

Use of ICT in Nordic enterprises 2000/2001



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Abstract

Use of ICT in Nordic enterprises 2000/2001

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This report describes the use of Information and Communication Technology (ICT) in Nordic enterprises with at least 10 enterprises in 2000. Use of Internet was widespread among Nordic enterprises by the end of 2000. About 10 per cent of all enterprises in Denmark, Finland, Norway and Sweden had Internet sales. Internet sales mean that at least 1 per cent of total turnover is received via homepage. However, the results in this report show that the volumes of electronic commerce were still low. In most areas, Norway seemed less progressive than the other Nordic countries.

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Preface

This publication contains information about the use of Information and Communication Technology (ICT) in Nordic enterprises in 2000. The use of ICT in enterprises is expected to exert a major impact on profitability, productivity and employment levels. International comparisons are becoming increasingly more important as ICT usage is generally considered to be a critical factor contributing to national performance on both micro and macro economic level. Benchmarking ICT performance against other countries is seen as a key issue in an Information Society characterised by increasing globalisation.

National statistical offices are experiencing high or growing demands for ICT statistics. As a consequence of these demands, the director generals of the five Nordic statistical institutes in November 1999 decided to set down a Nordic group for development of statistics on the Information Society. Among the responsibilities of this group are the preparations and publishing of statistical publications comprising different aspects of the Information Society based on harmonised definitions and concepts.

The common Nordic approach was first tested in Denmark and Finland with a questionnaire based survey of enterprises. A Danish-Finnish publication describing ICT usage in the two countries was published early in 2000. Later also Norway and Sweden carried out similar surveys. This publication is based on surveys done in Denmark and Norway late in 2000, in Finland the survey was conducted early in 2001 and in Sweden in spring 2001. The collection of data was thus done within a time span of approximately six months. One consequence is that the Swedish expectations for 2001 include the alternatives "Already implemented 2001" and "Planned 2001", and are therefore more certain than data from surveys conducted in 2000.

The reference year of the publication is 2000. The expectations of the enterprises for 2001 are mentioned a few times in this publication. These expectations only show the assessments of the enterprises and should in no way be interpreted as a prognosis issued by the national statistical institutes. The gross samples in Denmark, Finland, Norway and Sweden consisted of about 4000 enterprises. Even though a largely harmonised questionnaire was applied some of the national differences might be explained by different coverage of the surveys and dissimilar linguistic interpretations. Statistical offices are constantly following the ICT usage to develop better tools for measurement.

Statistics Denmark, Statistics Finland, Statistics Norway and Statistics Sweden have already published national reports that described the use of ICT in enterprises. The national publications used another framework than this report and thus the results presented here will also be different. In this report some further harmonisation of the national surveys have been done to make benchmarking possible. If not otherwise is explicitly stated the figures and tables show the situation of all private enterprises in the national populations with at least 10 employees (some industries were not included in the harmonised samples).

Hopefully this report will contribute towards better knowledge of the use of ICT in enterprises. This report is an outcome of the work of the Nordic working group on Information Society statistics. The publication is available via the homepages of the national statistical offices: www.dst.dk, www.stat.fi, www.ssb.no and www.scb.se. The work has been co-ordinated by Statistics Norway and the publications has been elaborated by the following persons:

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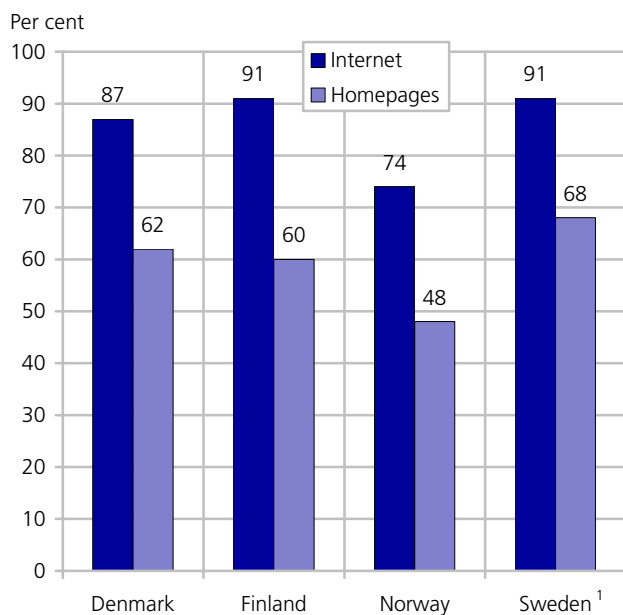
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1. Main findings

Use of Internet was widespread in Nordic enterprises by the end of 2000. Figure 1.1 shows that Internet connections were most frequent in Finland and Sweden while the use of homepages was most common in Sweden. Norway seemed less progressive than Denmark, Finland and Sweden.

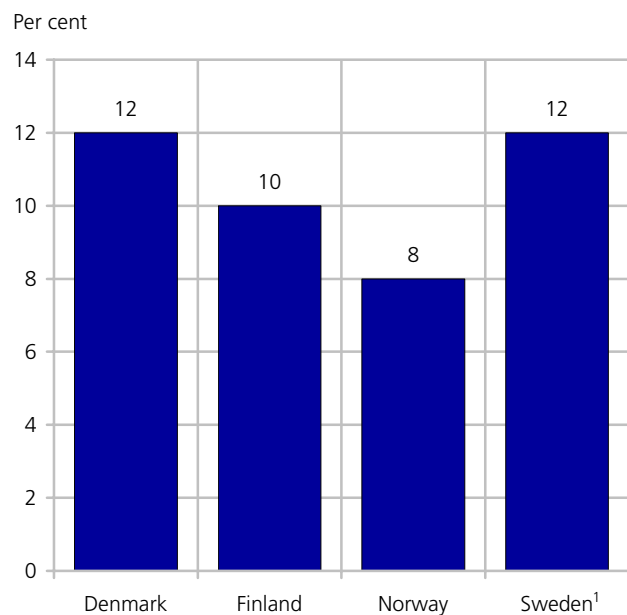
By the end of 2000 between 8 and 12 per cent of all enterprises in the four Nordic countries made at least one per cent of total turnover from orders received via homepages (see figure 1.2).

Figure 1.1. Internet accesses and homepages among all enterprises by the end of 2000. Per cent



¹ The Swedish sample excluded Construction.

Figure 1.2. Share of all enterprises with Internet sales. 2000. Per cent



¹ The Swedish sample excluded Construction.

2. Internet penetration

This chapter will present the Internet penetration rate among Nordic enterprises. The distributions of Internet accesses follow somewhat different patterns in the four countries. Still, the Internet penetration rate is everywhere dependent on the size of the enterprises. The relative number of Internet accesses was higher in the largest enterprises than among the smaller ones in all the countries.

Construction was included in the Danish, Finnish and Norwegian surveys while the Swedish survey excluded this industry. Figure 2.1 shows that by the end of 2000 Internet connections were most frequent in Finland and Sweden. 91 per cent of all Finnish and Swedish enterprises with at least 10 employees had access to the Internet by the end of 2000. Enterprises in Denmark were not far behind. Norwegian enterprises were the least advanced. 74 per cent of Norwegian enterprises with at least 10 employees had Internet access by the end of 2000.

In Sweden the industry construction was excluded from the survey. The exclusion of this industry also from the Danish, Finnish and Norwegian samples did not radically change the results concerning Internet penetration. Without construction respectively 92, 91, 89 and 73 per cent of the enterprises in Finland, Sweden, Denmark and Norway had Internet access by the end of 2000 (see figure 2.2).

The share of Internet accesses is dependent on the size of enterprises. The relative number of Internet accesses was higher in the largest enterprises than among smaller ones everywhere. By the end of 2000 almost all enterprises with at least 100 persons employed had access to the Internet in Denmark, Finland and Sweden. The Internet penetration rate was not much lower in smaller enterprises. In enterprises with 10-19 persons employed the relative number of Internet accesses was between 80 and 90 per cent in these three countries. The Internet penetration rate in

Figure 2.1. Share of all enterprises with Internet access. 1999-2001. Per cent

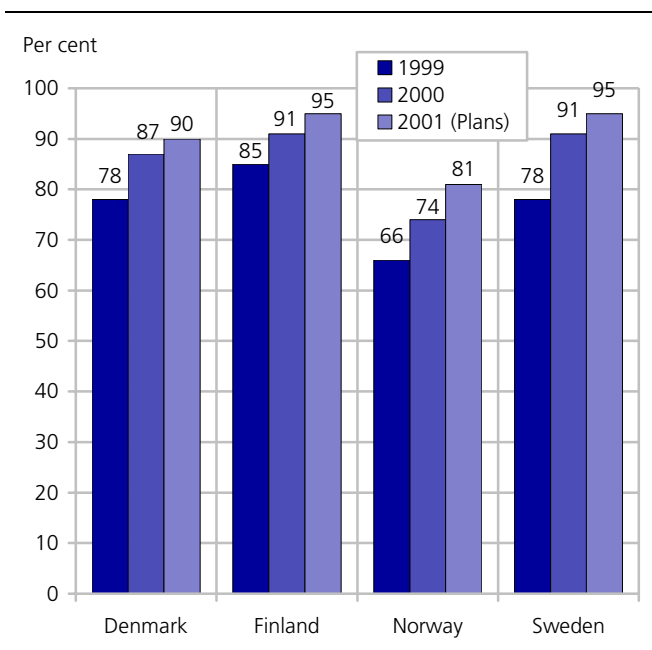


Figure 2.2. Share of all enterprises with Internet access. Construction is excluded in all countries. 2000. Per cent

