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Olle Findahl

Swedes and the Internet

2010

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Introduction

This report concerning Swedes and the Internet 2010 is based on telephone interviews of 2,000 individuals that were conducted during spring 2010. This is the tenth consecutive year for the survey, now by .SE (The Internet Infrastructure Foundation) and previously by the World Internet Institute. The first data was collected already in autumn 2000. This was during the end of the dot-com boom, before the Internet bubble had finally burst. Until that time, the Internet trend had been fueled by industry interests and rapid technological advancements. Following the exaggerated expectations of the late 1990s, there was considerable demand for independent surveys to assess and monitor the development of the Internet. The Internet bubble had largely been hyped by the media, using statistics from what were often dubious studies.

The aim of the project was in part to study peoples' access to and use of the Internet – the activities, type of content and contacts that were being disseminated over the Internet – and in part to observe how this use affected and changed peoples' everyday and work lives.

In autumn 2000, the first telephone-interview survey was conducted among a representative group of Swedes. At the same time, similar studies were carried out in the US, Italy and Singapore. In 2001, the first report was published, which addressed themes that would recur in later reports such as: the digital divide, the role of broadband, e-commerce, media consumption and comparisons with other media. This report included such sections as Internet users' problems and concerns, and their trust in other forms of media. There was also a section on comparative Internet statistics and a discussion concerning the actual definition of an Internet user.

A significant number of the questions in the first year concerned the Internet's social effects including a battery of psychological questions testing whether there was a difference between Internet users and those who did not use the Internet. One hypothesis during this period was that Internet users were more introverted and alienated than non-users. The idea being that those who were drawn to the Internet became more depressed and less content. This psychological test was also included in some of the latter studies, although as in many other respects, neither we nor our foreign colleagues found any decisive differences between Internet users and others.

The rapid spread of the Internet in the late 1990s declined after the year 2000 and began to level off, and a number of questions in the 2003 report addressed why many people were hesitant or uninterested in the Internet. Non-users have since been a recurring theme of the surveys. Their stance on ultimately becoming Internet users is decisive to the future of the Internet at any given time. In the early stages of the Internet, workplaces played a key role in its development, although at that time, among the population as a whole, it was more commonplace to have Internet access at home than at the office. In international comparisons, the percentage of Internet users was now greater in Sweden than in the US.

In 2003, there were also enough broadband users to state that access to broadband often increased Internet use multifold. TV and the daily paper remained the key sources of information and the Internet was still regarded by most people as a supplement. Families with children, at least those with teenage children, were increasingly seen as the driving force behind Internet use. The technology was not yet entirely reliable. Many experienced problems. Half of users said that their computers had a tendency to freeze.

In 2007, a more detailed analysis was conducted of the latest adopters, and the reduced differences between men and women. The digital divides and the role of disabled people

were addressed. A topic of discussion at this time was the file sharing of music, which was assigned a specific chapter. What were the driving forces of those sharing files? It turns out that there was a group that buys a great deal of music among those sharing files, which was larger in relative terms than among those in the same age group that did not share files. In an analysis of user patterns, four principal groups emerged: Advanced enthusiasts, modernists, traditionalists and the restricted. Modernists and traditionalists could in turn be divided into two groups, whereby the patterns were identical although the level of activity was either high or low.

A renewed analysis of user patterns was conducted in 2008. This time, the analysis was divided into three analyses: one for young people, one for middle-aged people and one for the elderly. Although young people spent more time on the Internet, we noticed the same set of user patterns recur in all age groups, including advanced enthusiasts and conservatives. Modernists and traditionalists are also represented in all age groups, albeit to varying degrees. There were also some new user patterns, specifically among young people.

In 2008, we began asking parents, questions who were participating in the survey, questions about their children. At this point, we realized that Internet use had become commonplace down to the level of preschool children. A separate report emerged: Young Swedes and the Internet 2008. During the same year, we paid attention to user-generated content, which is increasingly filling the Internet. A separate analysis was conducted of non-users and the status of non-digital social networks, which encompass both users and non-users.

Using an extra sample of non-users, a more in-depth analysis was conducted in 2009 of those who are not using the net. What is their perception of the Internet and what are their motives for not using the Internet? An extra sample of young people was also selected, and their answers together with their parents' responses about the children's use of the Internet resulted in the basis for the "Young Swedes and the Internet 2009" report. How do they use the Internet? What are their skills? How are they affected?

In this year's report, health information on the Internet comprises a specific area of focus. Our aim in the future is also to combine the wide-ranging survey of Swedes' Internet use with an in-depth analysis of a specific area. People are not only increasingly using the Internet in their everyday lives, its use has changed in a number of other respects and will continue to do so. Accordingly, a recurring survey of the Internet's development must have a solid basis from which to monitor its development over time, and be flexible enough to detect and register the changes that occur.

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Summary

Sweden ranks first in three global IT indexes
In 2010, Sweden ranked first in three lists that all attempt to "measure" various countries' readiness and conditions to become successful information-technology countries.

In international terms, Sweden is number one in Internet usage, particularly among the elderly
Nearly all young people in advanced industrial nations use the Internet. Here, differences between the countries are minor. However, Internet usage among retirees is only commonplace in such countries as Sweden, the other Nordic countries and the US.

Internet access
Some 85 percent of Swedes over the age of 16 have Internet access at home, up 2 percent on 2009. It is apparent that the point of saturation for the distribution of the Internet has not been reached.

Distribution among higher age groups is slow
New Internet users are found in all age groups, although those born in the 1990s and 1940s are dominant. The oldest people play a remote role among new Internet users.

Distribution among lower age groups has stopped
In the past ten years, the age of beginners has successively declined. The level at which half of an age group has begun using the Internet has decreased by one year in age for each year that has passed. This trend has now stopped. In 2009, the 50-percent level was reached in those slightly more than four years old, and is now at slightly less than four years old.

Broadband
Some 97 percent of internet users have access to broadband, which corresponds to about 84 percent of the population. Nearly everyone that has Internet access has a broadband connection.

Use of Internet rising
A total of 84 percent of all Swedes over the age of 16 use the Internet at some point. However, usage continues to increase among those who already use the Internet. Some 81 percent of Internet users are currently active on a daily basis. This trend also applies to preschool children. The amount of time spent online also increased during the year, by 15 percent to 11.3 hours per week.

Using the Internet while simultaneously watching TV is commonplace
Half of Internet users occasionally watch TV at the same time as they are online. One in three does this on a daily basis or a few times per week. This particularly applies to young girls.

Increased use of mobile Internet
During the past year, there have been significant changes in the use of mobile Internet. The number of users has not increased significantly, but the actual usage itself has risen considerably: Of those who use mobile Internet, more users now check the news (64 percent vs. 42 percent in 2009), read/send e-mail (52 percent vs. 20 percent), visit social networks (42 percent vs. 9 percent) and watch TV/video on their mobile phones (32 percent vs. 7 percent in 2009).

Less concerned about using credit cards

Ten years ago, 72 percent of the population was concerned about credit-card fraud. Today, that figure has declined to 24 percent. Meanwhile, 30-40 percent of those over the age of 55 remain concerned, and one third of the population does not pay their invoices online.

Eight in ten use Google to find answers to health and medical questions

Two in three Internet users search for health information online. This is more than twice the percentage in 2000. Eight in ten use Google and enter one or more search words to retrieve answers to their questions. However, this does not mean that people do not still search for information elsewhere. Physicians, nurses and care personnel remain the key sources.

Half of all Swedes are members of social networks

Among young people, the major leap occurred already between 2005 and 2007. For somewhat older users, the interest in participating in social networks has increased in recent years. In the past year, the increase has been dramatic and the percentage of users that visit social networks has more than doubled among those over the age of 45.

Internet filled with user-generated content

Some 1.5 million users regularly make comments on what others have written online. Just as many make status updates. Half a million Swedes post images on the Internet every week.

Not many bloggers in the population but many among young women

Blogging has never become a wide-spread activity (2010: 6 percent), but has become part of the Internet culture among young women. It begins in the early teen years. Already at the age of 12, half of all girls are active. And among those between the ages of 16 and 25, two thirds actively write or have written a blog, and three of four read others' blogs.

File sharing back at the 2008 level

After a successive rise in the percentage of those who share files in the past ten years, this trend leveled off last year and declined somewhat. In 2010, file sharing is back at the same level or even somewhat higher than in 2008. Young men dominate in this area, even more than before. Half of young men between the ages of 16 and 25 share files and another 25 percent have shared files at some point.

Half of the Swedes do not feel they belong to the new information society

While an increasing number of people are utilizing the possibilities offered by the Internet, it is important to remember that 15 years after the introduction of the Internet, about half of the population still does not feel as though they belong to the new information society. Eight in ten do not use their mobile phones to go online. Five in ten do not use the Internet to retrieve health-related information. One third does not use the Internet to pay their invoices.

Spread of the Internet increasingly slow

How many Swedes have access to the Internet and broadband?

Graph 1:1 Percentage of population (18+) that had access to the Internet and broadband at home between 2000 and 2010.

> Broadband is defined as all connection forms apart from dial-up connections. Mobile broadband, or the use of mobile Internet via a 3G connection, is classified as broadband. The various connection speeds are not defined.

Internet distribution among various age groups in the past ten years
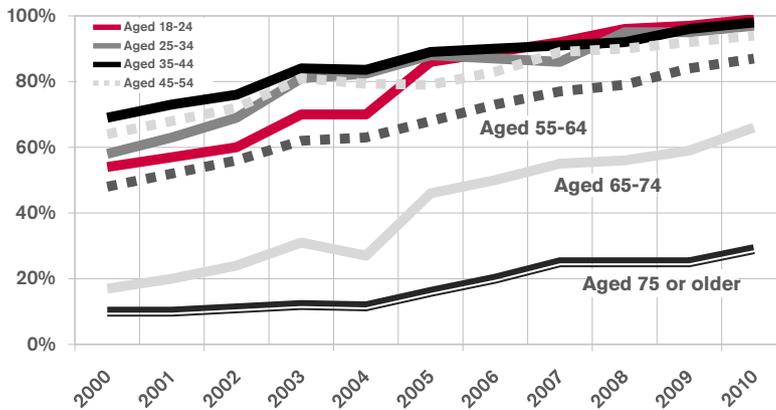
Graph 1:2 Percentage of various population age groups that had Internet access at home from 2000 to 2010.

Each year, new people start using the Internet, yet their numbers are also dwindling for each year. The margin for an increased spread is declining. Among young and middle-aged people, the limit has nearly been reached, with more than 95 percent already using the Internet. Among the elderly, many remain outside the Internet world, although there is little interest in the Internet among the non-users. While interest declines with age, it is apparent that the spread of the Internet has not reached the point of saturation.

Among the oldest people, the spread has been slow since the introduction of the Internet in the 1990s, and still applies today. However, there have been major changes among younger retirees (aged 65-75), where the rate of increase has been comparable with the developments among the younger age groups, two of three, or 66 percent, of which currently have Internet access.

The major change in recent years has been access to broadband. Nearly everyone (97 percent) that has access to the Internet has a broadband connection. Another fundamental change is that the Internet is now available on a number of various technical devices. While stationary computers remain the most frequently used connection form (62 percent), laptop connections are equally widespread (57 percent). Some people (16 percent) also use mobile units such as PDAs and smartphones, or game consoles (7 percent). Internet

connections via the TV, a TV cable box or digital TV remain relatively rare (5 percent).

More daily users

A shift that has been under way in recent years is that more Internet users have become daily users. Earlier, a relatively large group had access to the Internet but only connected occasionally. This group has nearly entirely disappeared and the remaining groups either

What type of Internet connection do you have at home?

Stationary computer	Laptop	Mobile phone	TV	Game console
62%	57%	16%	5%	7%

Level of Internet use among various age groups 2010

■ Occasionally ■ Daily

Age group	Occasionally	Daily
Aged 3-5	53%	12%
Aged 6-8	84%	14%
Aged 9-11	99%	46%
Aged 12-15	99%	81%
Aged 16-24	99%	92%
Aged 25-34	98%	90%
Aged 35-44	97%	79%
Aged 45-54	91%	67%
Aged 55-64	80%	57%
Aged 65-74	60%	43%
Aged 75 or older	25%	16%
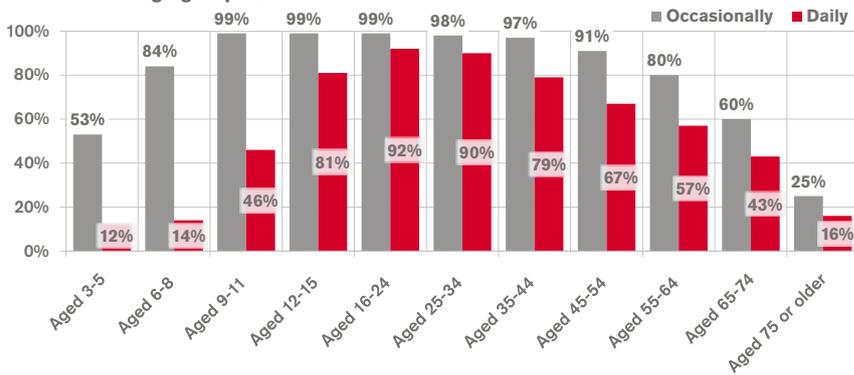
Graph 1:4 Percentage of various age groups that use the Internet on occasion and on a daily basis.

The trend for daily Internet use between 2009 and 2010

■ Daily 2009 ■ Daily 2010

Age group	Daily 2009	Daily 2010
Aged 3-5	3%	12%
Aged 6-8	10%	14%
Aged 9-11	45%	46%
Aged 12-15	76%	81%
Aged 16-24	88%	92%
Aged 25-34	81%	90%
Aged 35-44	67%	79%
Aged 45-54	64%	67%
Aged 55-64	53%	57%
Aged 65-74	37%	43%
Aged 75 or older	12%	16%
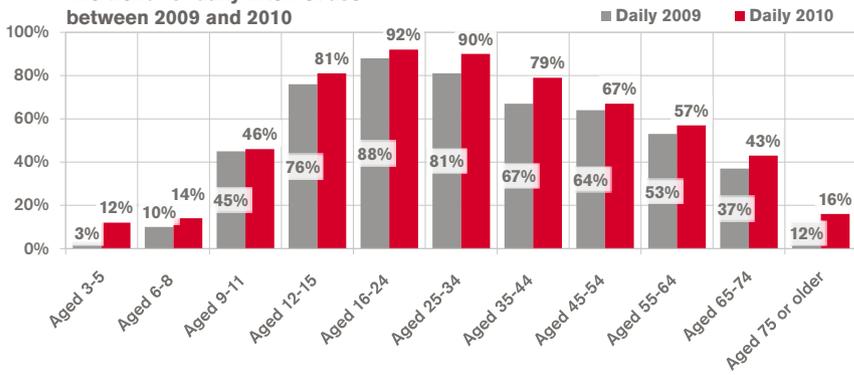
Graph 1:5 Percentage of various age groups that use the Internet on a daily basis in 2009 and 2010.

do not use the Internet at all or do so on a daily basis or at least once or a few times per week.

However, the differences remain large between the age groups. From the teen years until the age of 35, daily use is dominant, while use among younger children and the elderly is not as frequent.

This means that the frequency of use has increased, as has the amount of time spent on the Internet. For each year, the amount of time spent online by users has increased by about 10 percent. This applies to all age groups, and for both men and women. Internet access and frequency of use is approximately the same for men and women; the difference in the time spent online remains the same as in previous years. Men spend an average of 12.3 hours per week online, compared with 10.2 hours for women. This difference is attributable to a small group of women that spend very little time online and a large group of young men who spend a relatively considerable amount of time online via games.[1]

1   For a more detailed analysis of the differences between men and women, refer to Findahl, O. (2009). Swedes and the Internet 2009.

**How many people use the Internet on a daily basis?
A comparison between 2003 and 2010.**
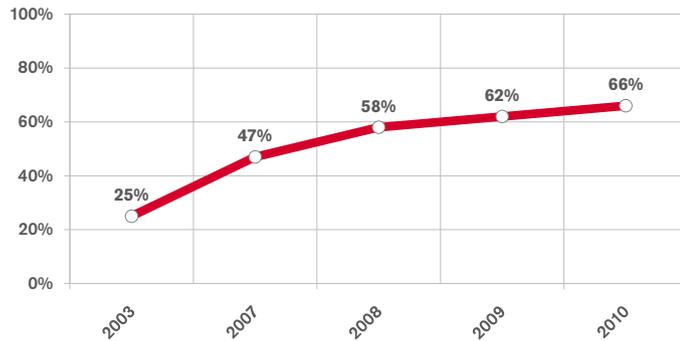
Graph 1:6 Percentage of population that uses the Internet on a daily basis.

