II Foundation not de-registering a domain name in time. Another alternative could be to consider introducing some form of insurance system intended for consumers who have suffered harm on account of transactions performed through activities under the .se domain.

One great advantage in creating strong consumer protection in the Swedish system is without any doubt that it will benefit the development of consumer trading on the Swedish part of the Internet.

6.5 Common policy for public activity

The public sector accounts for a large part of domain name use in Sweden. National authorities and other governmental agents employ domain names to create accessibility and to disseminate information about their activities. Being on the web has become an important part of the pursuit of greater transparency by government bodies. The Swedish legal system too is characterised by publicity and by public

access to information. In this process, a home page can be a valuable aid.

More and more citizens are also utilising the benefits which the Internet confers, e.g. in connection with information gathering and the ordering of forms. There are great economic advantages in the creation of these functions and in the provision of opportunities for citizens to find the right information. In this connection there is also a democratic value in citizens having ready access to information from national authorities. It is therefore essential that the Government work out a common policy for public activity in the domain names area.

The main argument in favour of common guidelines is that they make it easier for the users to find what they are looking for. If all public activities are presented on the Internet in compliance with a common structure, both the finding and spreading of information will be simplified. Another argument in favour of gathering all public activity under the Swedish TLD .se is that in this way the Swedish Government will be made primarily responsible for management. The present-day practice of allowing public activities to be presented under different TLDs can entail considerable security risks. For example, public activities are presented under Niue's TLD .nu. This TLD is controlled by a private person and the allocation of responsibility for it has been challenged by Government representatives within Niue. Should the question arise of re-delegating responsibility for the management of .nu, there is basically no possibility of Sweden guaranteeing that the Swedish public information present there can be protected. Furthermore, it is natural for Sweden's citizens to look for Swedish public information under the Swedish TLD, and accordingly it is also appropriate that Swedish public information should be found there.

6.6 The emergence of new domain names systems

As was mentioned by way of introduction, in its work on this report the Committee has concentrated its attention on the management of the Swedish TLD .se. It is, however, perfectly possible that in future there will come to be other domain names systems which are managed from Sweden by Swedish agents. One example close at hand is that of the Swedish company Bahnhof Internet AB, which assists the island republic of Sâo Tomé with the technical management of its TLD .st.

Probably the future will bring additional examples of domain name systems competing with .se.

In the evaluation of the domain names system which the Committee assumes that PTS, as part of its follow-up of agreements, will be undertaking, developments in this field must also be considered and factored in.

7 Consequences

7.1 Financial consequences

None of the Committee's proposals will impose any burden on the national budget.

The Committee's proposals mean an important task for PTS as a contracting party. The possible financial consequences of the agreement to PTS can be taken into account when signing the contract and regulated as is normally done between the parties to a contract.

In the system proposed, the II Foundation will have a very important role to play. The additional tasks entrusted to the II Foundation will, however, be more than covered by the revenue accruing from domain name registration. If developments follow the same course as in Denmark, the proposed system will mean a doubling of the number of registrations under .se within a few years. The Committee believes that the growing number of registrations will provide scope for the II Foundation and NIC-SE to discharge their duties, at the same time as the charge can be substantially reduced.

7.2 Efficiency aspects at national and local government levels

Where national government bodies are concerned, new possibilities will be created for the registration of domain names, added to which, the Committee's proposals concerning a common policy for domain names use will make possible the achievement of better order. This will mean benefits not least to citizens, who will have less difficulty in finding the information they are looking for. In other words, if a common structure is created, this will make it easier for users to deduce by intuition where information can be located.

The Committee's proposals also mean that society will be in a position to guarantee secure access to public information, partly because the Committee's proposals mean new possibilities of referring public activity on the Internet to the Swedish TLD, and also through the priority given to use of the DNSSEC security system.

7.3 Consequences to business undertakings and private persons

7.3.1 Business undertakings

Businesses active on the Internet and connected with Sweden will benefit from the proposed rules. Most firms in this group, it is true, are already in a position to register domain names directly under the TLD .se, but the Committee's proposals will lead to increased availability and thus to greater possibilities for businesses also to act commercially in the matter of domain name strategies. Added to which, the Committee's proposals will make it possible for businesses from other countries with activities focusing on the Swedish market to establish themselves in the Swedish part of the Internet, which ought logically to stimulate development in Sweden.

7.3.2 Focus on small businesses

The main group to benefit from the new rules will be small businesses, which at present have no possibility of registering domain names directly under the Swedish TLD .se. If prior assessment is abolished, this will undoubtedly make it easier for small players to register domain names in the Swedish system. It is also clearly essential for small firms operating in the Swedish market only to have the possibility of registering a domain name under the Swedish TLD .se, and SME start-ups will be facilitated if, as proposed by the Committee, small firms are able to register viable domain names quickly, easily and inexpensively.

Most of the interests with which the Committee has been in contact state the registration directly under the TLD is far more attractive than registration under an SLD, the reason being that, the way the Internet is used today, a domain name directly under the TLD is far easier to find and use. An SLD makes things more difficult for customers and users and in many cases, moreover, precludes commercial use of the domain name.

7.3.3 Private persons

Individual citizens will also benefit from the Committee's proposals. Previously, private persons have been referred to the TLD .pp.se. In the event, hardly any users have found this to be an attractive option, with the result that most private persons with domain name addresses are to be found under other TLDs instead of the Swedish one.

7.3.4 Consumers

The Committee's proposals imply several important benefits to consumers. Finding domain names will be easier, because in future they will be located directly under the TLD .se. The problems experienced by consumers and other users with the system hitherto in finding out the TLD under which a name is located will disappear if the Committee's proposals are put into effect.

In addition, the Committee's proposals make it clear that Swedish rules of consumer protection apply under the Swedish TLD .se. Moreover, when the number of firms registering their domain names under .se increases, this will have the effect, all in all, of making e-commerce more secure for Swedish consumers. Through this proposal, prospects will be created for a growth of electronic trading.

8 Implementation

The II Foundation has declared itself willing to take the measures which the Committee's proposals imply and has also pledged itself to inaugurate the process of change immediately. A reasonable length of time will, however, have to be allowed for necessary adjustments to the new conditions. Even so, the changes should be implemented by 31st December 2000 at the latest.