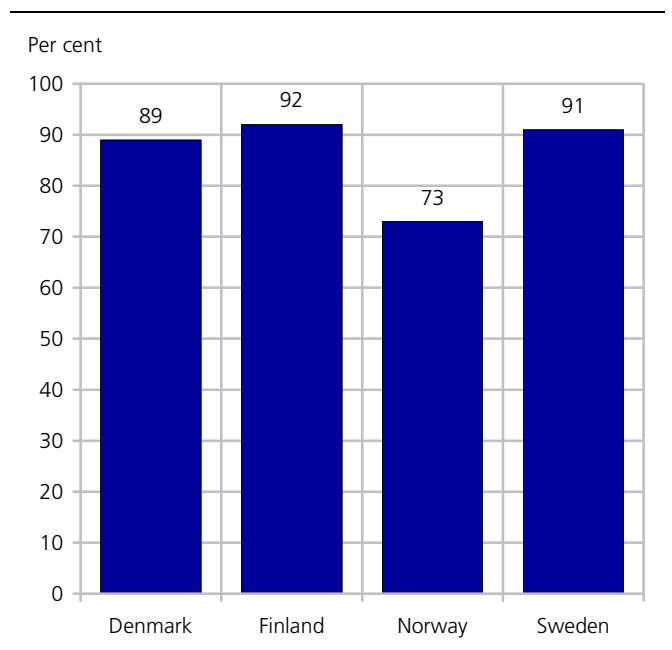
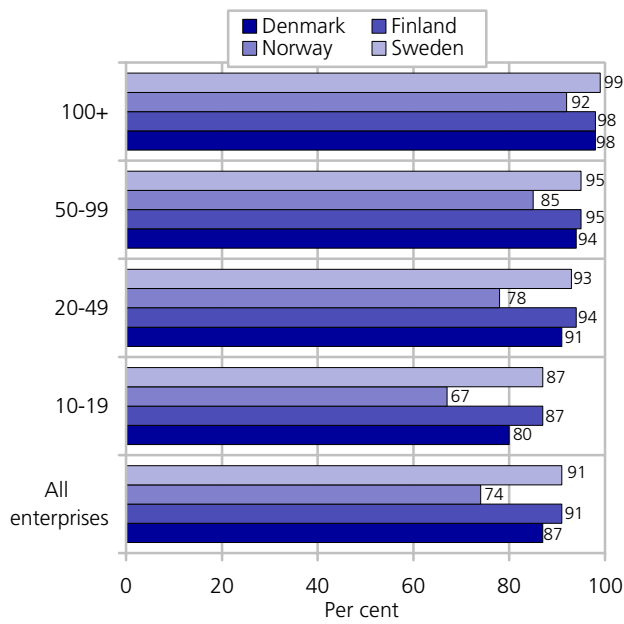


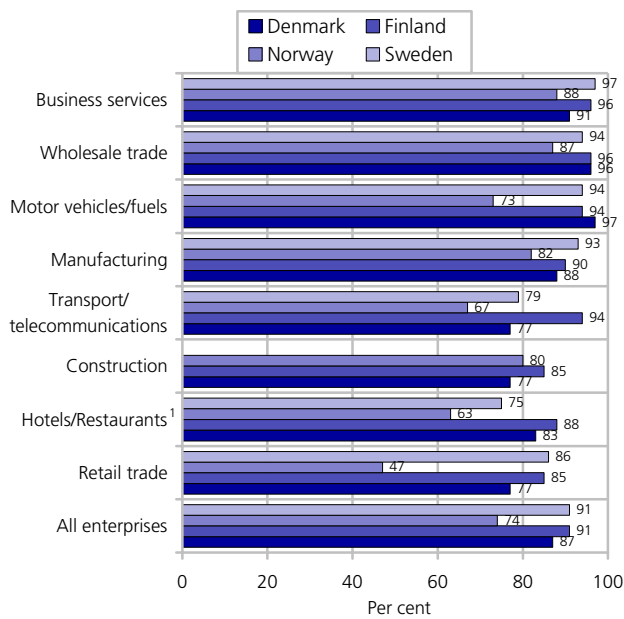
Figure 2.3. Share of all enterprises with Internet access. Distributed by employment. 2000. Per cent



Norwegian industry was different. Norway had an Internet penetration rate about 10-15 per cent below enterprises in Denmark, Finland and Sweden (see figure 2.3).

Figure 2.4 shows some distinctive national differences in the Internet penetration rate of Nordic industry. The difference between Retail trade enterprises in Denmark, Finland and Sweden and Norwegian Retail trade enterprises was especially striking. In Retail trade respectively 86, 85, 77 and 47 per cent of the enterprises in Sweden, Finland, Denmark and Norway had Internet access by the end of 2000. Variations in the response rates between the industries create uncertainty.

Figure 2.4. Share of all enterprises with Internet access. Distributed by area of industry. 2000. Per cent



¹ Construction was not included in the Swedish sample.

3. Homepages

Enterprises were asked if they had established homepages and for what purposes they were used. By the end of 2000 between 60 and 70 of all enterprises with at least ten employees in Denmark, Finland and Sweden had established a homepage while about half of the Norwegian enterprises had one. Everywhere large enterprises operated homepages more often than small ones. Business services in Sweden had the highest share of enterprises with homepages while the share was lowest among Norwegian Retail trade enterprises.

Homepages common among Nordic enterprises

Construction was included in the Danish, Finnish and Norwegian surveys while the Swedish survey excluded this industry. It was most common to have a homepage in Sweden. Almost 70 per cent of all Swedish enterprises with at least ten employees had established a homepage by the end of 2000. In Denmark, Finland and Norway 62, 60 and 48 per cent of the enterprises had homepages. According to the enterprise's expectations, they will experience an increase in the number of homepages in 2001 (see figure 3.1).

Figure 3.1. Share of all enterprises with homepage. 1999-2001. Per cent

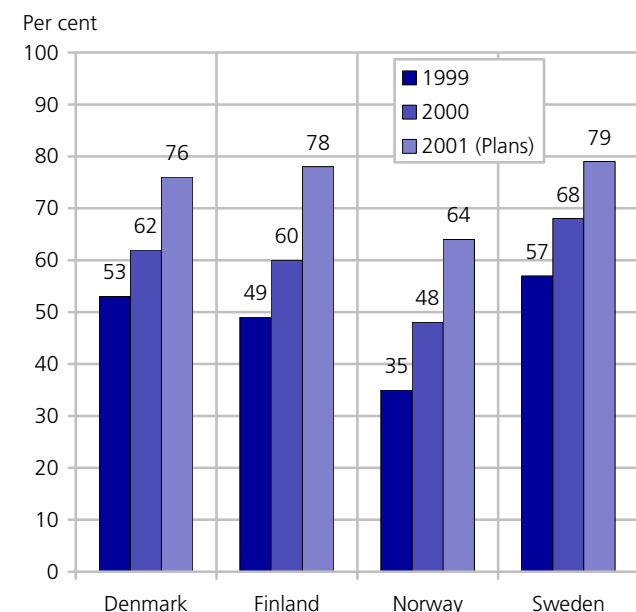


Figure 3.2. Share of all enterprises with homepage. Construction is excluded in all countries. 2000. Per cent

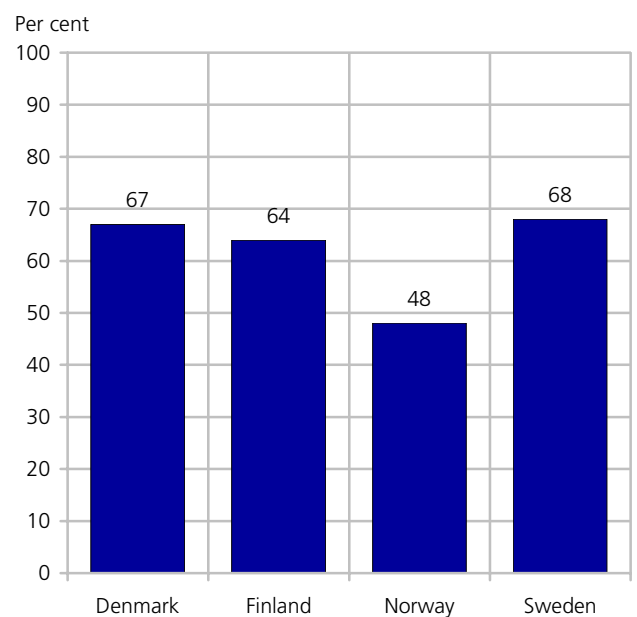
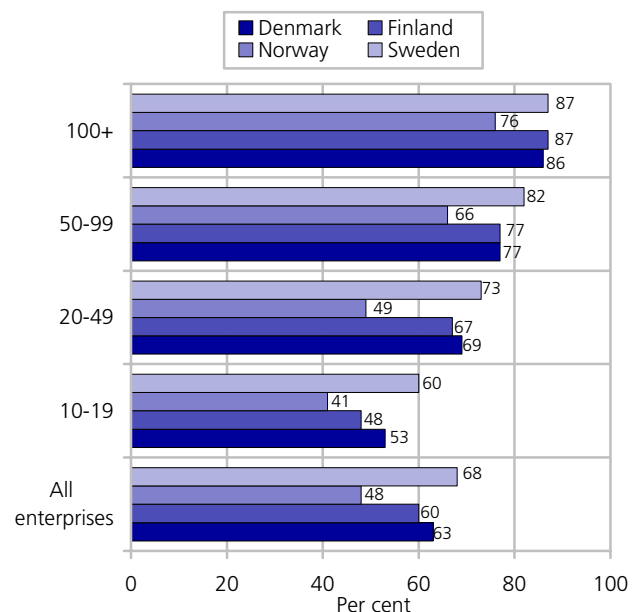


Figure 3.3. Share of all enterprises with homepages. Distributed by employment. 2000. Per cent



In Sweden the industry construction was excluded from the survey. The exclusion of this industry also from the Danish, Finnish and Norwegian samples changed the results in both Denmark and Finland. Without construction respectively 68, 67, 64 and 48 per cent of the enterprises in Sweden, Denmark, Finland and Norway had homepages by the end of 2000 (see figure 3.2).