**How much time was spent online?
A comparison between 2007 and 2010.**
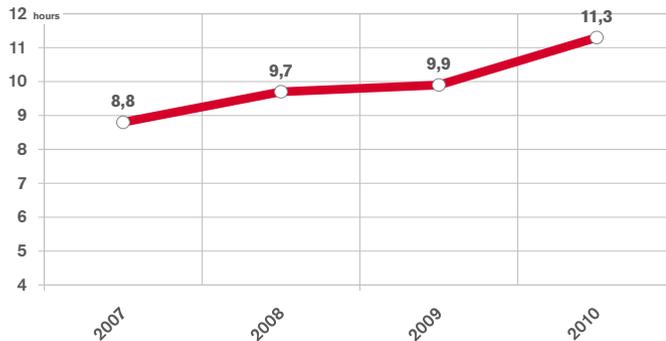
Graph 1:7 Average time (hours/weeks) that Internet users spend online at home.

Using the Internet while simultaneously watching TV commonplace

While people are spending more time online, other forms of media consumption have not declined accordingly. Reading the daily paper has remained at a fairly constant level, as has TV viewing.[2] In some respects, the time that is spent watching TV has even increased. One of several explanations for this is that many people are busy with other activities at the same time as they are online. TV watching is the type of activity that is often combined with using the Internet. Half of Internet users occasionally watch TV and use the Internet simultaneously, and one in three (32 percent) do so on a daily basis or a few times per week. Teenagers, aged 14-17, are those who most often multitask, including watching TV, while being online. This particularly applies to young girls, most of whom (69 percent) say that they often engage in other activities while simultaneously being online.

How often do Internet users multitask?
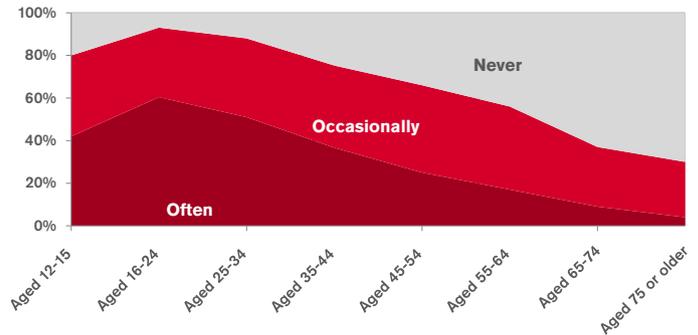
Graph 1:8 Percentage of Internet users in various age groups that engage in other activities while simultaneously being online.

2   Refer to Mediebarometern 2009 or Findahl, O (2009). Is the Internet a competitor or a complement to the traditional media. An international comparison.

13-YEAR-OLD CLARINET-PLAYING GIRL | Began using the Internet in 2008. Although she uses the Internet sparingly (3.5 hours per week), she is online on a daily basis, primarily to communicate with friends (Instant messaging). She occasionally visits a trading websites, such as Blocket, plays a game or checks a schedule. She does not have a computer of her own, but has access to the family's stationary computer. She is not a member of any social networks and does not use the Internet elsewhere. The Internet is not particularly important in her private life but plays a key role in school work. Her primary interest is playing the clarinet. She also reads books and watches some TV. She can create bookmarks and block unwanted requests, although she is not particularly fluent or interested in technology, and her parents help her a few times per week. She lives in a family of four. Her father is 45 years old, online daily and began using the Internet in 1998. **| MODERNIST**

Those who adapt and those who remain non-users

As we have seen, Internet use continues to change and develop. The Internet is used more frequently and for every passing year, slightly more time is spent online. After 15 years, some entirely new users are beginning to use the Internet. They are referred to as "late adopters," who after many years of hesitation have decided to go online. Who are they? Meanwhile, some people remain apprehensive to the new technology, do not find the Internet interesting enough and do not feel the need to acquire a computer with an Internet connection. Who are these people and what differentiates them from those who have decided to try the Internet? Let us begin with late users. Those who have begun using the Internet in the past five years.

When were the new users born?
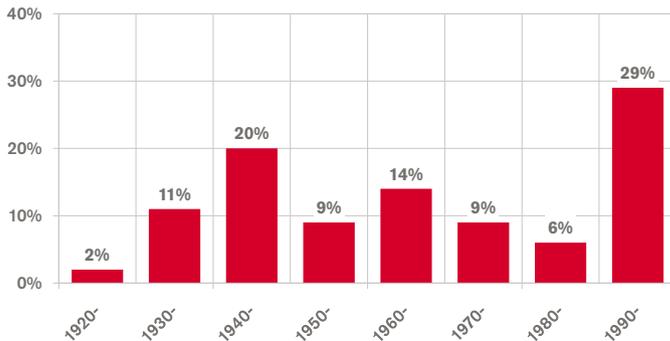
Graph 1:9 New users distributed by year of birth.

Where do the new users come from?

Most new users could be expected to belong to the older generations, since they comprise the majority of non-users. However, this is not the case. The oldest people play an obscure role among the new users. There are new users in all age groups, although two are predominant: those born in the 1990s and 1940s. (refer to graph 9)

Most people born in the 1990s are teenagers and essentially all of their contemporaries are already Internet users, some 94 percent by 2008. This means that there is also considerable pressure on the remaining percentage to begin using the Internet, which is also the case. Nearly 99 percent of young people currently use the Internet, which also means that this group is not expected to produce any new additions in the future.

Those born in the 1940s are either slightly above or below retirement age. There are still a number of non-users in this group. Even more non-users are found among the elderly, although new users can ultimately primarily be expected to comprise those born in the 1940s.

Among the new users, there are more women (57 percent) than men (43 percent). Most also have a lower level of education (44 percent) than the population as a whole (25 percent). The majority are skilled workers with such professions as drivers, carpenters, road workers, sales representatives, assistant nurses, preschool teachers, kitchen staff and retail employees.

Compared with the early majority, who acquired Internet access already between 1995 and 2000, recent new users (those who acquired access between 2006 and 2010) are elderly and show a lower level of interest and inquisitiveness in trying new technical devices and new services. However, their interest is greater than among those who are unconnected and have remained non-users to date.

|	Enjoy trying new technical devices	Enjoy trying new services	Average age Median
Early majority	50%	32%	40 years old
Recent new users	27%	13%	65 years old
Non-users	17%	4%	73 years old

71-YEAR-OLD RURAL RETIREE | He is married and worked in the area of electricity during his professional career and currently has hunting and woodcraft as his main interests. He is a member of the Swedish Hunters' Association. He does not consider himself to be particularly computer literate, although he can install new software on his PC. He is relatively interested in testing new technical devices, but not new services. In 2008, he began using the Internet and is now online on a daily basis. At home, he has a stationary computer, a laptop and a wireless network, as well as an e-reader and a GPS. He occasionally uses the Internet while travelling, although it is not particularly important to him. Online, he receives news and reads magazines. He uses e-mail and occasionally makes online purchases and visits the Blocket trading website. He has e-identification but does not use any Internet banking services. He is very concerned about credit-card fraud and of companies and authorities' Internet surveillance abilities. Traditional media outlets consume a significant portion of his time: reading the daily paper (1.5 hours), listening to the Radio (three hours) and watching TV (three hours). Since 2008, he also spends one hour per day online. **| TRADITIONALIST**

Who remain non-users?

In 2009, 1.7 million Swedes did not use the Internet. One year later, while a portion of this group has acquired a computer with Internet access, 1.5 million Swedes remain non-users. Most non-users are found among the elderly, although there are non-users in all age groups, even young people. Distinguishing them is their negative attitude to trying and testing new technical devices and services.[3]

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3   For a detailed analysis of non-users, refer to Findahl, O. (2009). Swedes and the Internet 2009.

How many people do not use the Internet in 2010?
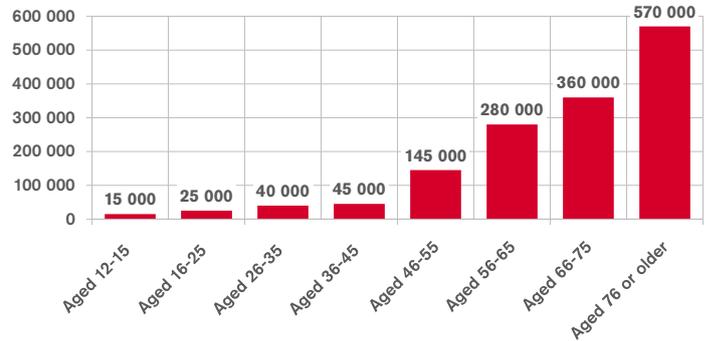
Graph 1:11 Number of non-users in the aged group 12 and older.

The declining trend among non-users between 2009 and 2010
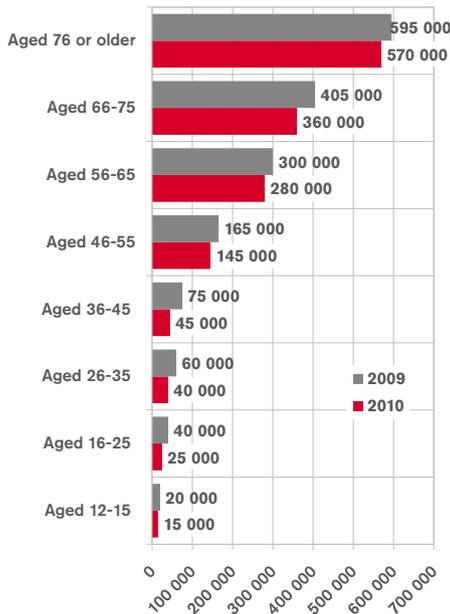
Graph 1:10 Number of people in various age groups that do not or very seldom use the Internet.

Internet statistics differ - why?

Each year, several different organizations publish Internet statistics, including SCB (Statistics Sweden)[4], PTS (The Swedish Post and Telecom Agency)[5], Nordicom[6], the SOM (Society Opinion Media) Institute at the University of Gothenburg and .SE (The Internet Infrastructure Foundation). Figures on access to and use of the Internet often differ. Although different methods are used, the primary reason for the estimates differing is what kind of sample of the population that has been chosen. Today, while most people under 50 have access to the Internet at home, the percentage is declining among higher age groups. Accordingly, the maximum age covered by a study plays a decisive role. The lower the upper age limit, the higher the Internet-use figures. There are currently 800,000 Swedes over the age of 74. SCB[7] and PTS have set the upper age limit at 74 and 75, and both agencies state that 89 percent of the population has Internet access at home.

Nordicom's media barometer uses 79 as the upper age limit and estimates access at 89 percent. For this "Swedes and the Internet" survey, we have not used an upper age limit and state that 85 percent have Internet access at home, which is decidedly less than PTS and SCB.[8] Accordingly, there are at least two Internet statistics figures describing Internet access in Sweden: 89 and 85 percent. Which figures are reliable? If we recalculate our statistics based on an age range of 16-75, and thus discount the oldest people, we conclude that 90 percent of those aged 16-75 have Internet access at home. This is the same level as SCB and PTS.[9] The question is thus not which figures are reliable, but rather which form of reality you are interested in. Is the objective to assess Internet access among the population as a whole, or Internet access excluding the 800,000 retirees?

	SCB	PTS	Nordicom	.SE	.SE
Age range	Aged 16-74	Aged 16-75	Aged 9-79	Aged 16-75	Aged 16 or older, no age limit
Access to Internet	89%	89%	89%	90%	85%
Use of Internet	92%	91%		90%	84%

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4   SCB (2010). Privatpersoners användning av datorer och Internet 2009 (Private individuals' use of computers and the Internet 2009). Statistics Sweden.

5   PTS (2009). Svenskarnas användning av telefoni & Internet 2009 (Swedes' use of telephony and the Internet 2009). The Swedish Post and Telecom Agency.

6   Nordicom (2010). Mediebarometern 2009. Nordicom, University of Gothenburg.

7   SCB is also conducting a survey (ULF) concerning Internet use among those aged 16 to 84.

8   Data collection was conducted during various period: SCB spring 2009, PTS August-September 2009, Mediebarometern January-December 2009, Wii February-Mars 2010.

9   For a more detailed comparisons and analyses, refer to Findahl (2008). What can we infer from the Internet statistics?

Sweden in the world

I n recent years, Sweden, along with the other Nordic countries, has been at the forefront in terms of Internet diffusion. What is the current status? How does Sweden compare with other countries, in terms of Internet distribution and use among the population, and from a broader societal perspective?

The answer is that Sweden remains in pole position and depending on what age range the estimate is based on, 91 percent (where the oldest people over the age of 75 are excluded) or 85 percent (including everyone) of the population uses the Internet. The Netherlands and the other Nordic countries are close behind. There is a subsequent leap to the US and another gap to the Asian

Internet users in various countries
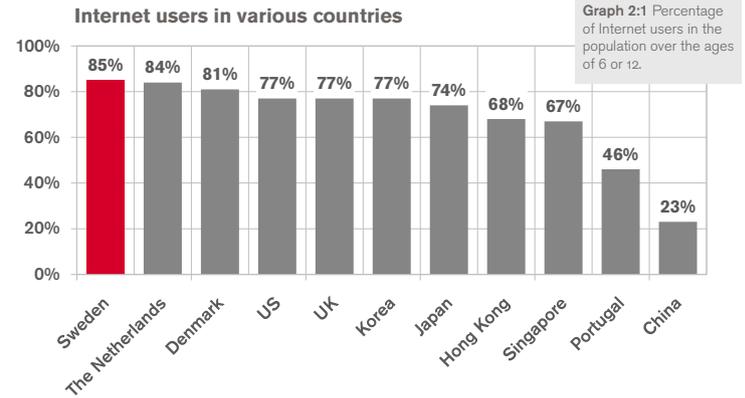
Graph 2:1 Percentage of Internet users in the population over the ages of 6 or 12.

tiger economies. In many Southern and Eastern European countries, represented by Portugal in this study, about half of the population uses the Internet. The developing countries show significantly lower single-digit figures, while China has substantial momentum. Internet penetration is 23 percent, which corresponds to 298 million Chinese people[1] in absolute terms.

Internet use among various age groups

Graph 2:2 of Internet users among various age groups in five countries.

1   Statistical sources: APIRA (2010). Internet in Asia Pacific Region. A comparative Report 2009; 2010 USC Anneberg Digital Future Study; World Internet Project. International Report 2010; Pew Internet Project 2010; EU Barometer statistics 2010.

If we examine the distribution among various age groups more closely, we can see that there are considerable similarities between the most developed nations concerning the use of Internet among young people. Nearly all young people use the Internet. However, there are significant differences between the countries in terms of the elderly. Only in countries such as Sweden and the US is Internet use somewhat routine among retirees. In the most developed Asian countries, Internet has not quite reached the elderly.

Sweden also has favorable broadband coverage nowadays, entirely on a par with Hong Kong and South Korea. Some 97 percent of Internet users in Sweden have a broadband connection.

Number of hours spent online per week
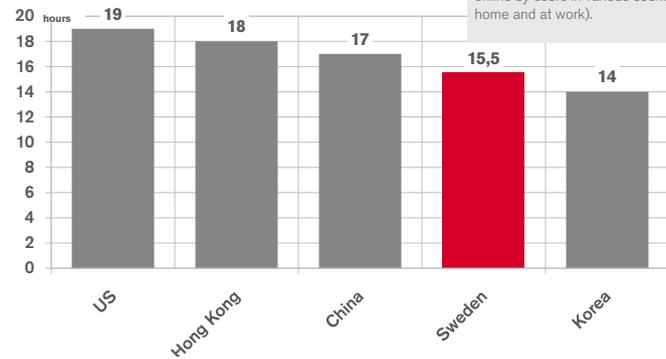
Graph 2:3 Time (hours/week) spent online by users in various countries (at home and at work).

	Korea	Sweden	Hong Kong	US
Percentage of Internet users with broadband connection	98%	97%	85%	80%

Time spent online has also increased in Sweden, amounting to 15.5 hours per week on average, provided that both time spent at home and work are included. US Internet users spend the most time online.

