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## National Dependability Policy Environments

### NETHERLANDS

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### ***Overview of the Country's Information Infrastructure***

The Netherlands is an advanced ICT country with a strongly liberalised telecommunication infrastructure. It has a relatively high number of IT employees and companies invest considerably in IT-training compared to other ICT leading countries. Dutch politicians want to keep a leading position in ICT, therefore initiatives to enlarge trust have been stimulated by the government.

In 1998, the total expenditure on hardware was 7.4 million EUROS, of which 6.3 million EUROS was spent by the business sector. In software, expenditure totalled 3 million EUROS, again with the business sector accounting for the largest portion – 2.5 million EUROS. In terms of computer services, business sector expenditure was 4.6 million EUROS. In total, the Dutch government spent 1.6 million EUROS on ICT in 1998 and households, 0.7 million EUROS. Banks take a large share in the ICT expenditures (10% of the total expenditures).<sup>1</sup>

The production value of the whole ICT sector shows a growth of 70%. This is equal to 18% of the total economy growth. The volume of production in the ICT service sector has more than doubled.<sup>2</sup> The total share of the Dutch ICT sector has grown from 4.50% in 1995 to 5.55% in 1999. This can be fully explained by the growth of the ICT service sector, which has grown 85% in this period. In general, the ICT sector contributed nearly 0.6%-points per year to the GDP growth in the second half of the previous decade. This is modest compared to the US figures (0.9%-points per year of GDP growth).<sup>3</sup> That said, ICT still makes an important contribution to the growth of the Dutch Economy.

Since 2000, computer service companies have shown a decrease in their growth. Between 1996 and 1999, the real growth in sales in such companies was approximately 23%, in 2000 it was 9% and in 2002 it is expected to fall further to 8%. A contributing factor is uncertainty about e-commerce. Meanwhile, the telecommunications sector has grown very rapidly in recent years. Real sales doubled in 4 years. However, the rapid growth is expected to end. New growth impulses won't come in the near future. The growth of the real sales in 2000 sustained 15% and 9% in 2001. This growth is still higher than in other Dutch companies.

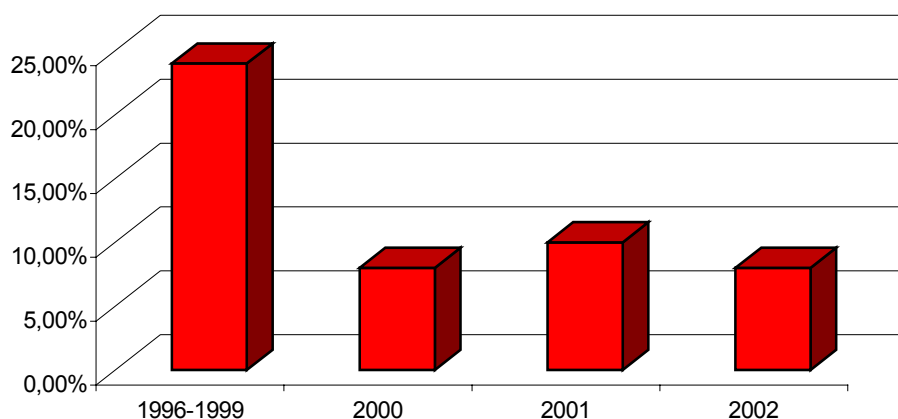
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<sup>1</sup> CBS, *De Digitale Economie*, 2001; *Dutch statistical bureau*, the Digital Economy, 2001

<sup>2</sup> Ibid

<sup>3</sup> CPB report 2001/1, sectoral developments in the Dutch Economy; *Central Planning Bureau*, report 2000/1

**Real Growth in Sales-Computer Services Companies**  
(Source PCB, 2001)



Following a real growth of 13% in 2000, the ICT industrial sector grew only 6% in 2001. In 2002, the same growth percentage is predicted. This sector is sensitive to developments of the international economy - due to a negative prognosis on international economic growth, companies are cautious about their ICT expenditures.<sup>4</sup> The total labour volume of the whole ICT sector has grown from 3.66% in 1995 to 4.47% in 1999. The labour volume in the ICT industrial sector has stayed the same in this period, whereas that for ICT services has increased by 58%. The share of the ICT sector in the growth of the national employment has remained around 10% in recent years.<sup>5</sup>

In terms of IT penetration, the Netherlands presents an interesting mixed picture. In January 1998, 4 million households owned a computer. In June 2000 there were 4.7 million. Approximately 10.7 million people within these 4.7 million households had access to a computer. The number of households with a PC has grown less fast than the number of households with a PC and Internet access.<sup>6</sup> The number of households with Internet access has increased from 1 million households in January 1998 to 2.8 million households in June 2000 (in which 6.4 million people had access). People can also use the Internet at different locations, such as work or school. This translated in 2000 as 60% of all Dutch households owning a PC with access to the Internet (In 1998 this had been only 25%). The number of new clients, however, is now expected to grow less rapidly because of market saturation.