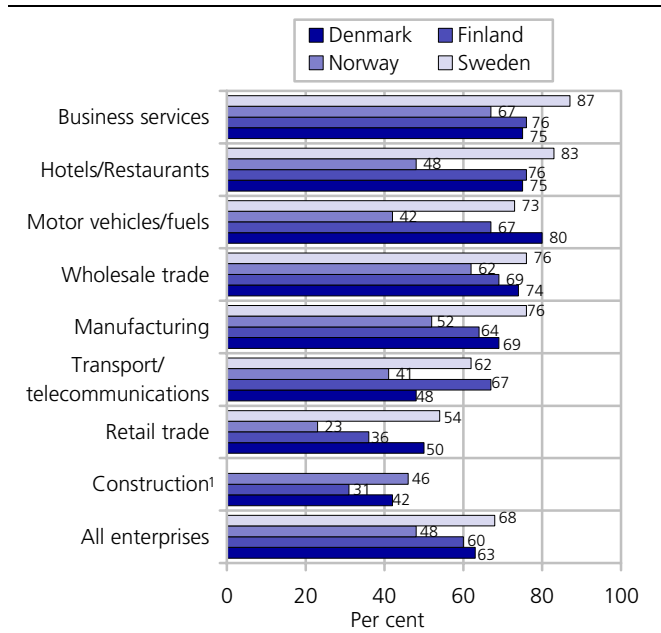
Figure 3.3 shows that the distribution of homepages varied a lot with the size of the enterprises. The relative number of enterprises with homepages was higher in the largest enterprises than among the smaller ones everywhere. In Sweden the share of enterprises with homepages was high in all size groups. By the end of 2000 60 per cent of Swedish enterprises with 10-19 employees had a homepage against 53, 48 and 41 per cent of similar enterprises in Denmark, Finland and Norway. Among enterprises with at least 100 employees there also existed differences. In Sweden, Finland and Denmark almost 90 per cent of all enterprises with at least 100 employees had homepages. In Norway three out of four enterprises in the same size group operated a homepage.

Figure 3.4 shows some clear national differences in the distribution of homepages in Nordic industries. The differences were e.g. large in Retail trade. In Danish and Swedish retail trade the relative number of enterprises with homepages was more than twice the figure of the Norwegian Retail trade. The share of enterprises with homepages in the Retail trade in respectively Sweden, Denmark, Finland and Norway was 54, 50, 36 and 23 per cent. Variations in the response rates between the industries create uncertainty.

Homepages mostly used for marketing

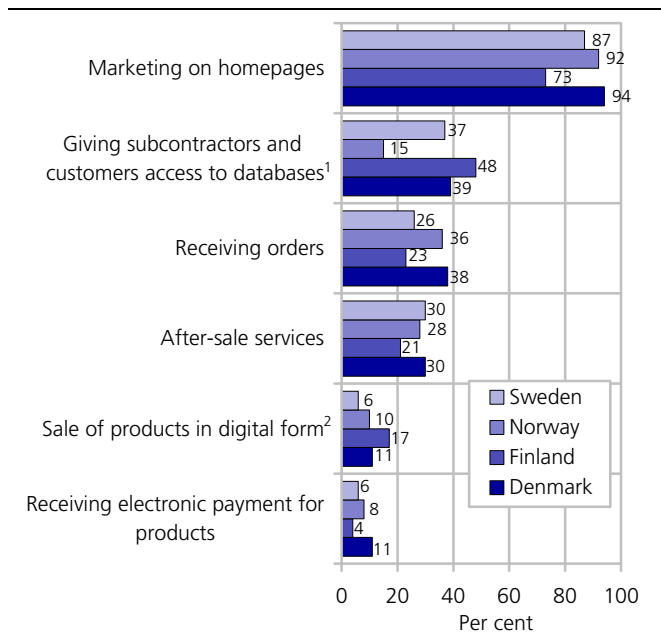
Figure 3.5 shows that everywhere the most important area of use was marketing. By the end of 2000 between 70 and 90 per cent of the enterprises in the Nordic countries used their homepages for this purpose. Relatively few enterprises received orders via homepages. In Denmark, Norway, Sweden and Finland respectively 38, 36, 26 and 23 per cent of the enterprises received orders via their homepages by the end of 2000.

Figure 3.4. Share of all enterprises with homepages. Distributed by area of industry. 2000. Per cent



¹ Construction was not included in the Swedish sample.

Figure 3.5. Use of homepages. Enterprises with homepages. 2000. Per cent



¹ The Finnish survey asked, "Customers able to browse product catalogues, price lists, etc".

² The Finnish survey asked, "Delivery of goods in electronic form".

4. Intranets and Extranets

Figure 4.1 show that 43 per cent of all Swedish enterprises with at least 10 employees had an Intranet by the end of 2000. In Finland and Denmark respectively 29 and 26 per cent of the enterprises had established an Intranet. Norwegian enterprises were least advanced. 22 per cent of all Norwegian enterprises had an Intranet by the end of 2000. The differences can partly be explained by variations in industrial structure and size of the enterprises between the countries. The expectations for 2001 were high everywhere. While about 30 percent of the enterprises in Denmark, Finland and Norway expected to have Intranets by the end of 2001 over 50 per cent of all Swedish enterprises expected to establish Intranets during this year.

The relative number of enterprises with Intranets was higher in the largest enterprises than among smaller ones everywhere. By the end of 2000 more than half of all Nordic enterprises with at least 100 persons employed had Intranets. Not surprisingly, in enterprises with 10-19 persons employed the relative number of Intranets was much lower (see figure 4.2).

Figure 4.1. Share of all enterprises with Intranet. 1999-2001. Per cent

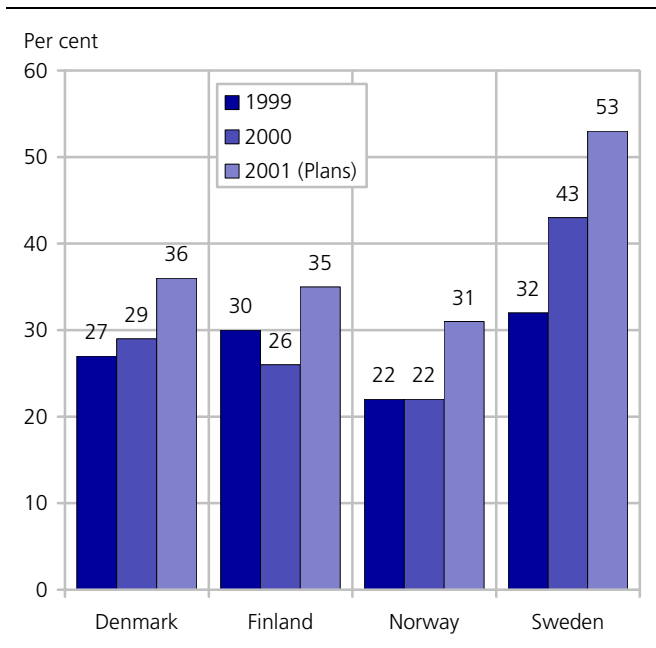


Figure 4.3 shows some national differences in the distribution of Intranets in Nordic industry. There were clear differences between hotel and restaurant enterprises in Denmark, Finland, Sweden and Norwegian hotel and restaurant enterprises. In this industry respectively 32, 23, 20 and 10 per cent of the enterprises in Denmark, Sweden, Finland and Norway had Intranets by the end of 2000. Variations in the response rates between the industries create uncertainty.

Figure 4.4 shows that Extranets were not common among Nordic enterprises. 19 per cent of all Danish enterprises with at least 10 employees had an Extranet by the end of 2000. Enterprises in Sweden and Finland were not far behind with 17 and 13 per cent. Norwegian enterprises were the least advanced. By the end of 2000 9 per cent of all Norwegian enterprises had established an Extranet. In all the four countries enterprises expected an increase in the number of Extranets in 2001.