However, some of the Asian countries have advanced further in the use of mobile telephony to access the Internet. The mobile phone has evolved into a key Internet access tool, earlier in Japan and now also in Korea. In this area, Sweden and other Western European countries have not achieved the same degree of success, although new telephones and new pricing have entailed changes in the past year.

Percentage that access the Internet via a mobile phone
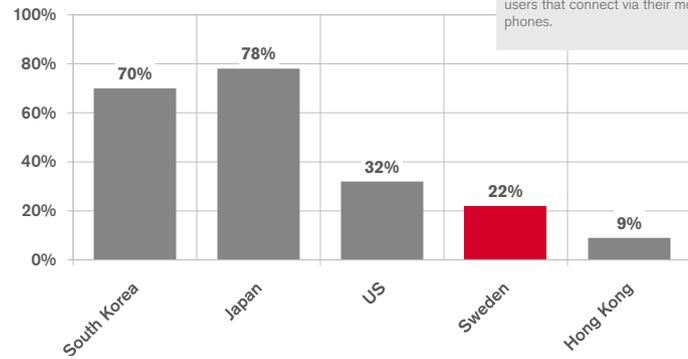
Graph 2:4 Percentage of Internet users that connect via their mobile phones.

"An index is generally based on a number of different factors that are compiled into a single summarizing value."

The ICT Development Index is compiled by the ITU, International Telecommunication Union, which is a UN body and a leading collector of both simple statistics and indicators. The ITU has published two previous indexes; the Digital opportunity index and the ICT opportunity index, and is currently preparing an IDI, or ICT Development index. It comprises three sections where the first applies to ICT access (mobile, pc, etc.), the second to ICT use (Internet, broadband, mobile) and the third to ICT proficiency (level of education, etc.). The focus of the work is determined by the World Summit on the Information Society. Sweden ranks first in the latest study of some 100 countries' IDI indexes[2]. Most of the data is from 2008. The ITU also calculates the costs of using ICT (landline telephony, mobile, broadband) in various countries and the results were compiled in an "ICT price basket." Here, Sweden ranks 14th after Macao, Hong Kong, Singapore, the US, Denmark, Norway, the UK, Canada and Finland.

2   ITU (2010). Measuring the Information Society 2010. International Telecommunication Union (ITU); ITU (2010). Core ICT Indicators 2010. International Telecommunication Union (ITU).

Sweden ranked first in three indexes

However, many of the international organizations are not satisfied using simple statistics on Internet use in various countries and instead try to provide a wider portrayal of the countries, including not only technology but also economic status, level of education, research and policies. The aim is to describe various countries' preparedness and means for development of new technology and thus a country's ability to become a successful information-technology country. The purpose is to "benchmark" the information society.

An index is generally based on a number of different factors that are compiled into a single summarizing value. It is a matter of what factors are included and if any new factors should be prioritized over others. In most cases, the index changes over time; new factors are added, others removed, the weightings are recalculated, etc. This also applies to the latest calculations.

The benefit of the index is that it proves that technology and infrastructure alone are insufficient to create favorable conditions for the development of information technology. The right political, cultural and social environments are also required to provide people with an optimal environment. Accordingly, most indexes are also modified and revised with time.

In 2010, Sweden ranked first in three major indexes. One was the ICT Development Index from the UN and ITU, which calculates a combined measurement for Internet access, use and proficiency. The costs of Internet use for each country is also calculated and added to a price basket. Sweden is not among the least expensive countries but rather ranks 14th in this category, although it ranks first overall.

Sweden also ranks first in the Digital Economy Rankings index, which assess the economic, legal, political and social conditions that are relevant to the development of information technology in a country. Sweden was also ranked number one in the World Economic Forum's Network Readiness index.

ICT Development Index		Network Readiness Index		Digital Economy Rankings	
1	Sweden	1	Sweden	1	Sweden
3	Korea	2	Singapore	2	Denmark
4	Denmark	3	Denmark	3	US
5	The Netherlands	5	US	4	Finland
8	Japan	6	Finland	5	The Netherlands
9	Norway	7	Canada	6	Norway
10	Hong Kong	8	Hong Kong	7	Hong Kong
11	UK	9	The Netherlands	8	Singapore
12	Finland	10	Norway	9	Australia
13	Germany	13	UK	11	Canada
14	Singapore	14	Germany	13	Korea
15	Australia	15	Korea	14	UK
18	France	16	Australia	15	Japan
19	US	18	France	18	Germany
21	Canada	21	Japan	20	France

Note: The same countries are ranked in all three indexes to facilitate comparisons. This means that some countries have been removed and some figures were omitted in the table.

3   Economist Intelligence Unit (2010). Digital Economy Rankings 2010. Beyond e-readiness. A Report from the Economist Intelligence Unit.

4   WEF (2010). The Global Information Technology Report 2009-2010. World Economic Forum (WEF).

Growing up with the Internet

The real Internet generation is now growing up: those who are surrounded by computers and the Internet from the beginning. In the past 15 years, the age of beginners, measured as the level at which 50 percent of an age group has begun using the Internet, has decreased by one year in age for each year that has passed. In 2000, people began to familiarize themselves with the Internet in the early teen years and by the age of 13, half of them had tried the Internet. Four years later, in 2004, half of nine year olds had begun at least occasionally using the Internet. Another four years on, in 2008, the 50-percent level was at age five and in 2009, the level was at age 4.2.[1] During the past year, the trend toward increasingly younger ages for beginners has leveled off. The age at which 50 percent of an age group has begun using the Internet was 3.9 in 2010. Although the Internet will ultimately descend even further down in age, the downward spread has begun to reach its natural end point.

While many preschool children now have Internet access, their usage thereof remains limited until they begin school. However, change is continuously under way and use is increasing. When comparing 2010 with 2009, it is apparent that the age of beginners is not the only factor that has changed, but also the number of people using the Internet in each age group. Last year,

1   Refer to Findahl (2010). Young Swedes and the Internet 2009.

When did half of an age group begin using the Internet?
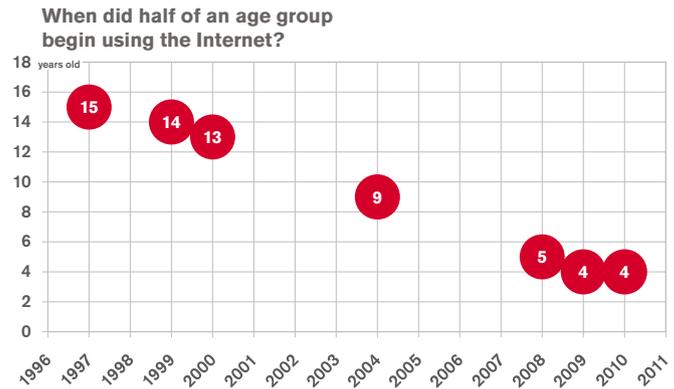
Graph 3:1 Age at which 50 percent of an age group began using the Internet

More preschoolers use the Internet in 2010 compared with 2009

■ Occasionally 2009 ■ Occasionally 2010
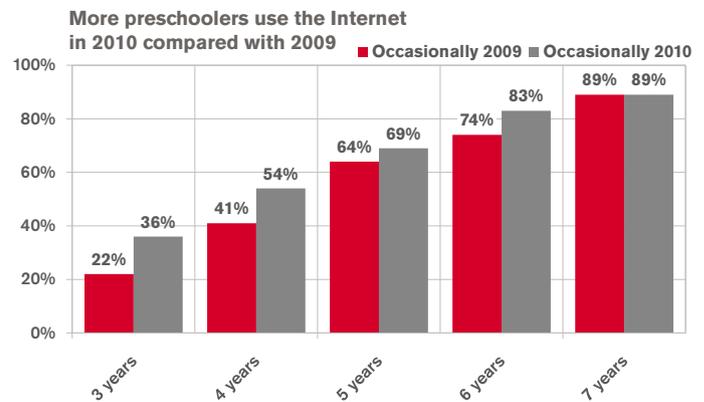
Graph 3:2 Percentage of preschoolers in various ages who occasionally use the Internet in 2009 and 2010, respectively.

only a fraction of children used the Internet on a daily basis. In 2010, that figure was over 10 percent.

First games and video clips, then also chatting, social networks, e-mail and facts

In the preschool years, between ages three and six, the first phase of children's' Internet use develops. Video clips and elementary games dominate this use, which continues through the teen years, but when children start school and learn to read and write, the Internet's uses expand and offer a number of new opportunities.[2] In previous studies, parents have stated the activities that dominate their children's use of the Internet. In this year's study, parents were given a number of predetermined alternatives to mark, which now enables us to examine in greater detail the ages during which some media activities begins and how its popularity subsequently changes as children grow older.

More preschoolers have begun using the Internet on a daily basis
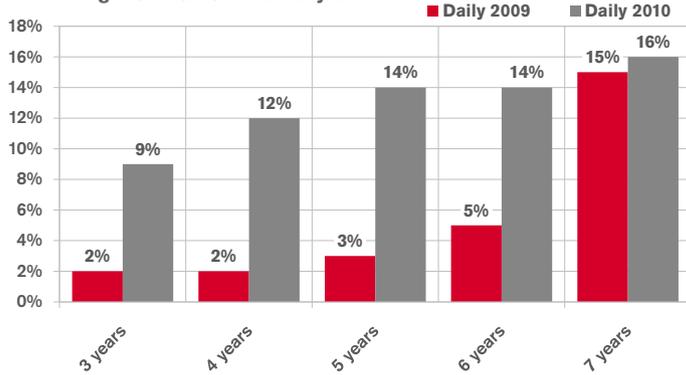
Graph 3:3 Percentage of preschoolers of various ages that use the Internet daily.

2   Refer to Findahl (2010). Young Swedes and the Internet 2009.

Frequency with which the Internet is used to play games
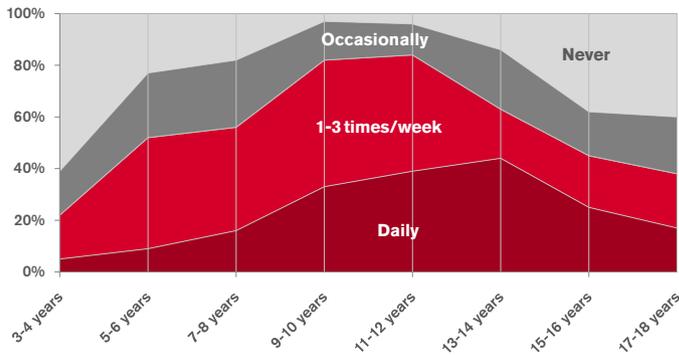
Graph 3:4 Percentage and frequency of Internet games in various ages

Frequency with which the Internet is used to view video clips
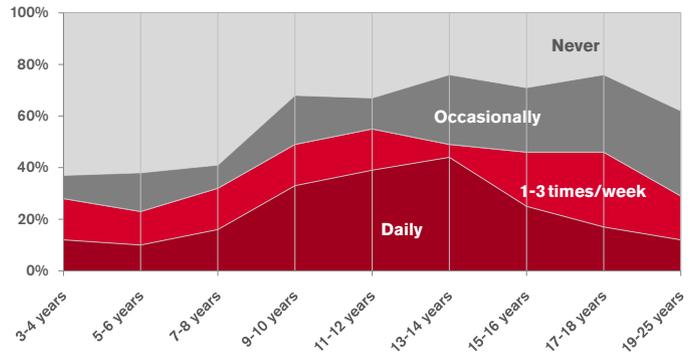
Graph 3:5 Percentage and frequency of online video-clip viewing in various ages.

Online games and video-clip viewing that is included in the first phase, increases among children during the school years. This particularly applies to daily use, which is not as prevalent during the preschool years. Video-clip viewing peaks in the late teens, while game playing appears to peak earlier, at around 11-12 years old. This is primarily attributable to the fact that girls largely abandon playing games in their teens to instead spend more time on blogs and social networks.

Other activities, such as searching for facts, chatting (primarily instant messaging), sending e-mail and participating in social networks requires literacy. Accordingly, school children spend time on these activities during the second phase from ages seven to ten. The activity to spread the fastest is the discovery that the Internet can be used to search for information. Among seven to eight year olds, 10 percent spend time searching for facts. A couple of years later, (aged nine to ten) that figure is 50 percent and another five years later, nearly 100 percent spend time searching for facts, at least occasionally.

Using the Internet for e-mail does not spread as quickly. Since the second phase (aged seven to ten) is too short, it is not until the third phase (aged 11-14) that 50 percent use e-mail. During the third phase (aged 15-18), e-mail has reached everyone, which is similar to the chatting trend, meaning communication via instant messaging.

Accordingly, it takes about eight years for these activities to spread among school children. These activities will subsequently be included in their daily use of the Internet.

This indicates significant differences among school pupils. All children do not learn to send e-mail at a specific age, as they once learned to walk at about the same time. At the age of seven to eight, some have already begun chatting with friends, searching for facts and sending e-mail. Other online activities are not adopted until the teen years. We can ultimately expect these distribution curves to become steeper and that most school children will learn to use the Internet in a more varied way at an earlier age.

The use of social networks follows a slightly different development curve. The distribution initially appears similar; at age eight, a small group (about 8 percent) begins visiting social networks; by age 11-12, this group has expanded to 50 percent. The rate of increase subsequently decreases and does not reach its peak until age 20.

How does online gaming on a daily basis change with age among boys and girls?
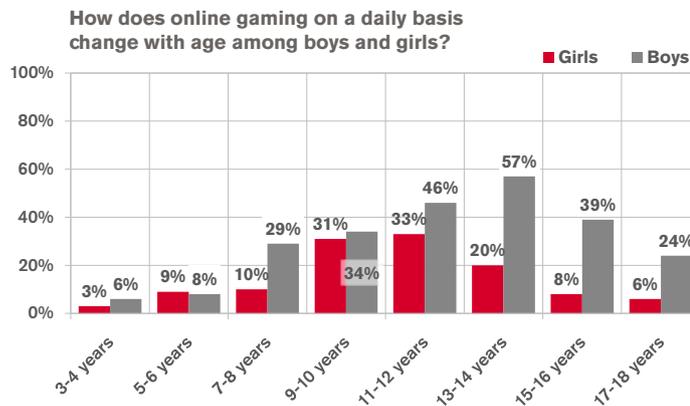
Graph 3:6 Percentage of boys and girls of various ages who play games online on a daily basis.

The spread of four Internet activities among school children
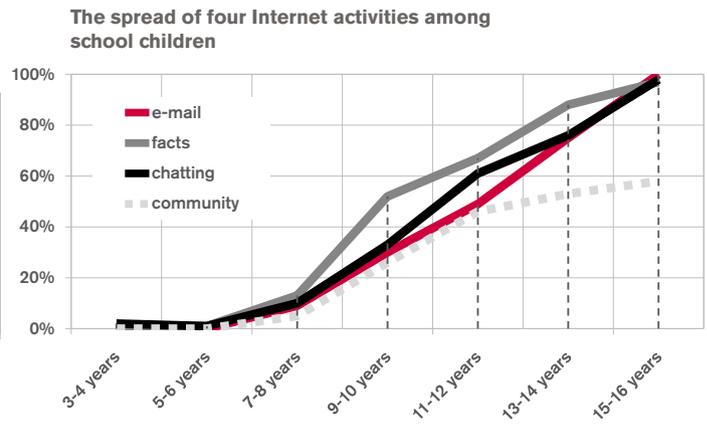
Graph 3:7 Percentage among various age groups that spend time chatting, sending e-mail, searching for facts and visiting communities.

e-commerce

E-commerce has steadily risen since the turn of the century, although in recent years, the increase has leveled off. According to the Swedish Retail Institute (HUI), online sales of SEK 24 billion were generated in 2010, compared with SEK 21 billion in 2008. This corresponds to about 4.5 percent of all retail sales.[1]

Nearly everyone aged 16 to 55 has made online purchases, although it is not as prevalent among the elderly. This means that among Internet users over age 18, 81 percent shop online, while the prevalence among the population as a whole is 68 percent. Accordingly, one-third of the population over age 12, 2.7 million, have not made online purchases.