With regard to ICT penetration in businesses, in 1995 nearly 80 % of companies were already computerised. The number of companies with external data communication has grown from 45 % in 1995 to approximately 75 % at the end of 2001. The number of companies with access to the Internet is still growing. In 1995 10% of all companies had access to the Internet. At the end of 2001 this was 70%.<sup>7</sup> According to statistics of 'The World Bank Group', in 1999, 607 people per thousand had a fixed telephone mainline. In that same year 436 people per thousand had a mobile phone.<sup>8</sup> Alternatively, in

<sup>4</sup> CPB Memorandum of 10th April 2001 'CEP-op-maat ICT 2002-2002'

<sup>5</sup> CBS, *De digitale economie*, 2001

<sup>6</sup> CBS, *De digitale economie*, 2001

<sup>7</sup> CBS, *De digitale economie*, 2001

<sup>8</sup> Data gained from ITU World Telecommunication Development Report 2000. Found at <http://www.worldbank.org/data/wdi2001/> (visited on 21 March 2002)

1997 just under 6% of the population had a mobile phone. By the end of 2000, this figure had risen to approximately 67%.

In terms of electronic commerce, nearly 0.73 billion EUROS was sold on the Internet between companies in 1999. Marketing analysts from IDC estimates a growth of 20 times in 2003 (16.2 billion EUROS). B2B sales are also estimated per distribution channel. In 1999, 75% of B2B sales went via the Extranet. This is a closed network between companies on which third parties are not allowed to enter. Transactions via the public Internet (e-tailing and e-procurement) had a share of only 23% in the total e-commerce sales. The trade on e-markets (virtual market places) will grow very rapidly. In 1999, the share in total e-commerce sales was negligible. However, in 2003 the e-market trade is expected to be half the size of the total e-commerce trade sales (8.1 billion EUROS).<sup>9</sup>

In B2C trade, 1.4% of all households shopped on the Internet in January 1998. At the end of December 1999 this figure had grown to 4.7%. In June 2000, e-commerce use had grown to nearly 6%. This corresponds to 400,000 households.

According to the IDC, e-commerce sales in 1998 were around 111 million EUROS. By 1999 this had almost doubled to 212 million EUROS. It is estimated that sales will roughly double further each year. IDC's figures, however, include 'offline shoppers' (i.e. people who use the Internet in the purchasing process, although the actual purchase is not done on the Internet). Compared with the total sales of all Dutch households, the Internet sales amounts to 0.1% in 1998 and 1999. According to the definition of the IDC, the Internet sales as a share of the total sales, amounts to 0.2% in 1998 and 0.3% in 1999.<sup>10</sup>

### ***Main ICT Regulatory and Legal Developments***

In the 1990s, the Netherlands has progressed towards a more flexible and competitive environment. However the telecommunications industry is still characterised by the legacy of past regulatory policies. In the Netherlands the local market was liberalised in 1997. The long-distance market was also liberalised in 1997. The mobile phone market was liberalised in 1995. The Public Telecom Operator (PTO) in the Netherlands, KPN Telecom NV was privatised in 1994.<sup>11</sup> According OECD data, no competitors participate in the telecom market. However there are competitors like Tele2 and Onetel who compete on low prices for phone calls and offer free subscription.

In the Netherlands, the unbundling of the local loop started in June 2000, although it is not clear whether lines are operational yet. KPN is due to make 200 distribution frames ready for unbundling by the end of 2000.<sup>12</sup>

In 1997 the OPTA (independent post and telecommunications authority) was introduced to supervise the legislative actions on the field of post and telecommunications. Through this, a competitive market is stimulated.<sup>13</sup> The tasks of the OPTA are regulated in the OPTA-law. The Ministry of Transport is

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<sup>9</sup> CBS, [De digitale economie](#), 2001

<sup>10</sup> CBS, [De digitale economie](#), 2001

<sup>11</sup> OECD, [Regulation, market structure and performance in telecommunications, economics department working papers](#) NO. 237, April 2000