Figure 4.2. Share of all enterprises with Intranet. Distributed by employment. 2000. Per cent

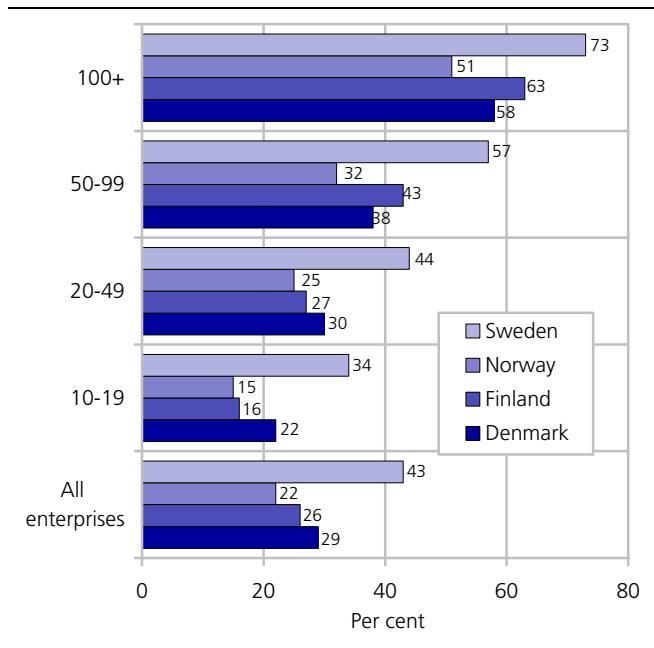
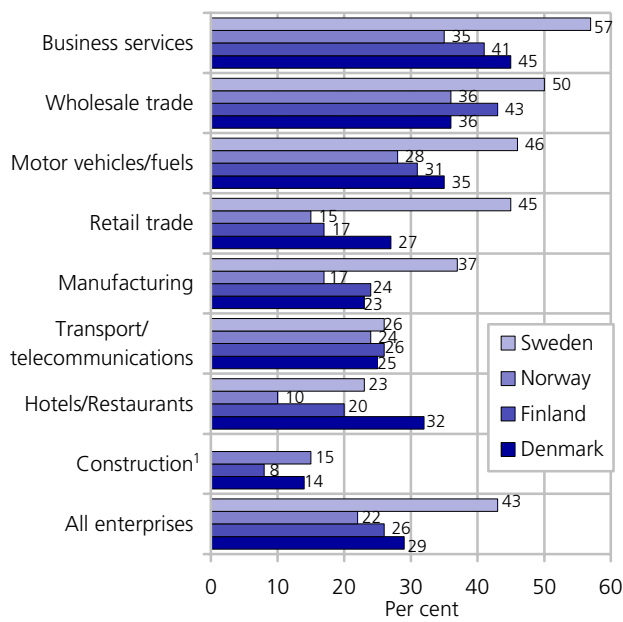


Figure 4.3. Share of all enterprises with Intranet. Distributed by area of industry. 2000. Per cent



¹ Construction was not included in the Swedish sample.

Figure 4.5. Share of all enterprises with Extranet. Distributed by employment. 2000. Per cent

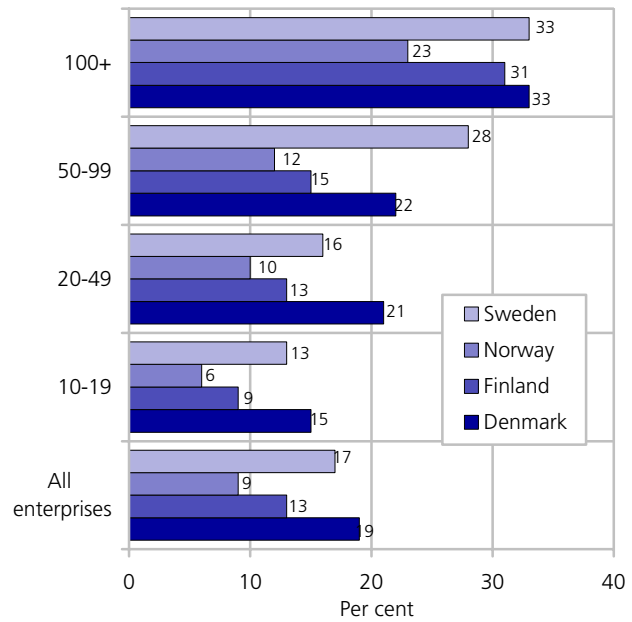


Figure 4.4. Share of all enterprises with Extranet. 1999-2001. Per cent

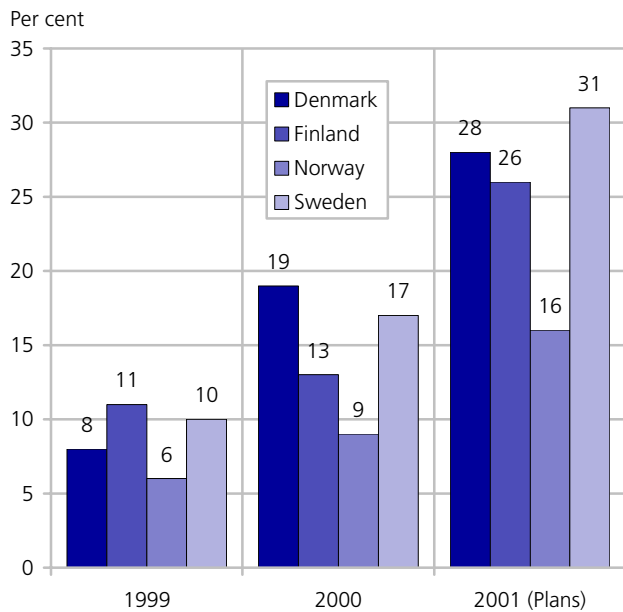
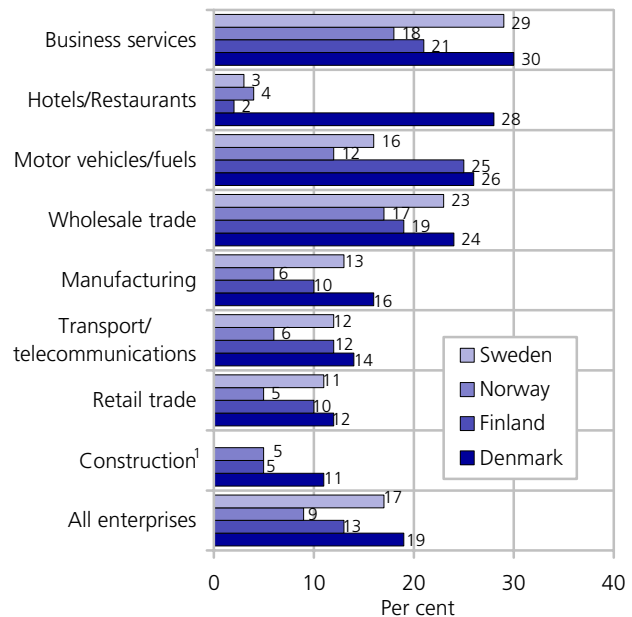


Figure 4.6. Share of all enterprises with Extranet. Distributed by area of industry. 2000. Per cent



¹ Construction was not included in the Swedish sample.

Extranets was more common among the largest enterprises than among smaller ones everywhere. By the end of 2000 about one third of all Danish, Finnish and Swedish enterprises with at least 100 employees had Extranets against two out of ten Norwegian enterprises (see figure 4.5).

Figure 4.6 shows some national differences in the distribution of Extranets in Nordic industry. There existed striking differences between hotel and restaurant enterprises in Denmark and the Finnish,

Swedish and Norwegian hotel and restaurant enterprises. In this industry respectively 28, 4, 3 and 2 per cent of the enterprises in Denmark, Norway, Sweden and Finland had Extranets by the end of 2000. Variations in the response rates between the industries create uncertainty.

5. Use of Internet

The enterprises with access to Internet were asked for which purposes they were using Internet. This chapter illustrates the frequency of the different purposes of Internet use in 2000 in Danish, Finnish, Norwegian and Swedish enterprises.

General purposes

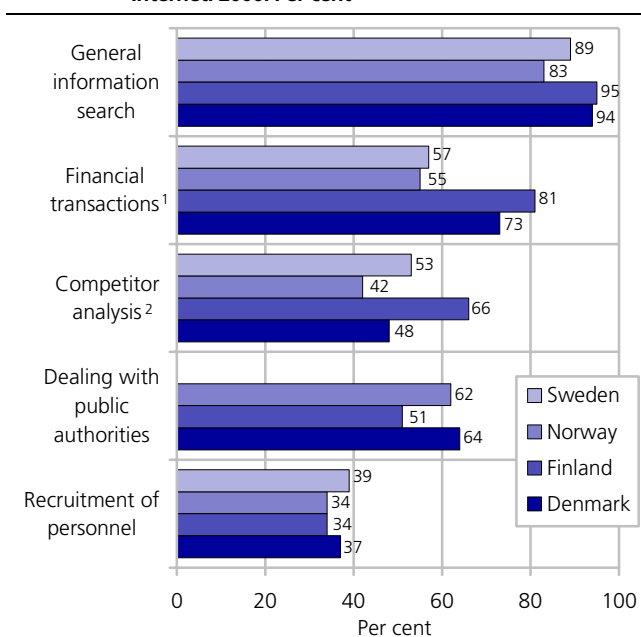
The pattern of Internet usage for general purposes looks relatively similar in all the four countries. However, there are some minor differences. Figure 5.1 illustrates the pattern of general Internet use among enterprises with Internet access in Denmark, Finland, Norway and Sweden by the end of 2000. Everywhere general information search was the most common task carried out with the help of Internet. About 90 per cent of the enterprises in Denmark, Sweden and Finland and about 80 per cent in Norway used the Internet for this purpose. In Denmark financial transactions via the Internet were more common than in Norway and Sweden. While only about 55 per cent of the Swedish

and Norwegian enterprises conducted financial transactions via the Internet over 70 per cent of the enterprises in Denmark had exploited this possibility. Enterprises in Finland used the Internet less than other Nordic enterprises to communicate with public authorities. 51 per cent of Finnish enterprises reported to deal with public authorities via the Internet against approximately 60 per cent of the Danish and Norwegian enterprises. The Swedish survey lacked this variable.