Making online purchases is not a daily or weekly occurrence for most people, but rather an activity practiced on a monthly or less seldom basis. Some 32 percent of Internet users make an online purchase at least once a month and 47 percent do so less often. The differences between men and women are minor and among people with different incomes.

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1   HUI (Swedish Retail Institute), September 3, 2010.

E-commerce trend between 2000 and 2010
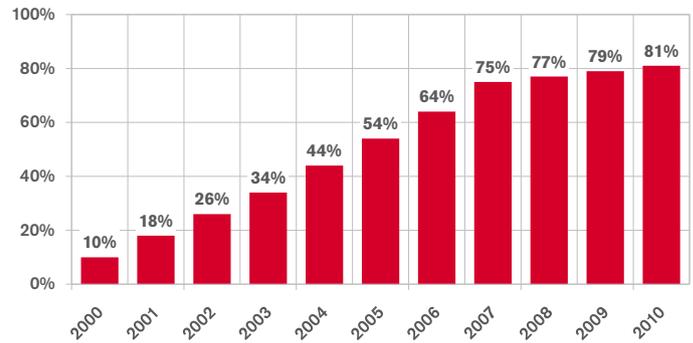
Graph 4:1 Percentage of Internet users (18+) that have made online purchases.

How many people make online purchase in various age groups
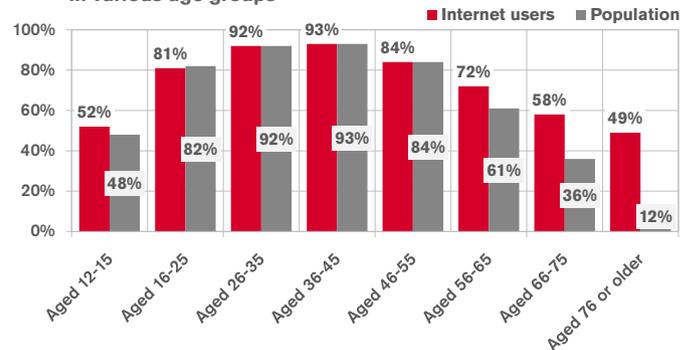
Graph 4:2 Percentage of various age groups among Internet users and the population as a whole, respectively.

Decreased concerns over Internet fraud between 2000 and 2010
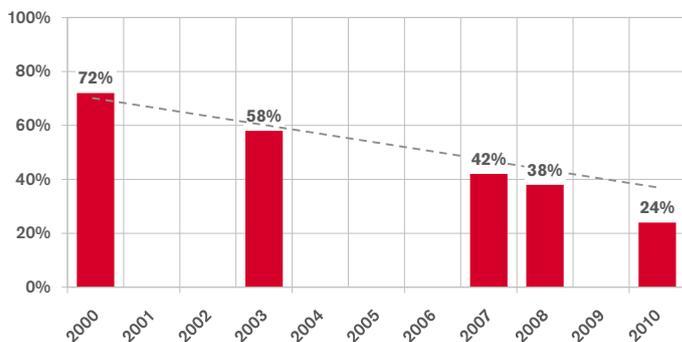
Graph 4:3 Percentage of population that claims to be highly or relatively concerned about credit-card fraud.

Percentage concerned over credit-card fraud in 2010
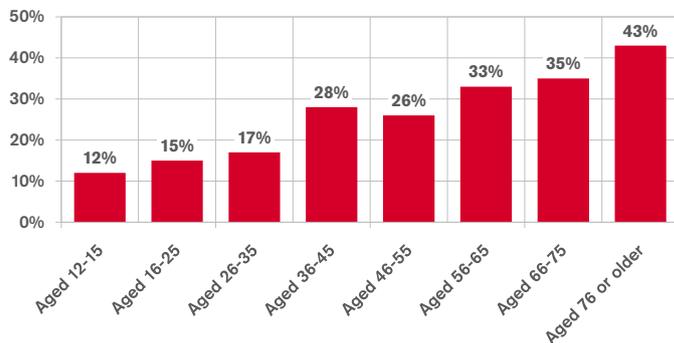
Graph 4:4 Percentage of various age groups that claims to be highly or relatively concerned about credit-card fraud.

The Internet serves as both a procurement and sales channel, as well as a databank containing information about goods and services.

Concerns of credit card fraud decreasing but remain among elderly

Ten years ago, there was widespread distrust of online payment systems. Most people did not consider them sufficient safe and did not want to give their credit-card numbers. These concerns have now declined considerably from 72 percent concerned in 2000 to 24 percent in 2010. However, the differences among generations remain significant. Young people are the least concerned (12-15 percent) and the elderly are the most concerned (35-43 percent), which is also reflected in their e-commerce habits.

Product information and price comparisons as prevalent as purchases

The Internet serves as both a procurement and sales channel, as well as a data bank containing information about goods and services. The ability to acquire information regarding various products is a feature used by nearly all Internet users, from the youngest to the oldest. Some 87 percent of users exercised this possibility.[2] Conducting direct price comparisons is also relatively routine (70 percent), particularly among men.[3]

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2   This means that 74 percent of the population searches for product information online; an exceptionally high figure internationally (compare with 58 percent in the US. Pew 2010).

3   The difference is statistically significant $Chi2=74$, $p \leq 0,001$

How typical is it to use the Internet for various types of e-commerce?

Product information	87%
Visit trading sites	83%
Shop online	79%
Pay bills	77%
Purchase/book trips	74%
Make price comparisons	70%
Buy perishables	5%

Percentage of various age groups that use the Internet to acquire product information

Aged 12-15	68%
Aged 16-25	92%
Aged 26-35	96%
Aged 36-45	92%
Aged 46-55	91%
Aged 56-65	83%
Aged 66-75	69%
Aged 76 or older	66%

Men also most actively visit general trading sites, such as Blocket and Tradera (83 percent). However, there is no difference between men and women in terms of shopping, paying bills or purchasing trips online. It is also just as unusual among men and women to purchase perishables online.

However, the user's level of education is a factor, where highly educated people more actively acquire information about products, pay bills and buy/book trips online, regardless of age.[4] Some 80 percent of highly educated people with a degree, use the Internet to make price comparisons, compared with 54 percent of people with only compulsory school level education.

Does education level play a role in using the Internet for price comparisons?

■ At least once a month   ■ On occasion

	At least once a month	On occasion
Low education	27%	27%
Low-intermediate..	28%	35%
Intermediate	31%	39%
Intermediate-high..	34%	40%
High education	43%	37%

Graph 4:7 Percentage of Internet users with varying levels of education that make online price comparisons.

4   Significant differences Chi2= 28, 125, and 45, p≤0,001

How typical is it to visit trading websites, such as Blocket and Tradera?

Bar chart "How typical is it to visit trading websites, such as Blocket and Tradera?":
- Aged 12-15: 59%
- Aged 16-25: 84%
- Aged 26-35: 91%
- Aged 36-45: 90%
- Aged 46-55: 89%
- Aged 56-65: 78%
- Aged 66-75: 68%
- Aged 76 or older: 62%

One-third of population does not pay their bills online

Everyone has to pay bills, at least on some occasion per month, and many currently do so online. The remaining one-third of the population thus pays their bills using another method. This primarily applies to the elderly, most of whom (84 percent) do not pay their bills online.

Percentage of Internet users in various age groups who pay their bills online

Legend: ■ Internet users ■ Population

Bar chart (Internet users / Population):
- Aged 12-15: 24% / 17%
- Aged 16-25: 57% / 57%
- Aged 26-35: 95% / 95%
- Aged 36-45: 95% / 95%
- Aged 46-55: 84% / 85%
- Aged 56-65: 79% / 66%
- Aged 66-75: 69% / 43%
- Aged 76 or older: 51% / 14%
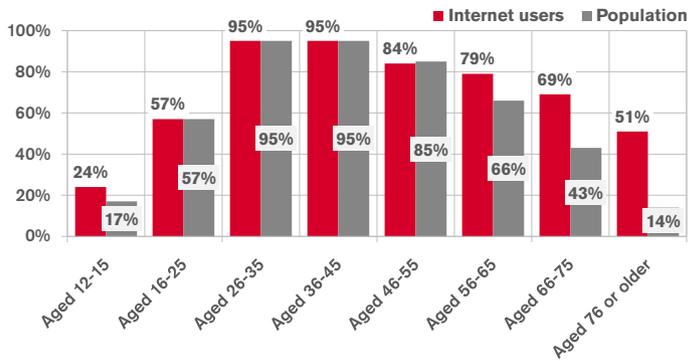
Graph 4:9 Percentage of various age groups among Internet users and the population as a whole who pay their bills online.

PHOTO: **ISTOCKPHOTO**/PKLINE

Health and Care on the Internet

The Internet has caused a revolution in terms of making information and knowledge available to everyone with an Internet connection. A slew of information in a variety of subject areas is just a few clicks away. One such area is healthcare, which is relevant for everyone during the various stages of life. Everything from expert commentary and care guides to personal blogs and pharmaceutical advertisements are found online. However, the traditional information sources have not been driven out of competition. The Internet has become a supplement primarily used by well educated people.

Slightly more than half of the population currently uses the Internet to, at least occasionally, search the Internet for information on health and medical matters, up from 15 percent in 2000 to 55 percent in 2010, or about 5 percent annually. This places Sweden at a high level internationally. In the US, 61 percent of the population searches for health-related information online.[1] In terms of Internet users alone, 65 percent acquire health and medical information online. However, as is apparent from graph 1, searches for health-related information are not a daily activity for most people, but rather an occasional practice. The more routine active searches that are conducted a few times per week or on a daily basis, pertain to 10 percent of internet users, which has remained unchanged in recent years. This group primarily comprises care personnel. Physicians and nurses most actively use the Internet to search for health-related information.

An increasing number of Internet users search for health and medical information
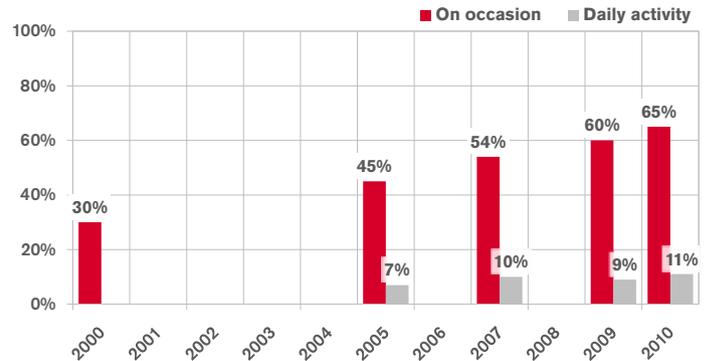
Graph 5:1 Percentage of Internet users (18+) who have always used the Internet for health and medical information on occasion as opposed to a daily basis (daily or 1-3 times weekly).

Where do people retrieve information on the Internet?

As people increasingly begin to use the Internet to search for knowledge and information, the number of websites has also increased. Among these is "1177," a website offering healthcare advice, which was conceived by the county administrative boards.[2] Also available are a long list of "ask a physician" websites,

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[1]   Pew (2009). The social life of Health information.

[2]   1177 is managed by a company called Inera, which is jointly owned by the county administrative boards and districts.

of which some are financed through advertisements and others are pay services. Social networks and blogs also often address health matters. Where do then people retrieve information regarding a particular disease or a medical problem? Eight of ten use Google and enter a word or a combination of two words in their search.[3] The search results are a mixture of advertisements and websites that many others have previously visited. Discussion forums and blogs are often among these. The directly linked addresses, the county administrative boards' care directory and the pharmaceutical catalogue FASS are the most used. In addition to 1177, which offers care consultations over the phone and online, the care guide in the County of Stockholm and the regional care directories are also included among these websites. Hidden in the "other" category are Wikipedia and "ask a physician" websites. Only a select few indicated direct blogs and social networks. However, many simple Google searches concerning health issues result in reports, advice and comments from other "ordinary" people.

The fact that Google is used by most people to search for healthcare information is not unique to Sweden. The same search methods are also used by other countries, which means that the search terms that are used in Google have proven favorable indicators of peoples' health status. For example, the number of searches for influenza-related topics has proven correlated with the number of people who actually are laid up with the flu.[4]

All Internet users, regardless of age, search for health-related information

Medical problems and health matters do not dominate the everyday use of the Internet. But more than half of Internet users search, at least some time, for health-related information. This applies to both young and elderly people with Internet access, and primarily those between the ages of 26 and 45. Those even younger, between the ages of 12 and 15, are also highly interested in health-related information. Some 91 percent have

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3   Margit Mustonen (2002)

4   Refer to Google flu trends, for example

Where do you retrieve information regarding a particular illness online?
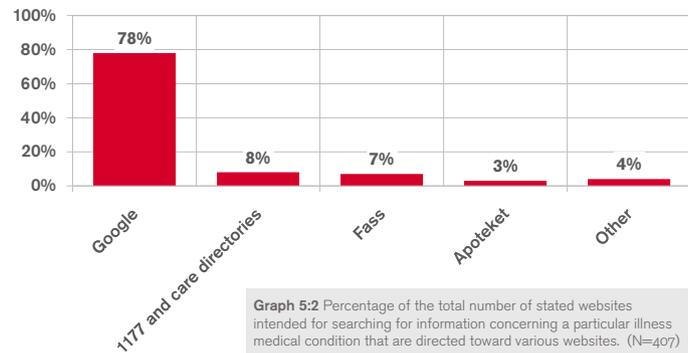
Graph 5:2 Percentage of the total number of stated websites intended for searching for information concerning a particular illness medical condition that are directed toward various websites. (N=407)

How often do Internet users search for health-related information online?

Graph 5:2 Percentage of the total number of stated websites intended for searching for information concerning a particular illness medical condition that are directed toward various websites. (N=407)
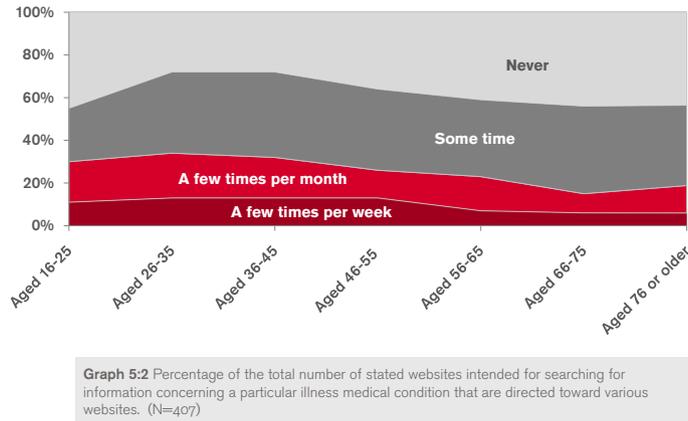
searched online for answers to health matters. However, this age group has not been asked the other questions regarding health-related matters included in this survey.

The most active Internet users (aged 16-45) also most actively search for health-related information

In addition to asking how often users search for health and medical information online, we also asked how often they used the Internet to search for information related to care

institutions, such as open hours and medication. We also asked how often users search for information regarding a particular illness or a specific medical problem. This shows us that the Internet is more often used to search for practical information related to care services, open hours and medication than for specific information regarding particular illnesses and medical problems.

Those who most actively search for health-related information are between the ages of 16 and 45. These age groups also include those who submit questions and post items concerning health and medical problems on social networks, discussion forums and blogs. Although the group is limited in terms of percentage at only 4.5 percent of the population, in absolute terms it still means that 350,000 Swedes occasionally ask questions, answer questions and comment on health-related matters on the Internet.

Care personnel are the most frequent Internet users

Care personnel use the Internet most often and most regularly to search for information regarding medical and health-related matters. Among the most frequent users are physicians, nurses and assistant nurses. Some 42 percent of those who work in the care profession use the Internet to search for health-related information on a daily basis or at least weekly. The corresponding figure for others is 10 percent.

Women more interested than men

Overall, women of all ages are more interested in health-related information than men. Some 72 percent of female Internet users search for health-related information online compared with 55 percent of men and 34 percent of women search for health-related information at least monthly compared with 21 percent of men.[5]

How frequently is the Internet used to search for care services and medical problems?
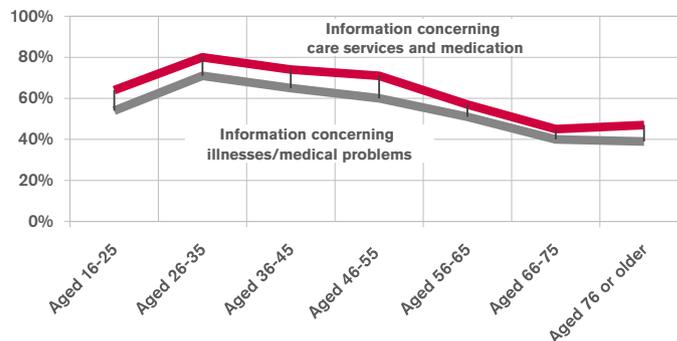
Graph 5:4 Percentage of Internet users in various age groups that some time use the Internet to search for care services and information regarding specific illnesses.