<sup>12</sup> European Commission, [Sixth Report on the Implementation of the Telecommunications Regulatory Package](#), Annex 3, December 2000

<sup>13</sup> <http://www.opta.nl/> (visited on 21 March 2002)

politically responsible for some of OPTA's tasks, although it has no direct influence on the decisions of the committee.<sup>14</sup>

In 1998 a new telecommunications law was introduced, replacing the laws on telecommunication provisions. The law was introduced to strengthen the competition position of the Netherlands by offering first class telecommunication provisions and applications - to accomplish this competition was introduced; to guarantee the quality and accessibility of the telecommunication infrastructure; and to guarantee the environmental interest when accessing and using the telecommunication provisions. The Besluit Algemene Richtlijnen Telecommunicatie (BART) supports the competitive vision of the Government. Bart contains regulations for holders of a concession.<sup>15</sup>

In addition to these regulatory activities, the Dutch government has taken a very proactive role in information technology. The government has built a five-pillar approach to strengthening the ICT base in the Netherlands. Firstly, there is the Telecommunications Infrastructure. This involves encouraging innovation, competition and investment in the telecommunications infrastructure; ensuring the efficient allocation of frequency space; and safeguarding the technical reliability of the telecommunications infrastructure. Secondly comes know-how and innovation – the development of technological know-how; the promotion of strong ICT clusters; and assuring sufficient personnel via the labour market and education. Thirdly, there are the issues of access and skills. The Government has the responsibility to encourage the citizens and firms to gain access to information technology and encourage ICT skills in the (future) work force. There then follow regulatory aspects - to equip general legislative and regulatory provisions for the information society; to offer legal security; to create clarity concerning fiscal regimes and to build confidence in the information society. The fifth area concerns ICT in the Public Sector, with a view to improve service provision to citizens and firms; to improve the internal performance of the government by ICT; and to formulate more visibly the government's role as an ICT player in the ICT market.<sup>16</sup>

A few fiscal incentives have a positive influence on the development of the ICT usage. These include facilities for the give away of PCs to schools (only in 1999); fiscal incentives for educational efforts; exemption of labour tax when people trade their furlough days for a PC (the employer also gets certain fiscal benefits when he makes the trade possible); and deductible profession costs. The expenditures on computer equipment are fiscally deductible in the beginning.<sup>17</sup>

Another initiative by the Ministry of Transport is the introduction of SEC (Subsidy Electronical Communication). By introducing SEC the Ministry hopes to stimulate projects that develop and introduce new communication techniques and services. These techniques and services have to be suitable for new advanced communicational networks.<sup>18</sup>

The College bescherming persoonsgegevens (the Dutch Data Protection Authority) has set up a co-operation group to supervise the way in which processors deal with and use the personal data and to

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<sup>14</sup> <http://www.opta.nl/> (visited on 21 March 2002)

<sup>15</sup> <http://www.minvenw.nl/dgtp/home/cgi-bin/dgtp/show.pl?layout=cba&var=categorie&val=CBA> (visited on 21 March 2002)

<sup>16</sup> <http://www.american.edu/carmel/mb1626a/netherlands1.htm> (visited on 21 March 2002)

<sup>17</sup> [http://www.minfin.nl/default.asp?CMS\\_ITEM=C491BDAA10BB406FB39B5A8288A4C473X2X61078X94/](http://www.minfin.nl/default.asp?CMS_ITEM=C491BDAA10BB406FB39B5A8288A4C473X2X61078X94/) ICT en belastingen nationaal

<sup>18</sup> <http://www.senter.nl/asp/page.asp?alias=sec> (visited on 21 March 2002)

interpret and apply complex aspects of the WBP (Data Protection Act). The co-operation group has developed a set of products that allow organisations, with different levels of depth, to check for themselves how their own situation relates to the WBP.<sup>19</sup>

The Dutch government is also very keen to foster on-line administrative activities through e-government initiatives. To reach these objectives, three themes are defined: an easily accessible electronic government, a central government site ([www.overheid.nl](http://www.overheid.nl)) and on-line distribution of Parliamentary proceedings and laws. An intergovernmental intranet is also in the process of being developed.<sup>20</sup>

The Electronic Commerce Action Plan, drafted at The Hague in March 1998, highlighted the Netherlands' current position, set forth future goals and highlighted several obstacles for E-commerce. A unique aspect of e-commerce in the Netherlands is the fact that this market driven enterprise is intended to be an information gateway to the European community, in the same way that the Dutch currently act as a point of distribution of goods to Europe.<sup>21</sup>