The enterprise as customer

Information search was also the most important use of Internet by the enterprises as customers. Figure 5.2 shows that by the end of 2000 between 70 and 80 per cent of the enterprises with Internet access searched for information on the homepages of suppliers. In Denmark, Finland and Norway less than 20 per cent of the enterprises used the Internet for actual payments. In Sweden the corresponding number was 55 per cent.

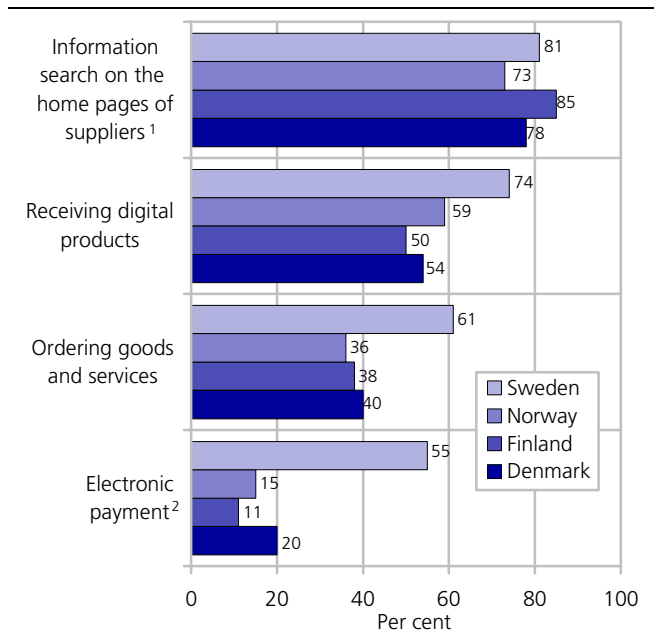
Figure 5.1. Internet usage for general purposes. Enterprises with Internet. 2000. Per cent



¹ Finland asked, "Bank transactions".

² Finland asked, "Monitoring competitors".

Figure 5.2. The Internet usage of the enterprises as customers. Enterprises with Internet. 2000. Per cent



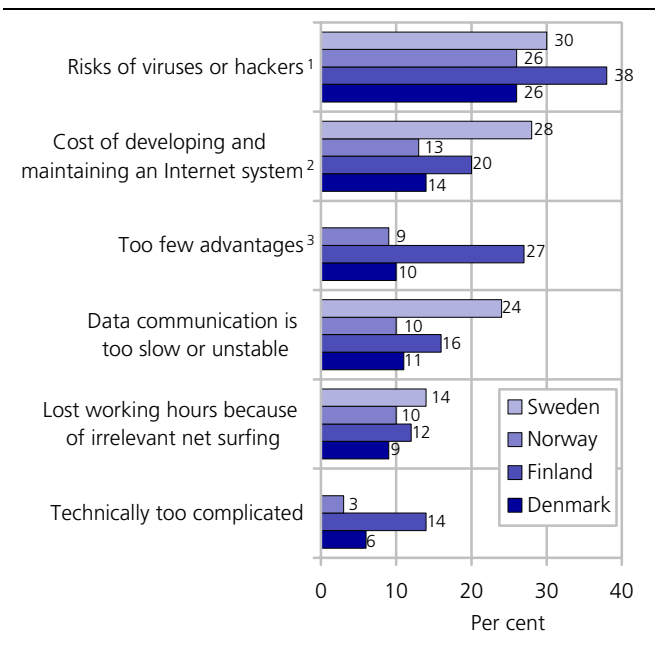
¹ Finland asked, "Information search on the homepages of co-operation partners.

² Finland asked, "payment of purchases in suppliers homepage, on-line payment".

Constraints

The enterprises, both with and without Internet, were asked to evaluate the importance of different constraints on the usage of Internet. Everywhere enterprises regarded data security as a serious problem. Figure 5.3 show that problems connected to security were considered a severe obstacle for usage of Internet in all the four countries. 38, 30, 26 and 26 per cent of the enterprises in Finland, Sweden, Denmark and Norway respectively considered this a constraint with much significance.

Figure 5.3. Constraints with much significance on Internet usage in general. 2000. Per cent



¹ Finland asked, "Data security problems/virus risk"

² Finland asked, "Expenses of homepage development and maintenance"

³ Finland asked, "Too little benefit to be expected"

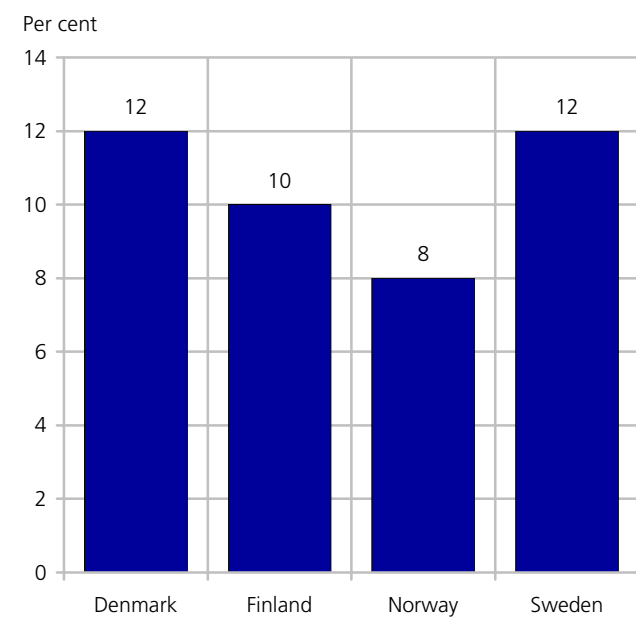
6. Internet sales

Chapter 6 will describe the use of Internet sales by Danish, Finnish, Norwegian and Swedish enterprises. In this publication sale via Internet is limited to orders received via homepages. Enterprises with at least one per cent of total turnover from orders received via homepages have Internet sales.

Internet sales not common

Figure 6.1 shows that by the end of 2000 Internet sales were not common among Nordic enterprises. 12 per cent of all Danish and Swedish enterprises with at least 10 employees had Internet sales by the end of 2000. 10 per cent of all Finnish enterprises made at least one per cent of total turnover from orders received via homepages. Internet sales were least common among Norwegian enterprises. Only 8 per cent of Norwegian enterprises with at least 10 employees had Internet sales by the end of 2000.

Figure 6.1. Share of all enterprises with Internet sales. Internet sales mean that at least 1 per cent of total turnover is received via homepage. 2000. Per cent



The share of enterprises with Internet sales is dependent on the size of enterprises. The relative number of enterprises with Internet sales was higher among large enterprises than among smaller ones everywhere. By the end of 2000 between 10 and 20 per cent of all enterprises with at least 100 persons employed had Internet sales in Denmark, Finland, Norway and Sweden. Among enterprises with 10-19 persons employed the relative number of enterprises with Internet sales was lower. In this size group between 5 and 10 per cent of the enterprises in the four countries had Internet sales (see figure 6.2).

Figure 6.3 shows some distinctive national differences. Almost 40 per cent of the Hotel and restaurant enterprises in Denmark and Finland had Internet sales against only 20 per cent in Norway and Sweden. In

Figure 6.2. Share of all enterprises with Internet sales. Internet sales mean that at least 1 per cent of total turnover is received via homepage. Distributed by employment. 2000. Per cent