How often do women and men, respectively, search for health-related information online?
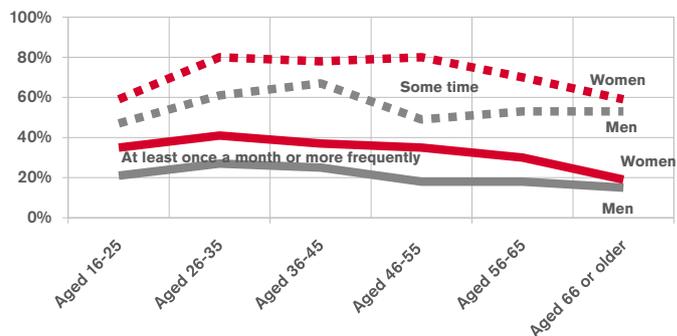
Graph 5:5 Percentage of female and male Internet users who search for health-related information online. (N=1936)

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5   The correlation is statistically significant: Chii2 = 7,1, p≤ 0,001

Percentage of the population, with varying levels of education and ages, that search for health information online
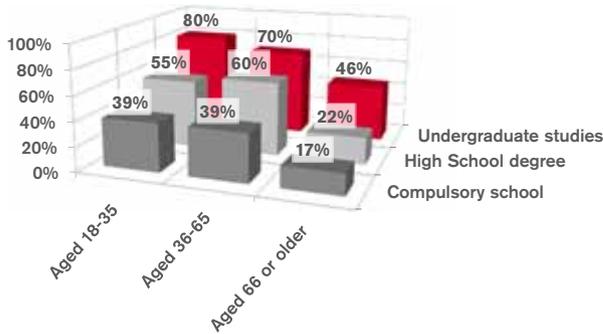
Graph 5:6 Percentage of nine different age groups in the population that use the Internet to search for health information. (N=1940)

Percentage of the Internet users, with varying levels of education and ages, that search for health information online
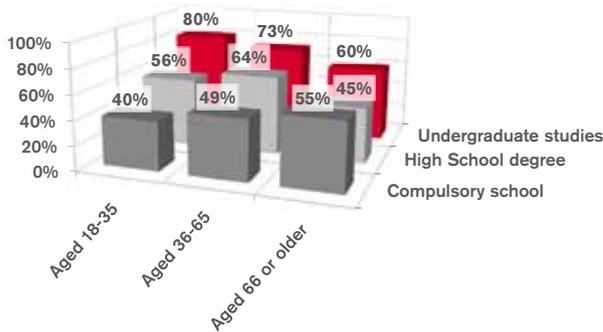
Graph 5:7 Percentage of nine different age groups of Internet users that use the Internet to search for health information. (N=1656)

Well-educated people are more active than less educated people

If we compare people with various educational backgrounds, clear differences emerge among Internet users.[6] A total of 48 percent of those with compulsory/elementary school educations use the Internet for health-related information, compared with 60 percent of those with high school degrees and 73 percent of those who have been enrolled in college/university studies. If we impose stricter requirements and only count those who use the Internet to search for health-related information, at least monthly, the figures are 18, 26 and 33 percent, where the highest figure represents well-educated people.

There is greater diversity among the population than among Internet users

Gender, age and education are all significant in terms of how the Internet is used and for the extent to which the Internet is used to search for health-related information in various population groups. Young people use the Internet for health information more than the elderly and well-educated people more so than less educated. If we divide the population into three age groups (young, middle-aged and retirees) and three education categories (low, intermediate and highly educated), we end up with nine groups. Some 80 percent of young, well-educated people use the Internet to search for health-related information online, compared with 17 percent of retirees with a low level of education.

If we instead only focus on those who use the Internet, we find that the differences in searches for health-related information are far less. Elderly people who use the Internet search for health-related information as often as young people and the differences among education levels has disappeared to a certain degree among

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6   The correlation is statistically significant: Chii2 = 8,0, p≤ 0,001

the elderly Internet users. However, education plays a role among younger Internet users. Young, well educated people use the Internet twice as often to search for health-related information compared with young people with limited education.

How important are different information sources for medical issues?

The Internet has only recently emerged as an increasingly used source of information regarding health and medical matters. How has this impacted the use of more traditional information channels? Physicians and health-care personnel have always been a key source of information regarding a particular illness or a medical condition. Publications and books have also traditionally always been available: Medical books and encyclopedias. Centers for medical information

have been available by phone and there has naturally also been contact between family and friends. Has the significance of these traditional information sources changed with the advent of the Internet?

The most important source of information remains physicians and care personnel. This applies to all ages and for men and women. Some 80 percent of the population believes that information from physicians and nurses is important or highly important. Medical books are considered the least important. This also applies in all ages. Although, highly educated people assign a higher value to books than people with a low level of education, they still indicate that books are the least important. A total of 30 percent state that books are important or highly important.

Relatives and friends remain key sources of information concerning medical issues, according to an average of 50

How important are different information sources for medical issues?
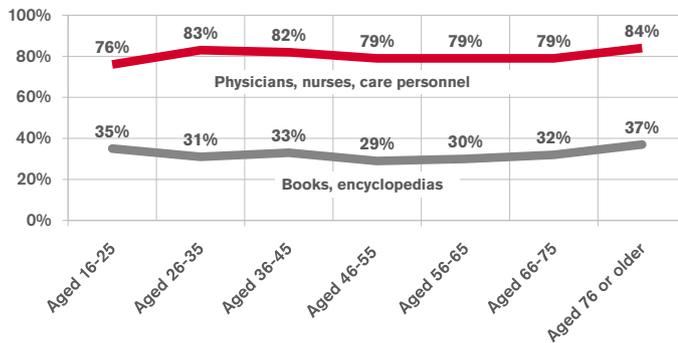
Graph 5:8 Percentage of various population age groups (aged 16 or older) consider an information source important or highly important as a source of information concerning a specific illness or medical issue.

How important are different information sources for medical issues?
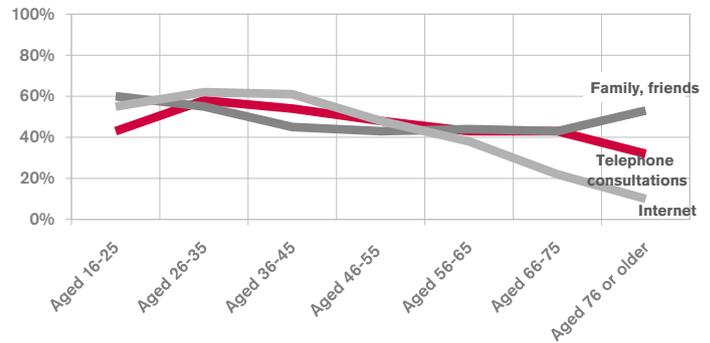
Graph 5:9 Percentage of various population age groups (aged 16 or older) consider an information source important or highly important as a source of information concerning a specific illness or medical issue.

percent of those surveyed. The youngest and oldest people say that personal contact is the most important aspect for them. Professional consultations over the phone are considered to have the same degree of significance, although there is a difference between the generations in this category. Young people between the ages of 26 and 45 are the primary group to consider this as an important source of information (nearly 60 percent). Among the elderly, the level of importance assigned to consultations over the phone is lower (30 percent).

It remains to be seen whether the Internet serves as a source of information for specific illnesses and medical issues. This assessment also divides the generations. Some 60 percent of those aged 26 to 45 consider the Internet to be important or highly important, as do highly educated people. Among people with a low level of education the corresponding figure is 30 percent, and only 10 percent of the oldest people, over the age of 75, consider the Internet an important source of medical information. For younger people, the Internet is ranked second after physicians and care personnel, although it ranks last among the elderly.

Those who consider the Internet an important information source also consider other sources important.

We have thus far only studied individual information sources. But how are these assessments related? Do those who consider the Internet important believe that other information sources are less important? No, this is not the case. This group consistently assigns higher importance to other sources than those who consider the Internet less important. Does this also apply to the relationship with those who use the Internet to search for information concerning health and medical issues? In terms of personal contacts with relatives and friends, or professional contacts with physicians and nurses, there are no differences between those who use the Internet for health-

related information and others. However, there is a difference in the assessment of professional phone consultations and of books. Compared with others, more of those who search for health-related information consider these information sources important. The Internet thus seems to supplement other sources of information rather than render them irrelevant.

The most important aspect for those in poor health is personal contacts with care personnel.

All of the participants in this study assessed their personal health on a scale of one to five, from very poor (1) to very healthy (5). What level of importance do those in poor health assign to the various sources of information? The assessments do not differ a great deal from those in better health, except for one point. More of those with health issues say that contact with physicians and nurses are highly important (71 percent) compared with others (53 percent).

Internet users with health issues use the Internet to search for health information more often than others.

Those in poor health also more actively search the Internet on a somewhat more frequent basis to retrieve practical information concerning available care services and medication (36 percent do so at least once a month, compared with 13 percent for those in good health). Those with health-related issues also use the Internet more often than those without health issues in terms of searching for information concerning a specific illness or medical condition (33 percent do so at least once a month, compared with 13 percent for others).

The Internet is a supplement to other sources of information.

We have now asked ourselves whether all of the information available on the Internet has made telephone consultations, medical books and even care personnel superfluous. The

answer is no. The Internet has become one of several sources for health-related information, also for those who are regular Internet users. Those who regularly search for health-related information online also regularly use other sources of information. Internet use does not preclude or replace other, more traditional forms of media and information channels. This conclusion is not exclusive to Sweden. In the US, it has been confirmed that people still use traditional sources for health information, although some people have intensified their involvement in the online world.[7]

The fact that the Internet serves as more of a supplement than an alternative has also been proven in other areas. For example, this applies to reading the newspaper: regular readers of paper newspapers also often regularly read online papers. This also applies to the area of music, where those who listen and download music also more frequently use other music sources.[8]

Half of the Swedish population does not use the Internet to search for health-related information

Half of the Swedish population has discovered the Internet as a source of information and knowledge, not only for open hours and the selection of care institutions, but also for specific illnesses and health problems. However, this also means that the other half of the population does not use the Internet for these purposes. The most significant differences are between the young well-educated groups, of whom 80 percent uses the Internet to retrieve health-related information, while only 17 percent do so among retirees with low levels of education.

An explanation for this is inexperience and fear of new technology among many elderly people. However, users must also have the experience and ability to understand and apply the information that the Internet provides. This information can be perceived as incomprehensible and difficult to manage and thus irrelevant.[9]

Problems with health-related information on the Internet

Patients have indicated that they appreciate easy access to information on the Internet, while they also feel that it can be difficult to locate and understand.[10] This is due in part to the amount of information that is available and in part to contradictory and complex information. It can be difficult to gain any form of clarity regarding health problems.[11]

Several studies also indicate a lack of quality in some of the information that is produced when searching for information on Google. The information may also be out-of-date and insufficient.[12] The source of the information is often missing and the dates on which revisions were made are often inconsistent.[13]

Despite this, the number of people who still use the Internet to search for health-related information increases, which may serve as evidence that people increasingly appreciate and have positive experiences with this new approach to information and knowledge about care and health. This type of Internet use may become highly frequent, particularly in unique life situations.[14]

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7   Pew (2009). The social life of health information.

8   Refer to, for example, Findahl (2007). Swedes and the Internet 2007. (Page 44).

9   Refer to Ek (2005). Hälsa i en samhällelig kontext. En empirisk och analytisk studie. (Health in a public context. An empirical and analytical study).

10   Stevenson, etc. (2007), Information from the Internet and the doctor-patient relationship: the patient perspective - a qualitative study.

11   Sommerhalder, etc. (2009).), Internet information and medical consultations: Experiences from patients´ and physicians´ perspectives.

12   Sambandam, etc. (2007). Quality analysis of patient information on knee arthroscopy on The World Wide Web.

13   Davallius, C-A & Flensner, G (2009), Quality of some Swedish websites on "Heart attack" assessed with the EU quality criteria.

14   Women pregnant with their first baby use the Internet on a daily basis or several times per week to search for pregnancy-related information. Broman & Ericson (2008). The Internet as a source of information, a form-based study regarding the ways in which women pregnant with their first baby use the Internet.
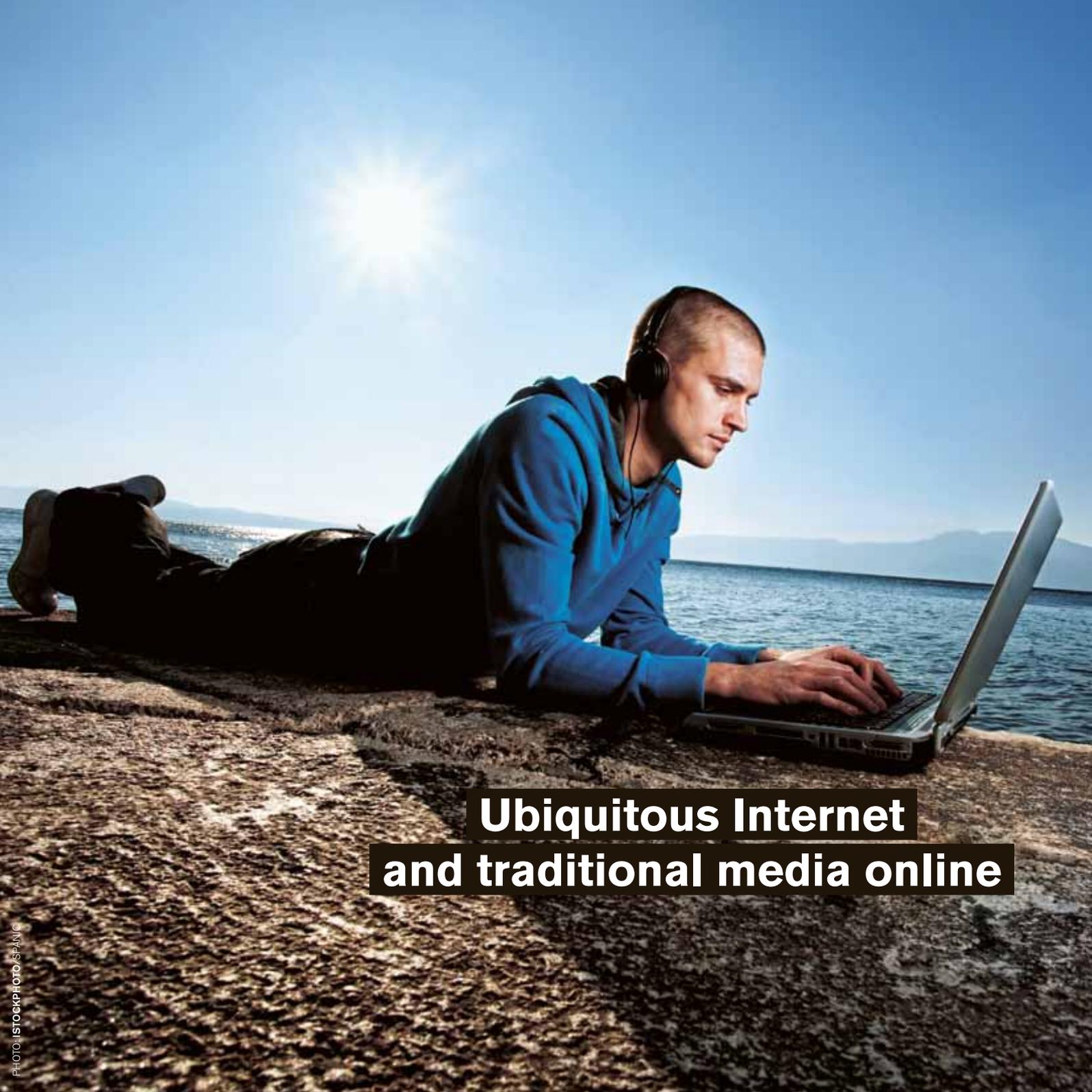
Ubiquitous Internet and traditional media online

The Internet was initially synonymous with a stationary computer and a fixed connection to a telephone connector. There have since been many innovations in laptops, smartphones and wireless connections. The English term "ubiquity" – that something is omnipresent – has become emblematic of the aim of making the Internet available and usable everywhere. The old, traditional forms of media shall also be available on the Internet. The question is, how much progress has been made toward this goal?