### ***Assessment of Phenomena Undermining Dependability***

Between December 1998 and May 2001, 76 defacements took place in the Netherlands, according to [www.attrition.org](http://www.attrition.org). The following are some examples. The personal information of approximately forty Ahold (Supermarket concern) applicants stood on the Ahold Internet site for a few days.<sup>22</sup> The employers union VNO-NCW estimates that the 'I love you' virus, in the Netherlands, brought a damage of about €22.7 million; the virus infected approximately 15 % of all the companies.<sup>23</sup> In 2001 there was another threat, the worm called 'Code Red'; dozens of websites hosted by KPN disappeared.<sup>24</sup> Finally, the restaurant De Eeuwige Jachtvelden was victim of hackers – first, the hackers caused a booking stop and then deliberately disrupted the order system of the restaurant.

Although there are no official figures, PricewaterhouseCoopers have estimated that in 1998 half of all fraud cases were committed via the Internet.

According to the CERT/CC statistics, in 1988, 6 incidents were reported. Ten years later this number has grown to 3,734 incidents. In 1999, the latter number almost tripled to 9,859 incidents; in 2000 21,756 incidents were reported; and in the first three months of 2001 there were 7,047 incidents reported.

Although there are no official statistics concerning cyber-crime, it seems that Dutch consumers distrust Internet shopping. Approximately 50% of Internet users say that they spend less money on-line because of possible misuse. More than one third of all Dutch consumers are concerned about computer viruses and fraud with personal information and credit card data. Also, companies think that not much is done to

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<sup>19</sup> Co-operation Group Audit Strategy Version 1, Privacy Audit Framework under the new Dutch Data Protection Act (WBP), April 2001, E:/ced/Netherlands/PrivacyAuditFramework.English.definitieve.versie.pdf, CD-Rom with CED Docs

<sup>20</sup> <http://www.minbzk.nl/e-overheid/1.3.asp> (visited on 21 March 2002)

<sup>21</sup> <http://www.american.edu/carmel/mb1626a/netherlands4.htm> (visited on 21 March 2002)

<sup>22</sup> [www.haagschecourant.nl](http://www.haagschecourant.nl), 6-3-2000

<sup>23</sup> [www.nu.nl](http://www.nu.nl), 11-5-2000, 26-7-2001, 10-4-2001

<sup>24</sup> Ministerie van V&W en Economische Zaken, Kwetsbaarheid op internet, juli 2001; Ministry of Transport and Ministry of Economic Affairs, Internet Vulnerability, July 2001

prevent cyber-crime attacks. The majority even think cyber-crime will only grow. Nevertheless the number of companies that sell products on-line has grown by 68 %.<sup>25</sup>

According to the NIPO (Market Research Institute), 70% of Dutch people believe that it is unsafe to leave personal information on the Internet sites of the government. This percentage is high compared to other international countries.<sup>26</sup>

### ***Government Initiatives Aimed at Tackling Cyber-Security***

The ambition of the Dutch government is to become one of the leading international players in the ICT field. To this end, the cabinet introduced the ICT policy paper 'De Digitale Delta' in the summer of 1999. In this report the government sets out a five-pillar approach to strengthen the ICT base in the Netherlands. One of the main concerns is trust in the information society. To gain trust, the Internet needs to be safe, secure, available and reliable. The Ministry of Transport in co-operation with the Ministry of Economic Affairs has introduced a policy document on 'Internet vulnerability'.

The government could be described as responsible for making the Internet secure and dependable. This involves adopting a supporting role as well as a more regulatory one. To fulfil this role, the government needs to follow closely developments on the Internet and the effectiveness of policy.

Telecom is a subdivision of the Ministry of Transport. DGTP (Directoraat Generaal Telecommunicatie en Post) is responsible for policymaking in the information and telecommunications field. Other Ministries are also involved in the ICT initiatives introduced by Central Government. All Ministries should share their information for example by the use of an Intranet. Another example of this, is the ICT organisation, ICTU - introduced to form a link between government organisations. ICTU helps with the formulation, performance and implementation of ICT programs aimed at the public sector. It also collectively carries out tasks that previously would have been contracted out by each government organisation.

The EU introduces most of the policy on the protection of the critical infrastructure. It sets a framework within which countries can make their own Internet and cyber-crime fighting policy. In the Netherlands, the government has introduced further lines of action to reduce vulnerabilities.