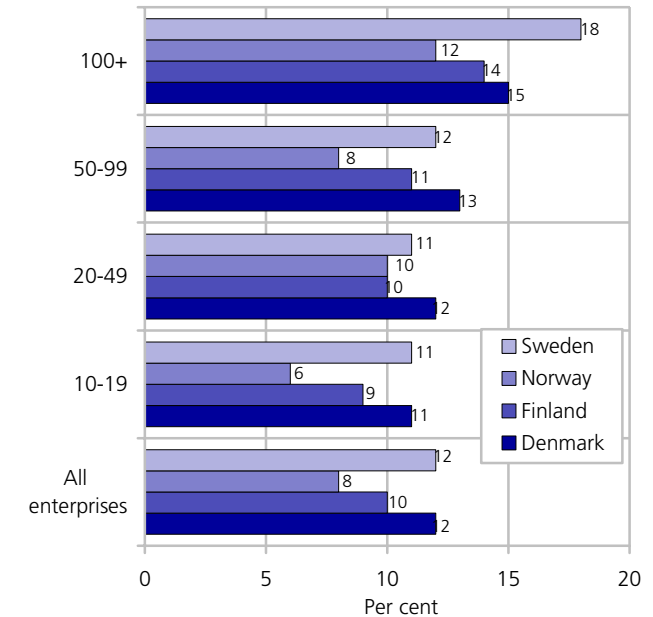
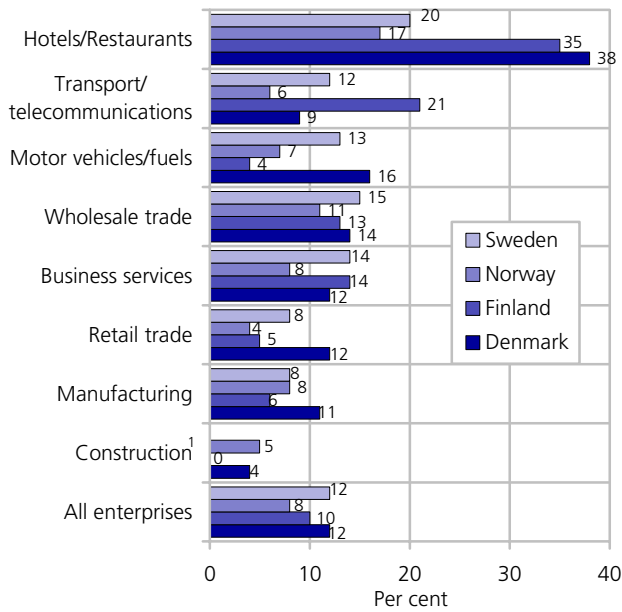
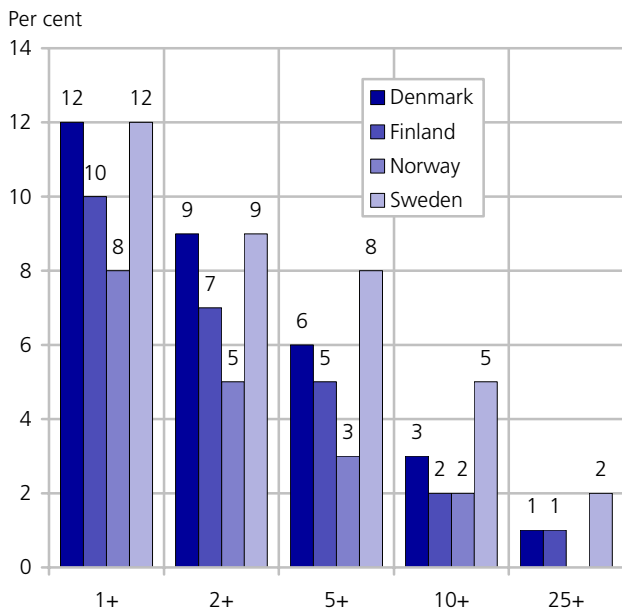


Figure 6.3. Share of all enterprises with Internet sales. Internet sale means that at least 1 per cent of total turnover is received via homepage. Distributed by industry. 2000. Per cent



¹ Construction was not included in the Swedish sample.

Figure 6.4. Share of total turnover from Internet sales among all enterprises. Internet sale means that at least 1 per cent of total turnover is received via homepage. 2000. Per cent



Retail trade 12, 8, 5 and 4 per cent of the enterprises in Denmark, Sweden, Finland and Norway had Internet sales by the end of 2000. Variations in the response rates between the industries create uncertainty.

Figure 6.5. Internet sales from Nordic enterprises. Internet sale means that at least 1 per cent of total turnover is received via homepage. 2000. Per cent

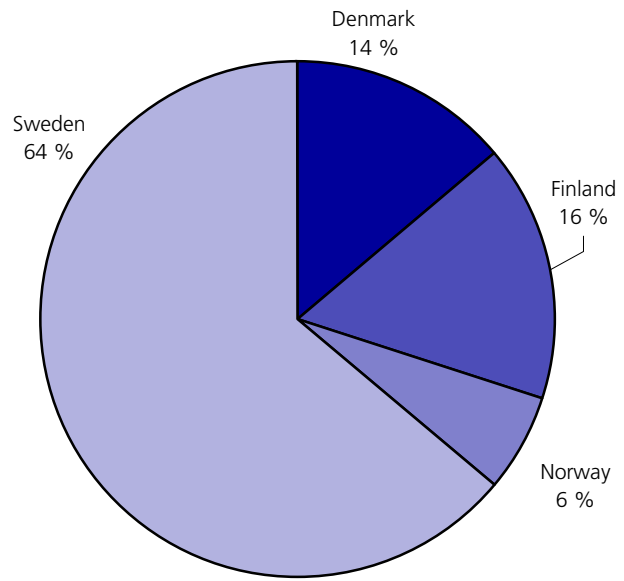
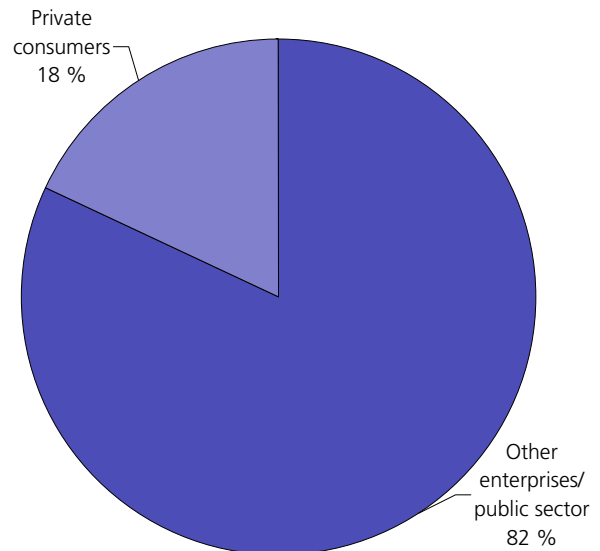


Figure 6.6. Internet sales from Nordic enterprises. Internet sales means that at least 1 per cent of total turnover is received via homepage. Distributed by customer groups. 2000. Per cent



Small share of total turnover

Figure 6.4 shows that Internet sales made up a considerable share of total turnover in few enterprises. Respectively 5, 3, 2 and 2 per cent of the enterprises in Sweden, Denmark, Finland and Norway received 10 per cent or more of total turnover from Internet sales by the end of 2000.

Volumes of Internet sales

The total Internet sales of Nordic enterprises were almost 12 billion Euros. About two thirds of the volumes was created by Swedish enterprise (see figure 6.5). The volumes of Swedish, Finnish, Danish and Norwegian Internet sales were in billion Euros respectively 7,5, 1,8, 1,6 and 0,8.

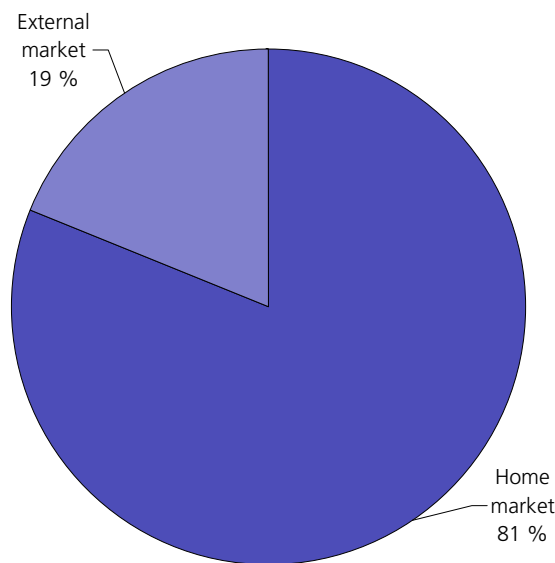
Business-to-business most important

Enterprises with turnover from orders received via homepages were asked to report the distribution between private consumers and other enterprises/public sector. Figure 6.6 shows that almost 80 per cent of the volumes of the enterprise's Internet turnover came from other enterprises/public sector. Figure 6.7 shows that most of their Internet turnover was created in the home market (i.e. that Danish, Finnish, Norwegian and Swedish enterprises made Internet sales mainly in respectively Denmark, Finland, Norway and Sweden).