Mobility in the home

One way of achieving increased mobility in Internet use is by deploying a laptop. Slightly more than half the Swedish population (57 percent) has access to a laptop, and two of three (67 percent) Internet users. Combined with a wireless network at home, the Internet can be used in the kitchen and in front of the TV. It can thus be said that 42 percent of the population are mobile Internet users at home.

Laptops are most frequently used by highly educated people (70 percent) and among young people, of which 77 percent of those aged 16 to 25 own one. Young girls in particular, aged 12 to 25, want to be mobile in their use of social networks, while young men use stationary computers, which suits their game playing.[1]

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[1] Use of laptops: 63 percent of girls aged 14 to 15; 33 percent of boys. Findahl (2010). Young Swedes and the Internet 2009.
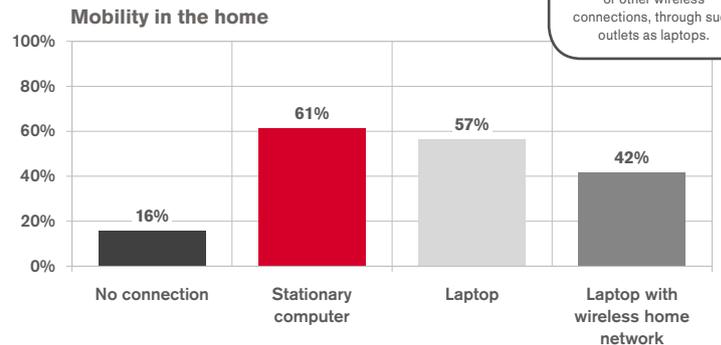
Mobile Internet is defined as the situations in which the Internet is used directly on a mobile phone or hand-held unit. We have not included the use of mobile broadband or other wireless connections, through such outlets as laptops.

Mobility in the home

Graph 6:1 Percentage of population that has access to various forms of computers.

Mobility outside the home

Wireless networks in buildings, on streets and on squares, and wireless broadband via the mobile network in particular have enabled computers to be connected to the Internet on trips and in locations outside the work and home. The Internet is always at hand via smartphones.

Mobile Internet has long been present in pioneering countries, such as Japan and South Korea, while progress in Sweden has been slower. The increase has been modest at a few percent annually. Some 22 percent of mobile users currently use the Internet on their handsets on occasion to go online. News and weather or practical information such as addresses and timetables are the primary search targets. In the past year, there have been major changes in mobile

Internet use. The number of users has not increased a great deal, but the use itself rose sharply between 2009 and 2010.

Use of mobile Internet increasing

In 2009, 42 percent of those using mobile Internet searched for news; in 2010, that figure was 64 percent. Some 52 percent currently read/send e-mail via their mobile phone. Last year, that figure was 20 percent. The major difference from previous years pertains to connections to social networks and the viewing of TV/video clips. This was previously highly limited, but nowadays 42 percent use their mobile phone to at least occasionally visit their community and 32 percent use their mobile phone to watch TV/video clips. Mobiles are thus currently used much more often than before to go online.

Young people between the ages of 26 and 35 are the primary group to use mobile Internet. Four of ten do so at least occasionally. Two of ten in this age group do so daily or at least a few times per week. Some of these people do not pay their mobile expenses on their own, but this is a limited group, and most of those who use mobile Internet personally pay for the expenses.

Percentage that occasionally use the Internet on their mobile phone
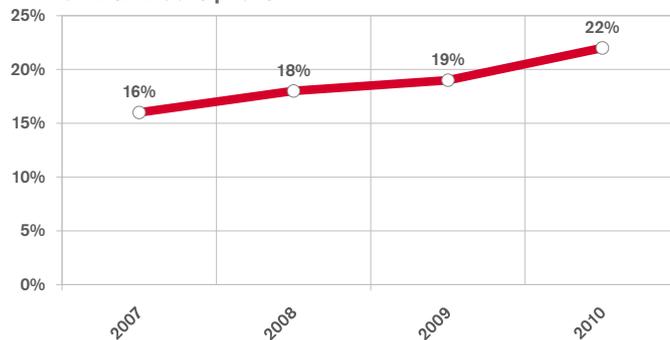
Graph 6:2 Percentage of population that occasionally accesses the Internet through their mobile phone.

What do people do while online on their mobile phone?
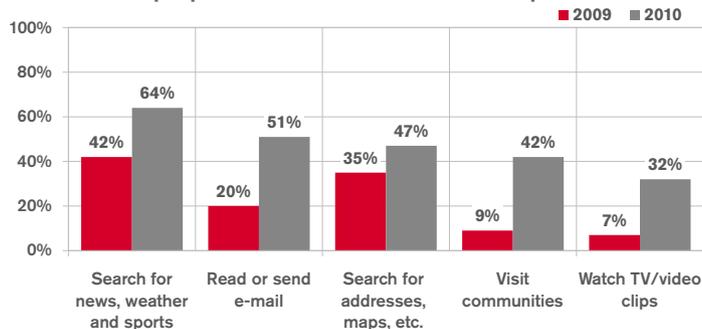
Graph 6:3 Percentage of those with mobile Internet that use their mobile phone for various activities.

Frequency with which various age groups use mobile Internet
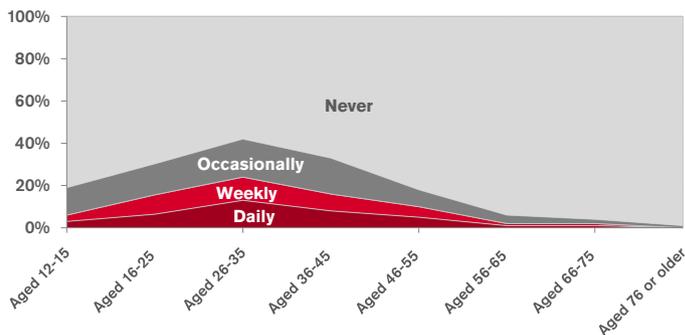
Graph 6:4 Percentage of mobile users of various age groups that access the Internet on their mobile phone.

People are increasingly acquiring mobile broadband

Another way of accessing the Internet is via mobile (3G) broadband. Using this type of connection, computers can access the Internet anywhere that offers mobile coverage. It can be used on trips and at hotels, but also at your summer cottage and on your boat. It is most often used as a supplement to a fixed connection. The number of users has increased in the past year, up from 9 percent in 2009 to 12 percent in 2010. This means that slightly less than one million Swedes can connect to the Internet essentially

Frequency with which the Internet is used in places other than at home, work and school.
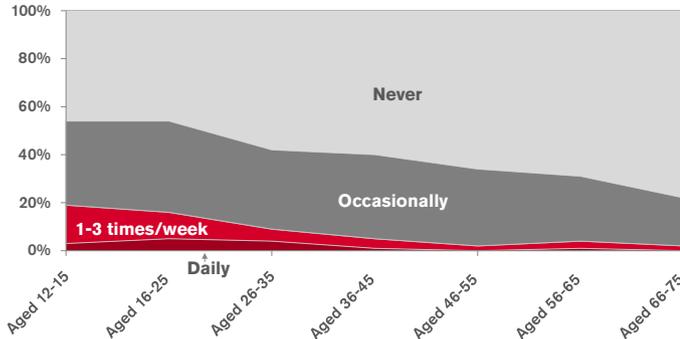
Graph 6:5 Percentage of Internet users in various ages who use the Internet in places other than at home, work and school.

Frequency with which the Internet is used while in transit
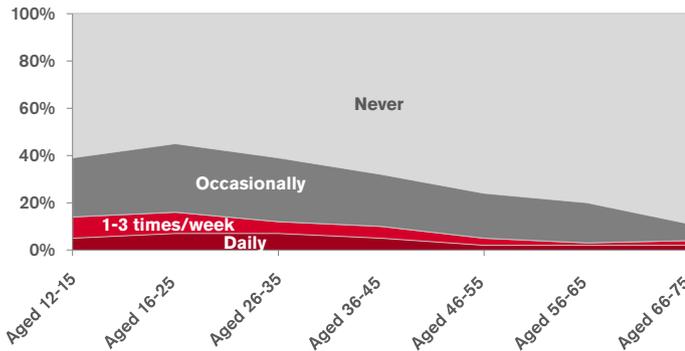
Graph 6:6 Percentage of Internet users of various ages who use the Internet while in transit.

wherever they want, provided that they live in a more developed part of the country.

Are we headed toward an increasingly mobile society?

The Internet is predominately accessed at home. A total of 97 percent of those who use the Internet do so at home. Using technological advances, people have increasingly begun to use the Internet in places other than at home, work and school. What impact does this have on daily Internet use? We have two ways of measuring this: one is to record how often the Internet is used in places other than at home, work and school; the other is to measure how often the Internet is used while in transit.

Mobility is greatest among young people and they also most often use the Internet in places other than at home. Two of ten do so at least once per week. Overall, 30 to 50 percent of all age groups have tried this.

Many people are in transit each day, although this is not when most people use the Internet, which is still done at home. However, one of ten does so on a daily basis or on occasion during the week. This is the beginning of a ubiquitous Internet: a trend whose future is dependent on the degree to which Swedes adopt mobile Internet. To date, most people are taking a wait-and-see approach.

The concept of a ubiquitous Internet includes the notion that all traditional forms of media, such as TV, newspapers and radio will be available any time and everywhere on demand.

Most newspapers are also continuously updated online, and TV and radio shows are also available on the Internet. However, the TV in front of the living room couch and the traditional newspaper remain dominant. The Internet has become a supplement that many people have tried but that are
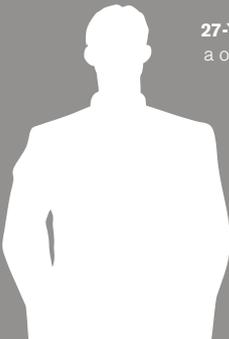
27-YEAR-OLD MALE IN TRANSIT | Young man who likes testing new technical devices and trying new services. He has a live-in partner and a one-year-old child. He uses the Internet several times per day, both at work and at home, where he can connect using a stationary computer, a laptop, a game console and a mobile phone. He also occasionally reads an e-book. He visits his communities and social networks, shares files, sends e-mail, reads the news, checks schedules, addresses and trips, all on a daily basis. He also reads online newspapers, listens to the radio, watches TV, listens to and downloads music, as well as watching and downloading videos. He accesses the Internet daily while in transit. He has a mobile broadband connection for his computer and uses his mobile phone to access the Internet on a daily basis to check the news, access social networks, TV/video clips, addresses, maps and to send/receive e-mail. He does not have a blog, does not make status updates or comment on what others have written. He believes that using the Internet has resulted in less time being spent with his family and much less time with friends. The productivity of his work has not increased, but rather decreased. He watches TV and listens to the radio more than he uses the Internet. The TV is often on when he uses the Internet at home. He spends more time reading paper newspapers than online newspapers and he subscribes to a music service to gain even more access to music. **| ADVANCED ENTHUSIAST**

Frequency with which traditional forms of media are accessed online
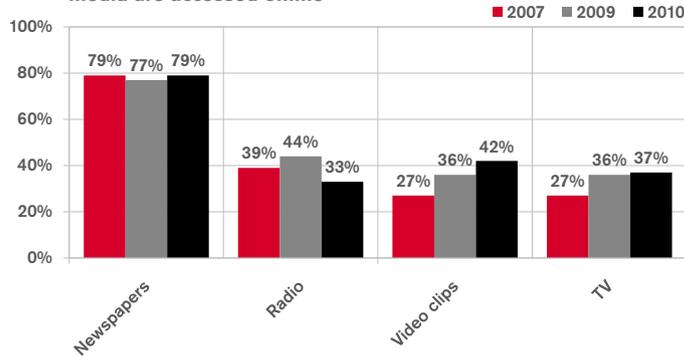
Graph 6:7 Percentage of Internet users who have ever used a traditional form of media online.

Frequency with which traditional forms of media are accessed online on a daily basis
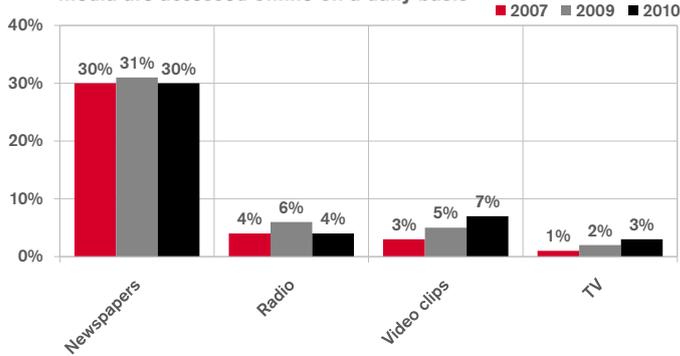
Graph 6:8 Percentage of Internet users who use traditional form of media online on a daily basis.

not included in their daily routines. Some differences are now becoming apparent in this area.

We can on one hand see a stabilization. The percentage of Internet users who listen to online radio and read Internet newspapers has remained at about the same level in recent years. On the other hand, the role of online visual media is still increasing. Technology and the ability to transfer data have improved. Video clips have become increasingly popular, as has watching TV online. However, daily consumption is modest in relation to total TV viewership. But, reading the paper online has become a more important and frequently practiced activity among Internet users. The number of people who read online papers has not increased, but those who read the paper online spend more time doing so nowadays. Eight of ten Internet users read the web versions of papers, at least occasionally. One of three does so daily.

The average time spent reading the paper online among Internet users is 13 minutes per day, although if we focus on those who earnestly read online papers, the time spend increases to 20 minutes. This can be compared with 28 minutes per day, which is the time that Swedish people spend reading the traditional newspaper on average.

Online papers have thus established themselves as a part of peoples' everyday lives, although not at the expense of reading the traditional newspaper. Those who spend time reading online papers also tend to spend time reading traditional newspapers, resulting in a positive correlation.[2] At the same time, the traditional version and the continuously updated web version have become increasingly different. In the beginning, an exact copy of the traditional version was posted on the Internet, whereas online papers are nowadays filled with video clips, and articles have become shorter paragraphs.

The launch of e-books

E-books and the electronic reading tablets enable users to bring an entire library of books anywhere they go. E-books have been around for a long time, but have gained momentum anew through Apple's launch of the iPad in 2010, in competition with several other e-tablets. These devices are also intended to for reading the newspaper and watching TV and video clips. To date, their prevalence is limited and only a fraction of the population (1.6 percent) has access to an e-tablet, while twice as many (5 percent) have tried using one for reading, which corresponds to a couple hundred thousand readers.

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2   The correlation is statistically significant p≤ 0,001.

These new adopters of technological devices are predominately men: 80 percent of owners of such devices and 63 percent of readers. Half of these new adopters are under the age of 30 and the rest are spread among all ages. Many of them are interested in culture and literature and read such content online. All educational levels are represented. Most adopters like testing new technical devices.

Active participation or passive reception?

Initially, the Internet was viewed as an interactive media as opposed to traditional media where one professional group produces a content that is passively received by the public. On the Internet, users themselves must be active and search for what they are interested in. On the Internet, you are able to download and upload information. Users are also able to produce content, not only text but images and videos, which they can share with others. To what extent does this occur? How much of the content on the Internet is created by users themselves?

In Graph 1, with a list of the most common activities where the content is generated by users themselves, we find content intended for private communication is at the top of the list. This pertains to e-mail and attaching various documents to the e-mails. Practically everyone uses e-mail and this was also the reason the Internet was once created. Instant messaging, MSN, produced continuously by young people, should be highest on the list. However, since this activity is not used by all age groups, the activity placed further down the list.

This is followed by a number of activities connected to communities and social networks. The content here is generated by users themselves by uploading private photographs, profiles, commenting on what others write and status updates on what they are doing. Many also write their own blogs. These activities have become more common in the past years as more become involved in social networks. Millions of Swedes produce their own content.