Firstly, there is the provision of information. Information must promote awareness and knowledge of risks, and make clear how these should be dealt with. An interdepartmental working group (Ministry of Transport and the Ministry of Economic Affairs) is already preparing an information campaign: 'Nederland gaat digitaal' (The Dutch go digital).

Secondly comes research and development. The objective is to promote the research and development of new methods and aids for ensuring the security of information. Research in the field of Internet dependability has a pre-eminent international dimension and it is therefore important that Dutch companies and research institutes participate in international research.

Thirdly, the security policy and measures taken within an organisation are of paramount importance - companies must be encouraged to implement effective information security. There is a *Code of Information Security*, obtainable from the Nederlands Normalisatie Instituut (Dutch Standards Institute). The code provides a broad selection of recommendations for the effective implementation of information security.

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<sup>25</sup> 290 companies were approached. [www.nu.nl](http://www.nu.nl), (visited on in 21 March 2002)

<sup>26</sup> NRC Handelsblad, 6th November 2001

Furthermore, an external auditor can certify organisations in the Netherlands on their correct implementation of security measures.

Fourthly, there is the confidentiality of information. This line of action has been set up to improve the confidentiality of messages sent by electronic communication. According to chapter 11 of the Telecommunications Act, providers of public telecommunications networks and services have a duty to give their best efforts to ensure the security of networks and services. This law protects the personal data and personal privacy of subscribers and users. Besides creating the legal framework, the government must define the other preconditions that best serve the achievement of confidential communication. Users can also encrypt their messages themselves. Finally the government can promote the use of cryptography through its own security policy, with the possibility of fall out to private parties. By developing e-government, the government can set an example in the use of effective cryptographic solutions, and therefore increase confidence in cryptographic products.

Fifthly is transparency resulting from data on quality. This is to enable the market to work better by promoting a general understanding of the quality of service of infrastructures and service providers. It can also provide a better (quantitative) insight into the availability of the Internet. The Ministry of Transport is encouraging providers to voluntarily carry out measurements of their availability and traffic themselves. To support this process, the Ministry has taken the initiative this year together with commercial parties, to stimulate the creation of unambiguous and uniform quality indicators, as well as methods and tools for making measurements. In addition to this the Ministry is considering whether and how agreements can be made with the relevant providers on the processing of measured data and the analysis of trends.

The sixth area is that of warning and incident response. The objective here is a timely exchange of reports and information on threats, weaknesses, and counter measures between (inter)national interested parties. It can also give better insight into the nature and extent of security incidents. The Ministry of Internal Affairs and Kingdom Relations is setting up a computer emergency response team (CERT) for the government. In co-operation with the Ministry of Transport, it is also investigating whether and how this CERT can perform a warning function for other sectors and the general public in the Netherlands, as a matter of social responsibility. A precondition for success is co-operation and agreement between foreign CERTs, which are largely (semi)-governmental organisations, and the Dutch private CERTs, such as those of KPN and SURFnet, which restrict their services to their own users.

The seventh priority is the integrity of information – that is, to improve the integrity of information that is communicated or stored electronically. The availability of good Trusted Third Party (TTP) services is one way of achieving this. The government has already set up a TTP policy: Beleidsnotitie Nationaal TTP-project. In January 2000, the European Parliament published a European directive on electronic signatures. Both the policy documents and the directive contain requirements that must be met by a TTP. One of the requirements is concerned with the availability of TTP services, to prevent the failure of this critical Internet component. In the policy document, the cabinet states that a voluntary certification scheme will be set up which will make it possible to test whether TTPs meet the set requirements. The directive also requires each member state to set up a monitoring system for specific TTPs mentioned in the directive. In the Bill that implements the EU directive, the OPTA (independent Post and Telecommunications Authority) is appointed as the supervisory organisation. The government has a role as launching customer for TTP service providers. The Ministry of Internal Affairs and Kingdom Relations introduced a project called PKI-overheid (Public Key Infrastructure Government); an evaluation of the TTP policy is planned for 2003.