Constraints

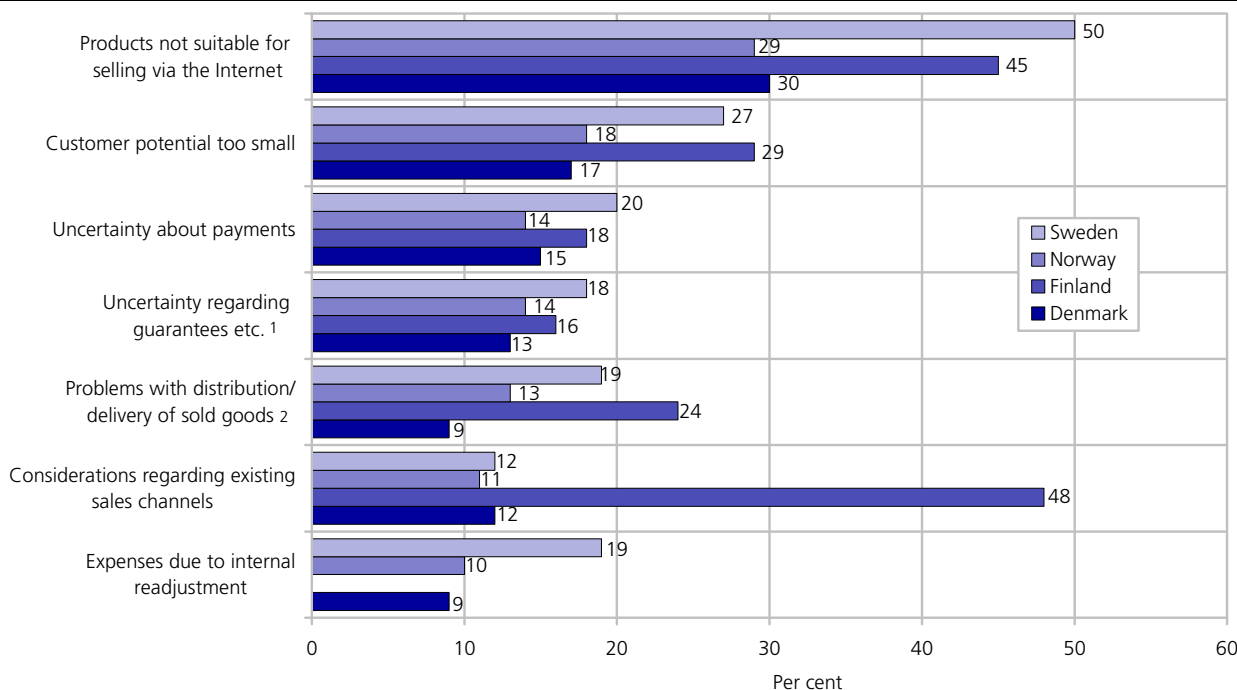
Questions about the relevance of barriers regarding Internet sales were also asked in the surveys. Enterprises were asked to evaluate the different constraints in terms of having "Much", "Somewhat" or "No significance". The barriers related to Internet sales refer to the population of all enterprises with ICT. However, the question was only asked enterprises with computers.

Figure 6.7. Internet sales from Nordic enterprises. Internet sales mean that at least 1 per cent of total turnover is received via homepage. Distributed by home market and exports. 2000. Per cent



A severe barrier against Internet sales was "products not suitable for selling via the Internet" (see figure 6.8). This was the most significant obstacle in Denmark, Norway and Sweden. Finnish enterprises regarded considerations for existing sales channels as a more important barrier.

Figure 6.8. Constraints with much significance regarding Internet sales. Internet sales mean that at least 1 per cent of total turnover is received via homepage. 2000. Per cent



¹ Finland asked, "Uncertainty about consumer protection (guarantees , etc.)"

² Finland asked, "Problems connected with logistics".

7. Electronic Data Interchange (EDI)

Electronic Data Interchange (EDI) is electronic transmission of data in a structured form between an enterprises own computer system and a remote computer system based on a defined standard. In these surveys the use of EDI based on the EDIFACT standard have been examined.

EDI most often used by large enterprises

The share of all enterprises in the Nordic countries using EDI in 2000 is shown in figure 7.1. Almost two out of 10 Nordic enterprises used EDI. 19 per cent of the enterprises in Denmark and Norway used EDI against 16 per cent of the enterprises in Finland and Sweden.

Figure 7.2 shows that the use of EDI was least common in smaller enterprises with 10-19 employees and most common in the biggest enterprises with 100 or more employees. Among the largest enterprises about 40 per cent used EDI everywhere. EDI is an investment intensive technology and the advantages are expected to rise with the number of EDI documents exchanged.

EDI was most commonly used within Wholesale. In Denmark, Finland, Norway and Sweden about one out of three enterprises in wholesale used EDI. An industry with great differences between the four countries was Hotels and restaurants with respectively 15, 13, 10 and 6 per cent EDI usage in Finland, Norway, Sweden and Denmark (see figure 7.3).

EDI sales not common

Figure 7.4 shows that by the end of 2000 EDI sales were not common among Nordic enterprises. In this publication an enterprise has EDI sales when at least one per cent of total turnover comes from orders received via EDI. In all Nordic countries between 4 and 7 per cent of all enterprises with at least 10 employees had EDI sales by the end of 2000.

Figure 7.1. Share of all enterprises with EDI. 1999-2001. Per cent

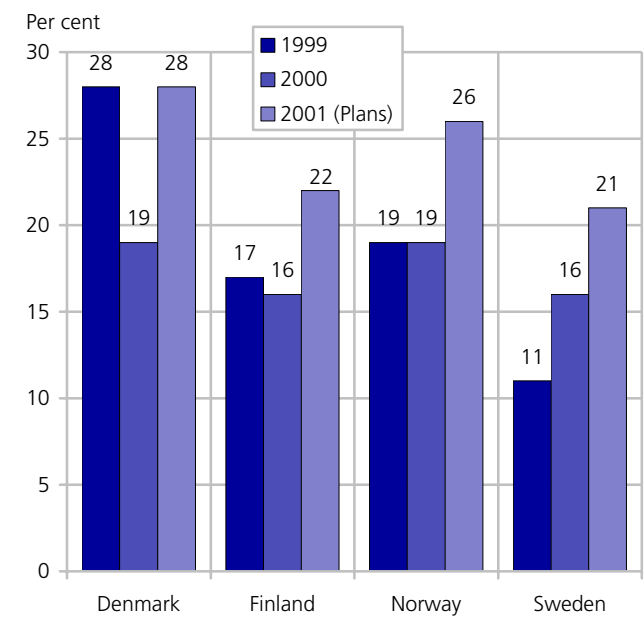


Figure 7.2. Share of all enterprises with EDI. Distributed by employment. 2000. Per cent

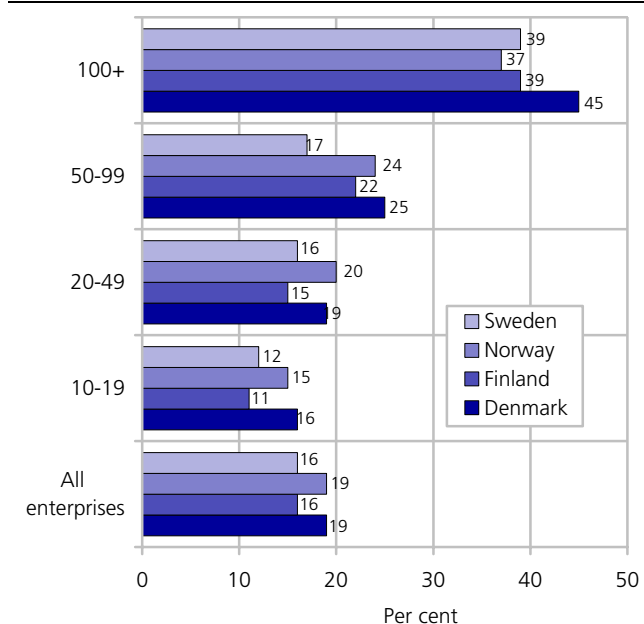
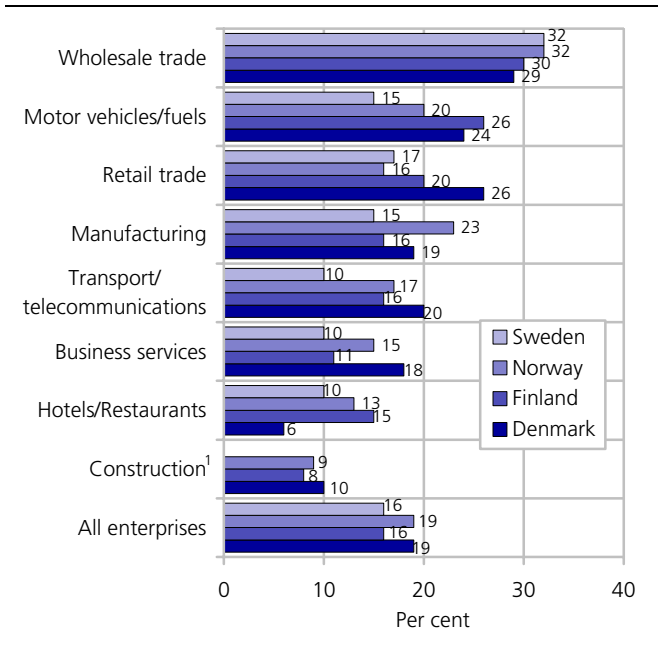


Figure 7.3. Share of all enterprises with EDI. Distributed by area of industry. 2000. Per cent



¹ Construction was not included in the Swedish sample.