This is followed by a number of activities that do not occupy the vast majority, for example, file sharing, uploading videos, asking/commenting health issues or blog. This graph explains the average values calculated among all Internet users, which means that these activities may be very common among smaller groups of users. We shall revisit this matter later.

The figures in Graph 1 show how many individuals were involved in the various activities at some time. The distribution is shown but not the frequency. Graph 2 gives a better perspective of how common the various activities are. It shows how many Internet users are occupied with the various activities on a daily basis or at least some time during the week. The percentage figures may seem low but keep in mind that 10 percent corresponds to 800,000 individuals (over 12 years). Accordingly, approximately 800,000 Swedish Internet users post items on the Internet in their everyday lives, on a daily basis or at least a few times per week. About 1.8 million people comment on what others have written on a daily basis.

Communities and social networks

Communities have always existed on the Internet, where people with common interests have been able to meet, ask questions and comment each other. What has happened is the arrival of Internet communities, which are not based on common interests but as social networks where mainly friends and friends of friends could meet, as well as other people not known previously. Initially, mostly teenagers were interested in these social networks.[1] Later, interest spread upwards in age groups and today, a majority of

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1   Lunarstorm was an early Swedish community that was also international. In 2003, there were one million members. Skog (2010). Software environment for community. Today, Lunarstorm is closed.

What do Internet users create on the Internet?
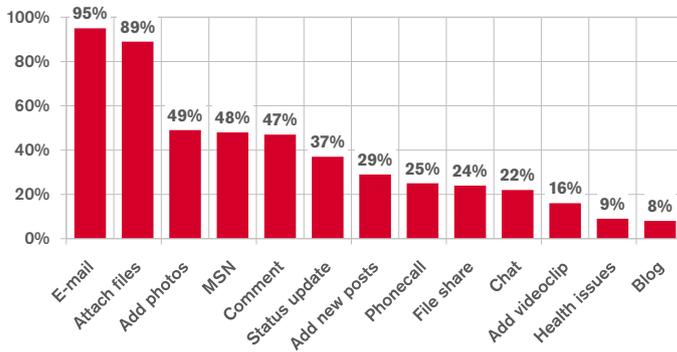
Graph 7:1 Proportion of Internet users who occasionally spend time on different activities.

How many are active on a daily basis on various Internet activities?
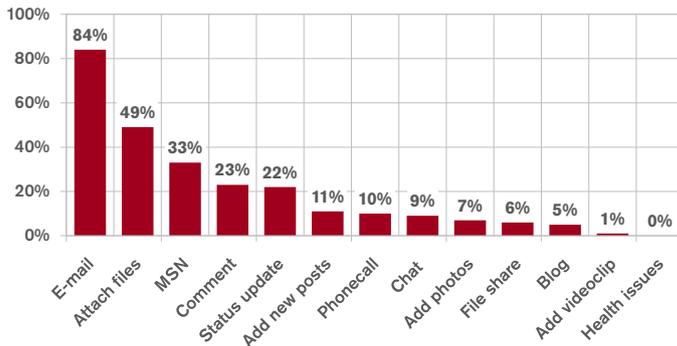
Graph 7:2 Proportion of Internet users who daily or at least some time during the week are involved in different activities.

Internet users up to 45 years of age are members of a social network, primarily Facebook. Interest then decreases, but four of ten aged 55 years are members.

In prior surveys, we asked Internet users if they are members of a community. In 2010, we conducted a supplementary survey and also asked whether they visit a social network. As we suspected, it seems that communities are currently more restricted and the term social network is regarded as a broader and more open phenomenon. Consequently, a great deal of people, particularly young people, does not regard themselves as members of a community but a visitor to social networks. Graph 3 shows the responses to both of these questions for 2010.

The graph shows that the major leap in social networking among young people occurred already between 2005 and 2007. Among those over 35 years, the increase occurred in recent years and for the elderly during the past year. The increase has been dramatic in the past year and the proportion that visits social networks have more than doubled in the 45 plus age groups.

We have also seen how interest in participating in social networks has spread downwards in the age groups. Visitors are currently showing up already at the age of eight. In the nine-to-ten age group, 25 percent have begun participating in a community and after 12 a majority of young people participate. Bilddagbok (an image diary website) is most common among young people, supplemented by Facebook. In the 19-25 age group, interest in participating in social networks is highest. Some 88 percent are sometimes active and 60 percent visit social networks on a daily basis.

It is most common that contact lists on the social networks are people who are close friends who meet in real life. This is followed by people who are related and family members. In this respect, the differences between the various age groups are small. But, it is very common that young people include former acquaintances on their contact lists, people they no longer have any contact with other than via the Internet.
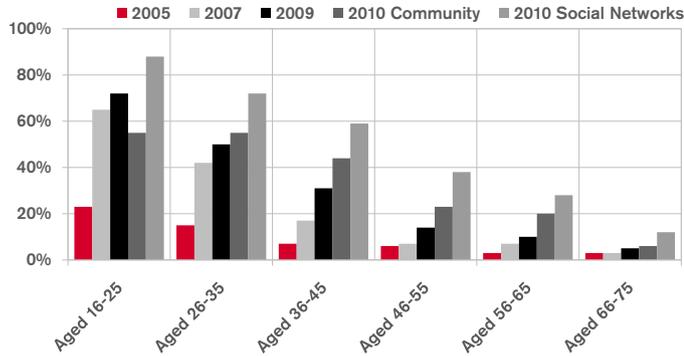
Graph 7:3 Proportion of Internet users in various ages who during
different years participate in a community.
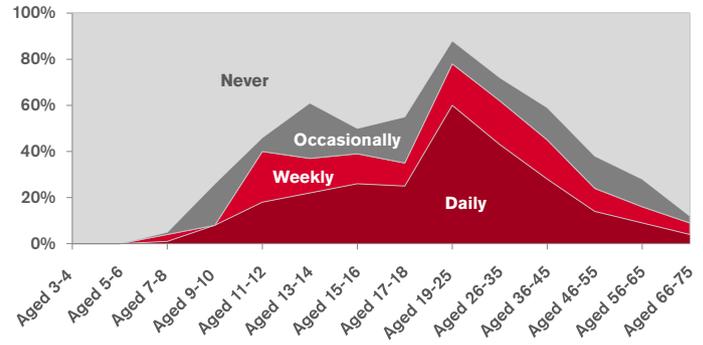
Graph 7:4 Proportion of various age-groups of Internet users who participate in social networks in
varying frequencies.

This is less common among the elderly. Young people has
also more often added individuals they only had contact with
and met online.

Internet filled with user-generated content

In 2010, 31 percent of the population (12 plus) are members
of a community and 46 percent visit social networks. In
round numbers, this means 3.5 million Swedes are actively
involved in generating content in social networks on the
Internet. Most active are those in the 16-25 age group. Let us
take a closer look at their content-generated activities.

Some 37 percent of young men and 54 percent of young
women update their status daily or a few times during the
week. This means that they write about what they are doing
or something that has happened. Some 54 percent comment
on what others have written with the same frequency and
22 percent post items on open discussion forums. About
11 percent of young men and 23 percent of young women
upload digital images online at least a few times per week
or daily.

Combined, this signifies a high content production. It is
not merely a matter of a few posted comments but hundreds
of thousands of posts and comments. It pertains to user-

**Who are included in the contact lists of
young people and the elderly?**
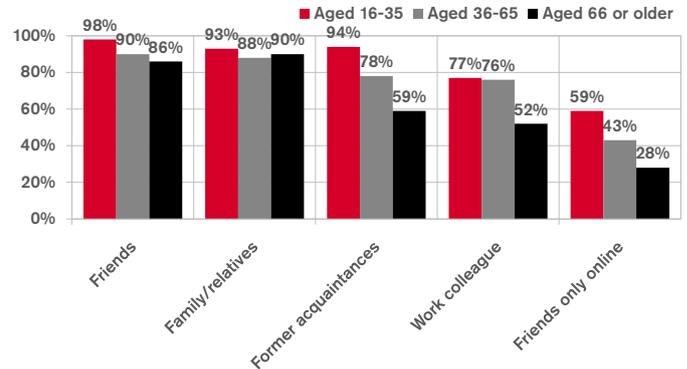
Graph 7:5 Proportion of social networking in varying age groups who added people from different
groups to their contact lists.

generated content that had not existed before in the Internet's history, but only in the recent years coinciding with the arrival of social networks. Admittedly, discussion forums and communities have existed for some time but the volume of user-generated content has not been as extensive as it is now.

What is it then that makes this form of content production so common in the younger Internet generation? One answer is that it is easy to become a member of a social network. The effort needed to generate content has a low threshold. It creates personal value and major networks are divided into smaller groups, making each individual feel at home. All of this means that the Internet is able to offer a social tool that users actually want to use.[2]

Naturally, a subsequent question is what is the content that is generated by Internet users? How should the user-generated content that fills the Internet be characterized? It is an interesting question, but the answer cannot be given based on this survey.

However, not all Internet users participate in this content production on the Internet. There are major differences between generations and between individuals with varying educational backgrounds. In the final chapter, we will revisit this problem.

What private information can be published on the Internet?

On the social networks, different types of private information are published. Some is available to everyone. Other information may be accessed only by a selected few. How do Internet users feel about this? What should be kept private and what should be available to everyone?

A majority does not want information about an individual's finances, calendar and health to be available on the Internet. A small percentage believes that contact information and information about an individual's work may be accessible to everyone.

In general, young people aged 16-25 are most open about

personal information on the Internet. This does not mean that they believe that everyone should have access to this information, but it should not be strictly private but available to certain other selected people. However, about 50 percent, including young people, believe that finances, health and calendars should be completely private.

The elderly and middle age individuals, aged 46-75, are more restrictive with private information on the Internet. A majority of them believe that most private information should not be available on the Internet, with the exception of work and contact information.

The oldest, over 75 years, are also restrictive in their view of the amount of private information that should be available on the Internet. However, with regard to private health and finances, they have a more open attitude than other age groups.

The very youngest, 12-15 years, are most negative to publishing private information on the Internet. Only one of five believes that information about friends; contact information and jobs should be available to everyone. But in all other respects, support is very weak among the youngest for general publication of private information.

Not many bloggers in relation to the population, but many among young women

The proportion of the population with their own blogs has not been high in the past years and not this year either. In 2010, 6 percent of the population, or 8 percent of users (12 plus) write blogs. This corresponds to 500,000 people. Women are more active (11 percent) than men (4 percent).

In 2009, it seemed that bloggers were primarily young women. Closer examination revealed that this was also the case in 2010. Women have even strengthened their position. And they are active. Two of three write their own blog at least one to three times per week.

Young women dominate among bloggers

Blogging has become part of young women's Internet culture. It begins in the early teen years. Already at the age of 12, half of all girls are active. And among those between the ages of 12 and 25, a majority of the young women have experience in

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2   Refer for example to Shirky (2008), Here comes everybody. The power of organizing without organizations.

Should private information be shown on the Internet?

Legend: No | Yes, for some people | Yes, for everyone

Graph categories: Finances, Calendar, Health, Private photographs, Where you are, Friends, Contact information, Job
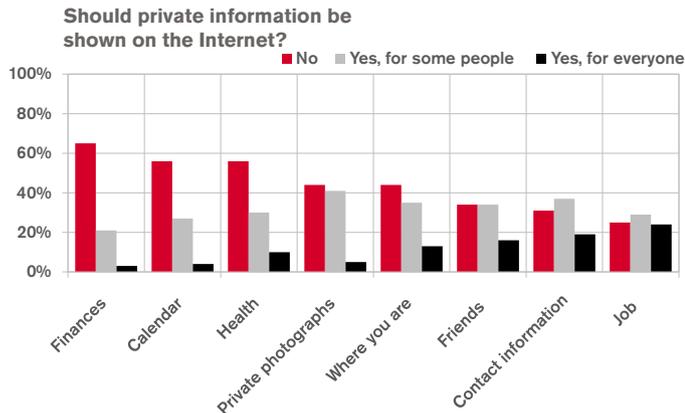
Graph 7:6 Proportion of Internet users who believe that different types of private information could be available to everyone, only for selected few or not at all.

How many young women blogged in 2009 compared with 2010?

Legend: 2009 | 2010

Age	2009	2010
12-15 år	19%	27%
16-25	20%	32%
26-35	11%	10%
36-45	5%	8%
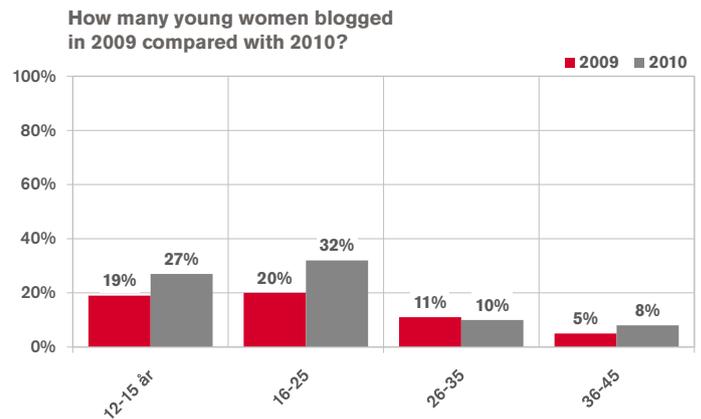
Graph 7:8 Proportion of female Internet users with their own blogs 2009 and 2010.

How many blogs 2007 – 2010?

Year	Percent
2007	3%
2008	5%
2009	5%
2010	6%
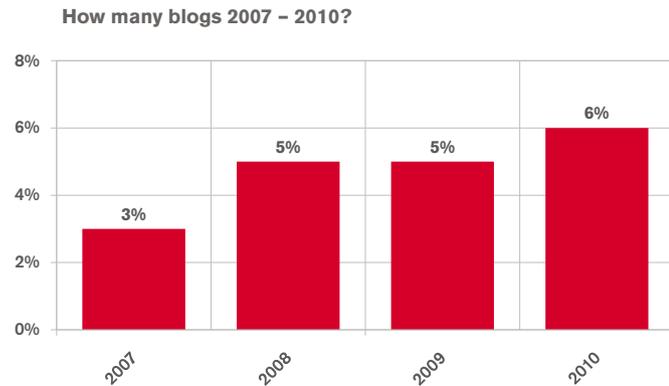
Graph 7:7 Proportion of population (16 plus) with own blogs.

Blog culture among young women

Legend: Writes blog or have written blogs | Reads blogs

Age	Writes blog or have written blogs	Reads blogs
12-15 år	50%	93%
16-25	64%	78%
26-35	18%	58%
36-45	12%	52%
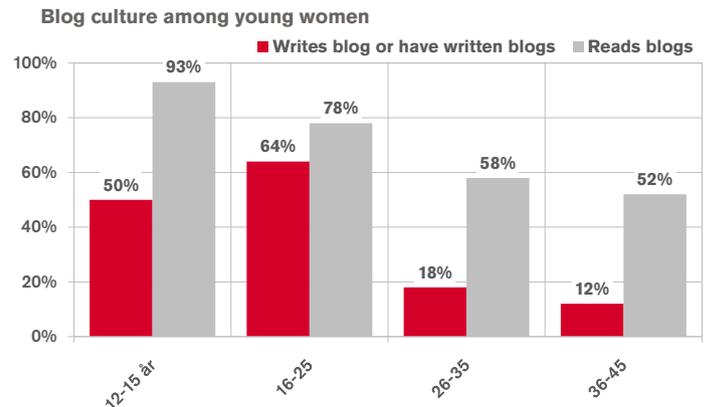
Graph 7:9 Proportion of young women who writes or have commented on a blog or read blogs.

blogging. However, blogging is not maintained continuously, meaning that nearly the same amount have had a blog as those writing blogs. The blog culture also includes reading others' blogs. This is one of the most common activities among young women. Some 93 percent of girls between 12 and 15 years read others' blogs, 78 percent between 16 and 25 years.

Behind the apparent low figure of 6 percent bloggers in the population is a highly active group of young female bloggers. They continuously produce new content on the Internet and they read and comment on what others write. If we summarize the results and combine those who write blogs with those who wrote, we find that two of three between 16 and 25 years share the experience of writing their own blogs and three of four read others' blogs.