Finally, there is cyber-crime. The aim of this line of action is the protection of society against computer crime. Today there are an increasing number of digital traces. As a result, there is ever more work for specialist digital detectives. Police officers must be able to recognise opportunities for digital investigation, and must be able to safeguard digital traces during their normal duties. The board of police commissioners has announced that during the coming years knowledge about the tracking cyber-crime will be enlarged on a regional and local scale. The board of police commissioners will also stimulate the use of external expertise on cyber crime.<sup>27</sup> The Public Ministry will soon get an expertise centre that will support the Public Ministry in the fight against cyber-crime. This centre will support national and international cases. 470 public prosecutors will also become trained to enlarge their computer knowledge.<sup>28</sup>

The criminologist Geert van Rossum has concluded that the Netherlands is not sufficiently aware of all the risks involving Internet dependability. According to van Rossum politicians are more interested in the positive things the Internet brings - they do not have much of an eye for the dark side that comes with the positive. As an example, van Rossum points to the policy document 'the Digital Delta' which emphasises stimulating economic growth by using the Internet. Terms like 'safety of' and 'supervision on' the Internet are not mentioned at all in the document.<sup>29</sup> However, in July 2001, the Ministry of Transport produced a policy document on Internet Vulnerability. The above action lines are derived from the latter document.

Following the September 11 terrorist attack, the Dutch government has decided to step up its activities in the area of critical infrastructure protection. Following the drafting a comprehensive anti-terrorism plan in October 2001, in January 2002 the Dutch government has decided to launch a Critical Infrastructure Protection Plan calling for more action in the areas of public-private partnerships, standard and metrics development and risk analysis and management. In February 2002, the national laboratory TNO was tasked to carry out a quick scan to examine the vital interdependencies among the different sectors. The main conclusion was that there seem to be a comprehensive assessment of how it is possible to foster security quality control of the country's critical infrastructures through instruments like legislation and regulation. One of the first tangible results has been the establishment of the CERT Rijksoverheid, whose activities are devoted mainly to the public sector. In addition, a Hackers Emergency Response Team was launched. It allows for the national police to request official assistance to the private industry in the areas where it lacks expertise. Particular emphasis is given to the field of computer and network criminal forensics.

### ***Industry and Other Non-Government Activities Related to Dependability***

ISOC.nl is the Dutch chapter of ISOC. It was founded in 1997 by a group of prominent Internet users. ISOC.nl is actively involved in achieving and promoting Internet standards, researching the use of the Internet in democratic and governmental processes and keeping the discussion within and around the Internet community alive. One of the most important tasks of ISOC is to develop and stimulate Internet standards and protocols so that the Internet will become and stay stable.

ISOC is the mother organisation for a few international organisations which investigate, develop or stimulate Internet standards and protocols: [IETF](#) (Internet Engineering Task Force), [IAB](#) (Internet

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<sup>27</sup> <http://nu.nl/document?n=37289>, (visited on 18 July 2001)

<sup>28</sup> <http://nu.nl/document?n=45231>, (visited on 24 October 2002) Ministry of Transport, Public Work and Water Management and the Ministry of Economic Affairs, [Internet Vulnerability, working together towards better security and dependability](#), July 2001

<sup>29</sup> <http://nu.nl/document?n=6101>, (visited on 4 January 2002)

Architecture Board), [IESG](#) (Internet Engineering Steering Group) en [IRTF](#) (Internet Research Task Force). Also [IANA](#), the Internet Assigned Numbers Authority, falls under ISOC.

ISOC.nl published a White Paper in which the views of different experts regarding the Internet were set out. In this way they try to make a contribution towards a responsible Internet policy. Many companies support the work of the Internet Society, for example ABN Amro (bank), Casema (cable company), and the Dutch Consumers Union etc.<sup>30</sup>

Another private initiative is called Safe Internet Foundation (SIF). The foundation was established in 1999 by the Internet Society. The idea came from Jan Baan who wanted to stimulate the development of safe Internet solutions for companies. The Foundation gives companies advice on how to use the Internet in a safe way and also wants to hand solutions to companies so the latter can protect themselves against viruses and other integrity attacks. The SIF wants to co-operate with as many other parties, also interested in introducing Internet safety initiatives, as possible. Participants include ECP.NL, ISOC.nl, and The Union of Dutch Internet Providers (NLIP).<sup>31</sup>

Security.nl is established and maintained by a group of specialists in the field of information security. The mission of Security.nl is to make electronic safety a policy issue, a company and industry issue and a private issue. To obtain this Security.nl publishes relevant articles on information safety.<sup>32</sup>

KPN is also active in providing a security service for its customers, called Uni-CERT. As a part of the KPN Telecom Internet Service, Uni-Cert aims to help its customers improve their system and network security. Its primary purpose is to provide a mechanism for institutions within the Uni-CERT constituency, to deal with computer security problems and their prevention. Uni-CERT acts as a single trusted point of contact for its customers to help improve their system and network security. Uni-CERT is a member of the Forum of Incident Response and Security Teams (FIRST) and has contacts with other FIRST organisations, the [Co-ordination Centre \(CERT/CC\)](#), other national and foreign CERT's, vendors and with the Dutch police. Uni-CERT is not a legal entity.<sup>33</sup>