Figure 7.4. Share of all enterprises with EDI sales. 2000-2001. Per cent

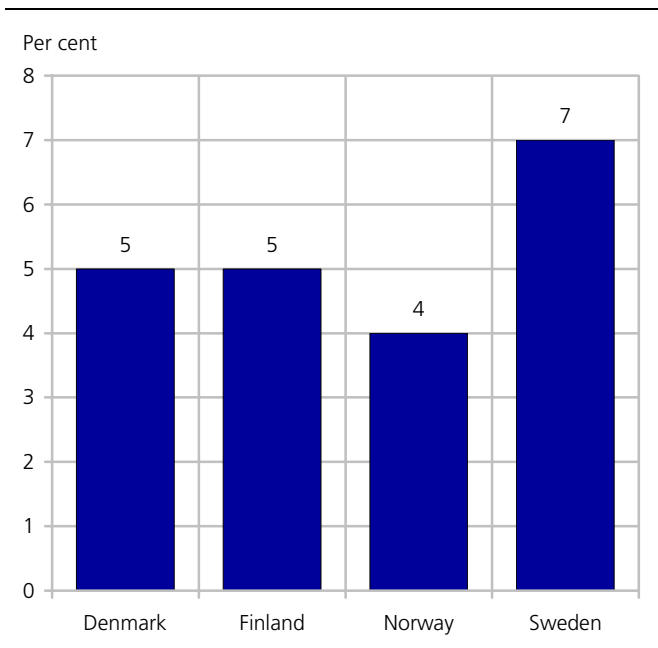


Figure 7.5. Share of total turnover from EDI sales among all enterprises. 2000. Per cent

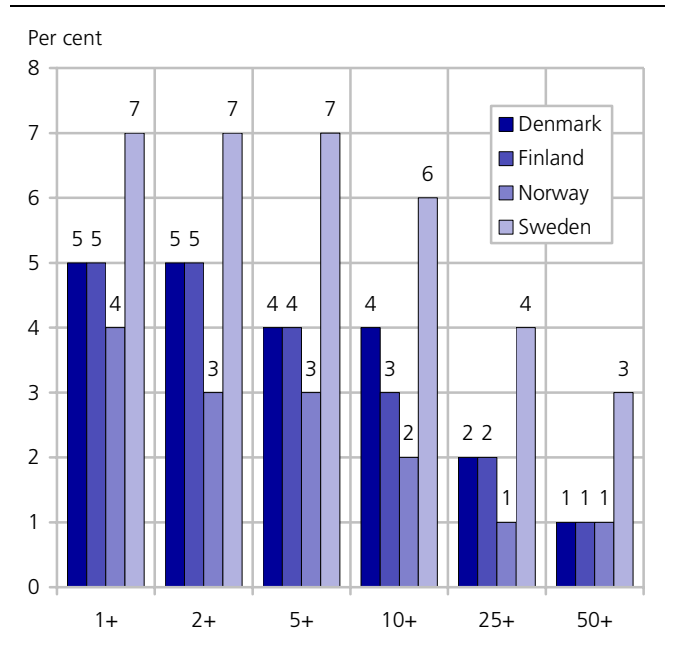
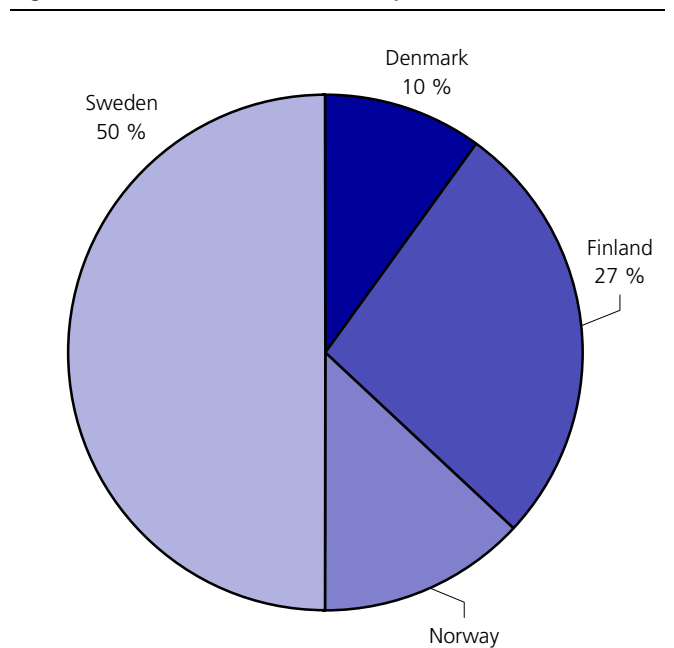


Figure 7.6. EDI sales from Nordic enterprises. 2000. Per cent



Small share of total turnover

Figure 7.5 shows that EDI sales made up a considerable share of total turnover in few enterprises. Respectively 6, 4, 3 and 2 per cent of the enterprises in Sweden, Denmark, Finland and Norway received 10 per cent or more of total turnover from EDI sales by the end of 2000.

Volumes of EDI sales

The total EDI sales of Nordic enterprises were about 85 billion Euros. About half of the volume was created by Swedish enterprises (see figure 7.6). The volumes of Swedish, Finnish, Norwegian and Danish EDI sales were in billion Euros respectively 43, 23, 12 and 8. The EDI sales of Nordic enterprises account for about seven times the volume of their Internet sales.

8. Background information on the surveys

The data collection of the ICT usage was carried out as postal surveys on a voluntary basis with one reminder in Denmark and Norway, and two reminders in Finland and Sweden (Surveys were launched in Denmark in October 2000, in Norway December 2000, in Finland January 2001 and in Sweden in April 2001).

Constructing new samples

The original samples differed somewhat in terms of activities and size classes covered due to country specific preferences. In order to make country comparisons, all countries provided a sub sample in accordance with agreed criteria. The industries cut-off in some of the four countries was extraction of crude petroleum and natural gas, mining, electricity supply, the financial sector, radio and television, and other service activities. Another result of the cut-off was that only enterprises employing 10 or more persons are covered.

The data presented in this publication should be considered as indicative and cannot be directly compared with the statistical results presented nationally, since this publication uses weighted results and somewhat different classifications than those used in the national publications. One should also consider that the surveys were not carried out at the same time.

Weighting of the results

Weighting of the results has been necessary for the making of valid comparable figures across the four countries, since the sampling profile and the response rates do vary between the countries. Weighting is also necessary for making comparisons over time, both within one country and across countries, in a later stage. This has been achieved by giving each enterprise answering the survey a specific weight. Each enterprise thereby represents a number of enterprises, which make it possible to calculate estimates for the whole private sector, as accounted for in this report, in the different Nordic countries. To construct the specific weights, the total number of enterprises in the population of each sub sample and size class has been used.

Covered activities

The sub samples consisted of the following NACE Rev.

1 activities:

Manufacturing (15-36)

Construction (45)

Trade with motor vehicles and fuels (50)

Wholesale trade (51)

Retail trade (52)

Hotels, restaurants and catering (55)

Transport/telecommunications (60-64)

Business services (70-74)

Final Sample

The distribution across industries and size classes are together with the total response rates shown in the table below (tab 8.1). As the table shows there are some differences both in the number of responses and the response rates. The reader should bear in mind that the differences in response rates may influence the figures reported in this publication.

Uncertainty

Statistics Norway and Statistics Sweden have calculated confidence intervals for the most important variables in the survey. More information is available on the two institution's homepages.

Table 8.1. Number of responses and total response rates

	Denmark	Finland	Norway	Sweden
Total	2 705	2 031	2 661	2 603
Industry				
Manufacturing	1 017	747	796	1 425
Construction	272	155	239	0
Trade with motor vehicles and fuels	143	66	145	88
Wholesale trade	455	162	279	136
Retail trade	159	233	353	102
Hotels, restaurants and catering	52	118	198	80
Transport/telecommunications	161	206	252	293
Business services	446	344	399	479
Size				
10-19	612	508	675	894
20-49	704	502	716	626
50-99	519	350	473	244
100+	870	671	797	839
Total response rate	67,0	57,3	73,5	71,3

9. General approach

The Nordic approach for measuring ICT can be characterised by the following principles:

- The model questionnaire has been designed to be a flexible tool built up by modules allowing country specific features to be included.
- The model questionnaire can - of the above-mentioned reasons - be updated to reflect the rapid changes in IC technology or use.
- The model questionnaire is designed as a general survey tool for all economic activities.
- The core of the model questionnaire is based on a qualitative approach, which is considered to provide the most harmonised basis for country comparisons.

Flexible approach

A flexible approach was chosen for the questionnaire design as information and communication technologies themselves and the usage are supposed to develop rapidly even over short time periods. Consequently, new areas can be expected to be measured and thus be included in the questionnaire. The model should therefore be regarded as a core model, which will need regular revision in the future.

Easy to fill in questionnaire

A high priority has been given to construct a questionnaire that is easy to fill in and as a result, in practice most of the questions are designed on the principle of multiple choices. Especially in a complex area such as ICT usage, this was expected to have great impact on the response rate and the quality of the answers - also keeping in mind the purpose of international comparability.

Standard column variables

The column variables of the questionnaire operate in two main dimensions. Firstly the year of using e.g. e-mail or establishing homepages for the first time was in the surveys conducted in 2000 asked as "2000 or earlier" or "Planned for 2001". For the questions related to barriers, an evaluation of the importance of the barriers was asked by using a scale "no importance", "some importance" and "much importance".

Applicable for several activities

The questionnaire has been formulated in a general fashion i.e. it would be in principal applicable to any chosen activity in the private sector. The issues on the ICT in general, together with Internet and e-commerce in particular, comprise the core of the questionnaire.

Quantitative questions

It is considered difficult to measure new emerging ICT applications in quantitative terms. However, a module on E-commerce has been introduced asking for the share of e-commerce related to total turnover.

Core questions covered in all four countries

The surveys in all four countries included the common core questions, together with country specific ones. The country specific questions are not reported in this publication.

Tidligere utgitt på emneområdet

Previously issued on the subject

Rapporter (RAPP)

2001/42: Bruk av informasjons- og kommunikasjons-
teknologi i næringslivet 2000

2001/1: Use of ICT in Nordic enterprises 1999/200

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