A Dutch newspaper, the NRC, has a dossier on the Internet about leaks, cracks and tips to surf safe on the Internet and keep hackers out. They also present an overview of sites, books and films in the field of privacy, computer security and hacking.<sup>34</sup>

### ***Public-Private Partnerships***

In the Netherlands there is a platform called ECP.nl (Electronic Commerce in the Netherlands). This platform is a public-private initiative that consists of different market parties, the government and independent experts. Their common target is to enhance the competition force of Dutch business life. ECP.nl helps to create conditions, which will assist e-Commerce in taking a leading role in Dutch business life. ECP.nl facilitates a project called TTP.NL (Trusted Third Parties.NL). The purpose of this project is to develop and control single meaning and broad carried criteria for reliable electronic messages. To

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<sup>30</sup> <http://community.isoc.nl>,  
<http://community.isoc.nl/forum/links.php?node=01/04/25/9534544> (visited on 21 March 2002)

<sup>31</sup> <http://www.veiligophetweb.nl/> (visited on 21 March 2002)

<sup>32</sup> <http://www.security.nl/> (visited on 21 March 2002)

<sup>33</sup> <http://www.uni-cert.nl/> (visited on 21 March 2002)

<sup>34</sup> <http://www.nrc.nl/W2/Lab/Beveiliging/inhoud.html> (visited on 21 March 2002)

enhance the trust in TTP's by self-regulation, restrictions within the TTP.nl project are elaborated in criteria, which form a base for the certification of a TTP.<sup>35</sup>

On 6 April 2000, Minister van Boxtel of Internal Affairs put into action a project called "Digitaal Trapveld". With this project Minister van Boxtel aims to stimulate the use of the Internet amongst people in neighbourhoods that are given extra policy attention. The government cannot achieve the set of goals on its own, so 11 companies support the project by giving hard- and software. These companies include Cisco, IBM and KPN.<sup>36</sup>

In the Netherlands there is also a CERT-group (Computer Emergency Response Team). The constituency (doelgroep) of CERT-NL are the SURFnet connected institutions - the network for research (e.g. TNO) and higher education (e.g. University of Leiden) in The Netherlands. In Internet terms, SURFnet is the main Dutch Internet regional computer network. Besides the protection on the network level, users can also protect their communication themselves. They can use protected e-mail and/or digital certificates. SURFnet supports the use of these applications by a Public Key Infrastructure (PKI) and is the third party, which on request can confirm the identity of an Internet user. SURFnet implements advice given by international network organisations, to be updated on the latest security issues at anytime.<sup>37</sup>

EPN (Electronic highway Platform, The Netherlands) is an independent organisation to enhance the social adoption of ICT made of public officials, industry representatives and members of the academic world.<sup>38</sup> Moreover, the national information centre Information Safety (Informatiebeveiliging.nl) is an initiative of the division IT and Criminality of the Nation Platform Crime control (NPC). The NPC is a public private initiative of the Ministry of Justice and the VNO (Association of Dutch Enterprises). The Internet site of Informatiebeveiliging.nl gives advice and spreads information on information security to enhance the consciousness and defensibility of companies, institutions and the government, in order to prevent the misuse of the Internet and ICT-crime.<sup>39</sup>

### ***Research and Development***

TNO-FEL has made several studies about the Netherlands critical infrastructures and the protection of these infrastructures. These studies include 'In Bits and Pieces: The vulnerability of the Netherlands ICT-infrastructure and the consequences for society' (March 2000); 'KWINT: digital E-deltaplan study on the vulnerability of the Netherlands (part of) the Internet' (Study together with Stratix Consulting Group. July 2001); and 'The Vulnerable Internet: A study of the critical infrastructure of (the Dutch portion of) the Internet'. Several papers have also been presented at, for example, the 5<sup>th</sup> International Conference on Technology, Policy and Innovation ("Critical Infrastructures" Delft2001, TUDelft, June 26-29, 2001); the Information Warfare conference, Lucerne, Switzerland (November 2001); and at InfoWarCon 2001, Washington D.C. (September 2001).

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<sup>35</sup> [www.ecp.nl](http://www.ecp.nl) (visited on 21 March 2002)

<sup>36</sup> [www.minbzk.nl](http://www.minbzk.nl) (visited on 21 March 2002)

<sup>37</sup> [www.SURFnet.nl](http://www.SURFnet.nl) (visited on 21 March 2002)

<sup>38</sup> <http://www.epn.net/overepn.html>, <http://www.epn.net/brochure.html> (visited on 21 March 2002)

<sup>39</sup> [www.Informatiebeveiliging.nl](http://www.Informatiebeveiliging.nl), <http://www.veiligophetweb.nl/?page=11&typeid=14&object=2349> (visited on 21 March 2002)

The expertise of TNO-FEL Security comprises Information Security, Infrastructure security, Application security, Privacy protection, and evaluation of security products. TNO is partly funded by the Ministry of Education and the Ministry of Defence.<sup>40</sup>

Another organisation that performs R&D is TELIN - the initiative for the Telematica Instituut Consortium started in 1998. The government sent out an open tender and in 1998 the consortium was settled. The Telematica Instituut bundles the forces of different knowledge institutions and builds a bridge between the government and companies. One of its prime tasks is to translate fundamental research to market approach applications in the field of ICT. Examples of knowledge fields of the consortium are multi media, electronic commerce, mobile communication and network technology, tele-education and computer supportive co-operation and knowledge management. With the support of ICT, innovations and the competition position can be enlarged. Besides this, ICT can also positively influence the quality of the environment.<sup>41</sup>

GigaPort is an initiative of the Ministry of Economic Affairs, Ministry of Transport and Ministry of Education, Culture and Science. Giga-Port was founded to improve the capacity of the communication infrastructure for higher education and research. GigaPort-Applications create a knowledge platform concerning new high-quality ICT applications and offer companies and institutions the opportunity to carry out pilot projects. Also GigaPort oversees new Internet2 and Next Generation Internet activities in the USA. The purpose of GigaPort is to strengthen the knowledge infrastructure. Because of the increasing possibilities for communication, an expansion of the reach of other sectors, such as the service and transport sectors is possible. The government has provided 73.5 million EUROS for the development of the GigaPort-Network and to acquire knowledge and gain experience of GigaPort-Applications. The GigaPort project organisation is accommodated at Stichting SURF (see above).<sup>42</sup>

In a policy document entitled 'The Knowledge Economy within Sight' several trial projects are mentioned where the Netherlands could play a leading role. These include embedded and distributed systems - European co-operation is necessary to compete with Japan and the US and the enlarging relevance of these technologies demand an expansion of the Dutch expertise in a European context; Digital archiving internationally; ICT applications for mobility - for Intelligence Transport systems (ITS) and Automatic Guided Vehicles (AGV) in the field of people and freight transport; and Micro system technology and nano technology.

The Netherlands are advanced also in the domain of crisis and risk management thanks to the leadership of the Crisis Research Centre based at the University of Leiden. This same institution is also the leader of European Crisis Management Academy, an organisation whose objective are to foster similar research activities at the European level.

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<sup>40</sup> <http://www.tno.nl/instit/fel/ts/exp/security.html>,  
<http://www.tno.nl/instit/fel/refs/pub2001.html#div3>, (visited on 21 March 2002)  
<http://www.tno.nl/instit/fel/ts/prj/critical-infrastructure-protection.html>, (visited  
on 21 March 2002)  
<http://www.tno.nl/instit/fel/intern/wkiwar7.html>,  
[http://www.tno.nl/instit/fel/refs/pub2001/kwint\\_paper1048.pdf](http://www.tno.nl/instit/fel/refs/pub2001/kwint_paper1048.pdf) (visited on 21 March 2002)

<sup>41</sup> <http://www.telin.nl/>, <http://extranet.telin.nl/Instituut/Consortium/index.htm> (visited  
on 21 March 2002)

<sup>42</sup> <http://www.gigaport.nl>] (visited on 21 March 2002)

To keep in line with the European Council, the Dutch government have decided to invest 466 million EUROS in ICT research and innovation over the years 2000 - 2010. The final goal is to have a high worthy, accessible, affordable and safe electronic (telecom) infrastructure. <sup>43</sup>

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<sup>43</sup> Tweede kamer der Staten-Generaal, Nota 'De Kenniseconomie in zicht'; de Nederlandse invulling van de 'Lissabon-agenda', vergaderjaar 2000-2001, 27 406, nrs. 1-2; Second Chamber of the State- General, The knowledge economy insight, the Dutch completion of the Lissabon-agenda, meeting year 2000-2001, 27406, nrs. 1-2