File sharing on the same level as the past

File sharing is a form of barter trading, where Internet users' own computers are connected to an extensive network, which is able to sense what is available in the connected hard drives. It may be organized in a specific manner as with the music service, Spotify. However, in most cases it is not centrally organized; specific software is used to connect to file sharing networks. Up and downloading, particularly high-resolution films, occupy most of the traffic volume in the Swedish broadband networks.

In 2009, we were able to see that the proportion of file sharing declined somewhat. Until then, the proportion of file sharing increased for each year. In 2010, the level returned to the level of 2008. After a slight dip, file sharing is currently slightly above the previously highest level. Some 20 percent of the population or 24 percent of Internet users share files, at least occasionally. In addition to this, there are 18 percent of Internet users who used to share files but do not anymore.

In the past, file sharing was dominated by young men. This still largely applies today if we compare 2010 with 2009 and 2008. The difference between men and women has increased. About 29 percent of the men share files compared with 10 percent of the women.

As blogging is part of young women's Internet culture, file sharing is part of young men's Internet culture. Half of the young men between 16 and 25 share files and an additional 25 percent in the same age group have shared files.

How has the proportion of file sharing varied during the 2004 – 2010 period?
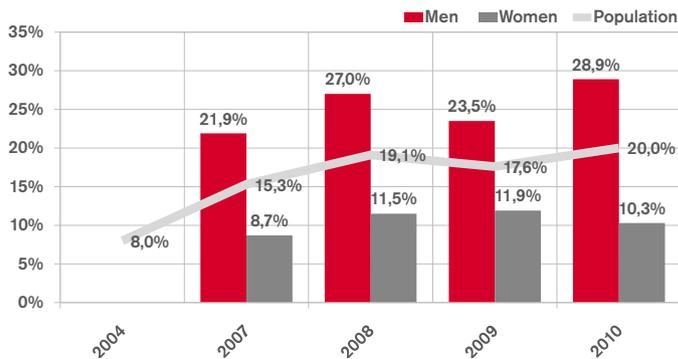
Graph 7:10 Proportion of men and women in the population (16+ years) that share files.

Digital participation

W e have now seen the amount of Internet users that are active, who not only utilize the possibilities offered by the Internet but are also involved in generating some of the content available online. However, there are also those who do not use the Internet at all and those who admittedly acquired access to the Internet but use this possibility rarely. How many are thus outside modern information society and where should the limit be placed between those referred to as digital participants and those who are excluded? What is required for someone to be called digital participant and what proportion of the population is included in this participation?

Sense of belonging

Let us begin with a question that we have been asking for the past ten years: "You have certainly heard references to surfing the Internet, using e-mail and the new information technology. Do you feel you belong to this new information society?" The response for ten years ago, in 2000, was that 35 percent of the population said "YES". Twice as many said "NO". At that time, about half of the population had access to the Internet.

How many has felt and feel they belong to the new information society?
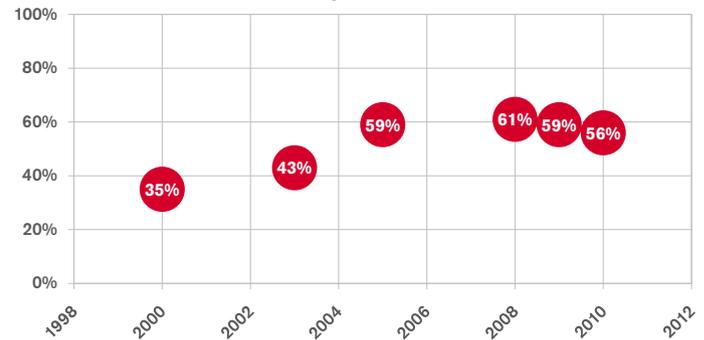
Graph 8:1 Proportion of the population (18 plus) who feel they "largely" or "completely" belong to the new information society.

In the following years, the Internet spread to new population groups and the sense of belonging increased. In 2005, 59 percent of the population felt they largely or completely belonged to the new information society. However, a great deal has happened since then. The proportion that feels they belong has neither increased nor decreased in recent years. Slightly more than half
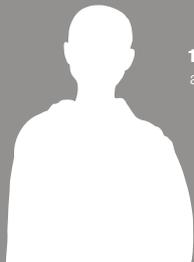
13-YEAR-OLD BOY WITHOUT A COMPUTER | Began to use the Internet in 2009. He does not have access to a computer at home but uses the Internet in other places a few times per month. He regards himself as computer literate and does not feel at all belonging to the new information society, but would like to have access to the Internet at home. In school, computers are not used. He is a member of the scouts, has a mobile and sends SMSs. He watches TV a lot and plays games. His mother is a single, low-income earner and works as an administrative assistant. She uses the Internet at work a few times per week but there is no computer at home.

How many, in varying ages, feel they belong to the new information society in 2010?
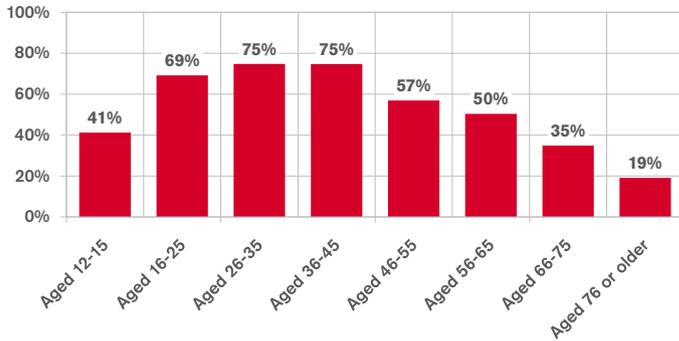
Graph 8:2 Proportion in varying ages that feel they "largely" or "completely" belong to the new information society 2010.

How many men and women, respectively, are interested in testing new technical devices?
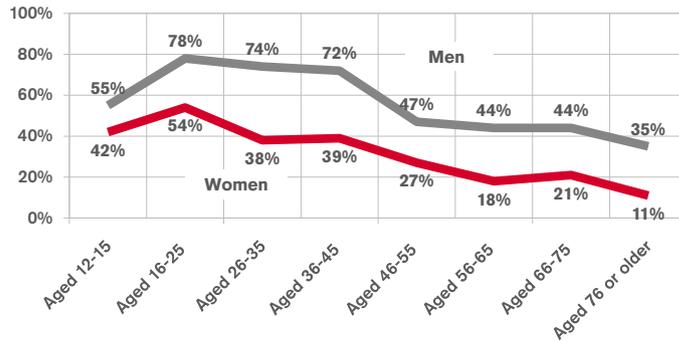
Graph 8:3 Proportion of men and women, respectively, in varying ages that are quite or very interested in testing new technical gadgets.

of the population feels they belong, while the other half do not. The difference between the generations is significant. The greatest sense of belonging was among those between 16 and 45 years. Three of four in this age group feel they belong compared with a minority of the elderly.

We can now ask what distinguishes those who feel they fully belong to the information society. We find two components. One pertains to the attitude to technology and the other component is about how the Internet is used. The technology component displays a strong connection to the sense of belonging. It involves interest in testing new technical devices and services and the ability to connect and install new accessories.

Technical threshold

Interest in testing new technical equipment and devices is highly significant to early users; those among the first to test new technology. This also increases the sense of belonging. However, if this interest is lacking and there is uncertainty when faced with new technology, other motivation is required to cross the technical threshold. We can see how this works among young women, who are not interested in technology but are nevertheless among the most active Internet users and who have become co-generators of content on the Internet. Lack of interest in technology can be overcome. Systematic differences in the sense of belonging between men and women do not exist either among young people and middle-aged.

Active usage

The second component behind the sense of belonging, besides the interest in technology, is the manner in which the Internet is used. It is a matter of Internet usage characterized by own

activities, such as participating in communities and social networks, having a blog, purchasing and paying for products, listening to and downloading music, paying bills. The sense of belonging also includes using the Internet to search for more specific information such as addresses and schedules, maps and directions, health services and specific medical information and information relating to specific interests. If you believe that you master these activities on the Internet, you feel you belong to the information society. There is also a strong connection between the sense of belonging and the time spent on the Internet at home and at work. The more time spent on the Internet, the greater the sense of belonging.

What skills and activities are connected to the sense of belonging in the information society?

	Correlation value	Significance
Connect and install new accessories	,444	***
Purchase and pay for products/services	,289	***
Search for addresses, schedules, etc.	,295	***
Visit social networks	,263	***
Listen to and download music	,258	***
Search for maps and directions	,254	***
Search for information on hobbies, special interests	,208	***
Holder of e-identification	,191	***
Pay bills	,177	***
Internet time at work	, 237	***
Internet time at home	,180	***

Table 1. Correlation value (Pearsons) between the sense of belonging and responses to a number of different questions. The higher the value (0 − 1), the stronger the correlation. (= p≤ 0,001)

Who feel they do not belong to the information society?

While there is a large group who feels they belong to the growing information society, there is also a large group who feels they do not belong. There are those who do not use the Internet but also those who admittedly use the Internet but whose usage is restricted. The time spent on the Internet at home and at work is less compared with those who feel they belong. Particularly crucial is Internet use at work. Those who regularly use the Internet at work feel they belong to the information society to a greater extent.

There is also a technical component connected to the sense of not belonging. Some 7 percent say that they are not at all computer literate and an additional 28 percent only slightly skilled. Combined, this means that every third Internet user believes he/she is not particularly computer literate. Most of them are the elderly.

How many feel that they are not computer literate?
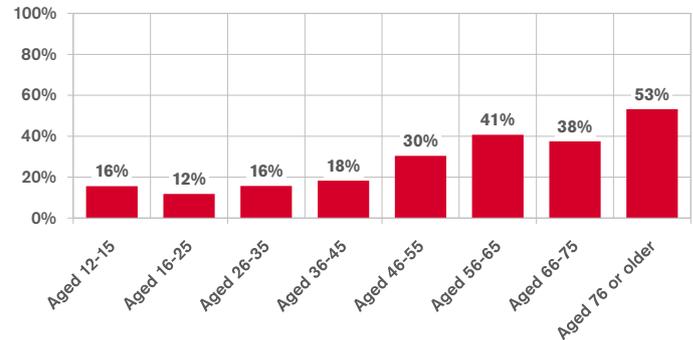
Graph 8:4 Proportion of Internet users, in varying ages, who feel they are not particularly or at all computer literate.

Those spending the least amount of time on the Internet

The amount of time users spend on the Internet at home varies significantly. About 17 percent spend more than 18 hours per week on the Internet; some of them spend up to 30 hours. On the other hand, there are those who do not use the Internet at all (18 percent) and 7 percent who spend between a few minutes and one hour per week on the Internet, and an additional 7 percent that spend up to two hours per week on the Internet. Here, we will take a closer look at these two groups with restricted Internet time. In what way do they use the Internet? Can they be regarded as digital participants?

How much time per week do Swedish people spend on the Internet at home?
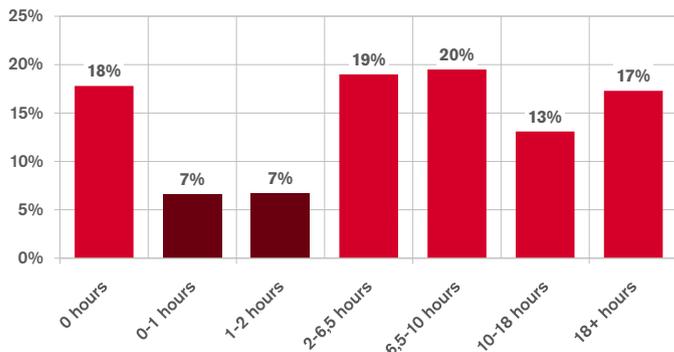
Graph 8:5 Proportion of the population that spends various amounts of time per week on the Internet at home.

For obvious reasons, the two groups with minor Internet time rarely use the Internet and most of the Internet possibilities are not utilized. The activities occasionally used by most of the groups include sending e-mails, reading the news, magazines, searching for information on schedules and addresses. No social networks are visited; no searches conducted for specific information in specific areas, no e-shopping and most do not have electronic identifications. It is specifically the group that spends the shortest amount of time on the Internet that has highly restricted use, while those that spend one to two hours per week on the Internet

are more varied. The majority in both groups is not particularly interested in testing new technical gadgets, but there are still some who feel they belong to the information society.

While those who do not use the Internet at all are dominated by older women with a low level of education, the two groups with restricted Internet use are dominated by middle-aged people (35-65 years). The group with the shortest time (0-1 hour/week) includes both men and women with varying levels of education, while the group with the second shortest time (1-2 hours/week) is dominated by women and people with higher education.

Consequently, the sense of digital belonging is not completely dependent on the time spent on the Internet. We observed earlier that if someone mastered a number of activities on the Internet, there was a sense of belonging to the information society, but there are also those with restricted use, in terms of time and depth, who still has a sense of digital belonging. The connection between Internet use and the sense of belonging is thus complicated and includes more components than user time alone.

Where should the bar be set for digital belonging?

Here, we have started with users' own sense of belonging. We have identified the major group that really has a sense of belonging to the growing information society. We have also attempted to narrow down the group of people who do not feel they belong. These include those who regard themselves as completely unskilled in computers and whose Internet use at home is highly restricted and nearly non-existent at work. In addition to this group that rarely uses the Internet is another group with restricted Internet use of one to two hours per week. They have some computer skills and use the Internet for such activities as e-mail and searching for addresses and schedules. The question is what is required by an Internet user for him/her to be regarded as digitally belonging. One method is to start with users' own sense of belonging. Another method is to start with what is required for a citizen to function in an information society where an increasing amount of information and services is digital and use this as the basis to define what is required in terms of knowledge and skills.

SOCIAL MEDIA

WEB SITE

BLOGS

INTERNET

MARKETING

VIRAL

NETWORKING

Conclusion

In 2010, Sweden was ranked as number one in several global ranking lists that measured how well prepared a country is for the development and spread of new information technology. Nearly all young people in well-developed industrial countries currently use the Internet. However, there are significant differences when it comes to the elderly. It is only in such countries as Sweden, the other Nordic countries and the US that Internet among retirees is somewhat common.

The trend in recent years has been characterized by consolidation. There is still an inflow of new Internet users who have not used the Internet before. In Sweden, this pertains to about 100,000 – 150,000 individuals annually. The trend will continue but major leaps are not anticipated. Most young and middle-aged people already have the Internet and young people will become Internet users when they begin school, as is the case at present. This also means that in Sweden, in the near future, there will be 1.5 million Swedes who are not Internet users. Many with access to the Internet are also highly restricted in their use.

Although many new users have not been added, there have been changes in the past year. The trend of increasing numbers of daily users continues. More time is also being spent on usage and in some instances there have been changes in the actual usage.

Communities and social networks have increased in significance primarily among middle-aged. Various types of communities have always existed on the Internet, but it was primarily based on common interests. The social networks are based on individuals and their contact lists. Initially, it was mostly teenagers who were interested in these social networks. This then spread to those above 35 years and in the past year, the increase has been dramatic among those even older. The

proportion who visits social networks has more than doubled in the ages above 45 years.

Many who are members of web communities are also active co-generators. They generate content. They update their status. They post items and comment on what others write. Combined, this means high content production. It is not a question of a few individual items but hundreds of thousands of posts and comments. Three and a half million Swedes are involved in generating content in social networks on the Internet.

Compared with such global websites as Wikipedia and YouTube, which are also based on user-generated content, the relation between reading what others produce and what an individual produces is at a completely different level. Although there are thousands who submit articles and comment on others' articles on Wikipedia, this is only a fraction of all those who search for information on Wikipedia. If one user of 10,000 produces content on Wikipedia, 8,000 of 10,000 users produce content on the social networks.

Most active is the young women. This is a trend from recent years that have strengthened additionally. Despite their non-interest in new technical equipment and difficulty in accessing computers in the initial development of the Internet, blocked by brothers and boyfriends, they now have own laptops and generate their own content and their own blog culture. Already at 12, half of the girls are involved. However, Internet use by boys is developing in another direction. Gaming and file sharing are the most important parts of their Internet culture.

In several ways, improved technology has made an impression on Internet use in recent years. This applies to mobile Internet and the distribution of TV and moving

images. Although the amount that uses mobiles to connect to the Internet has not increased significantly, usage itself has increased strongly. Mobile Internet is used more frequently and for more activities: e-mails, social networks and for TV/video. Particularly with regard to visiting social networks and watching TV/videos via mobiles, use has multiplied in the past years.

On the whole, the role of image media on the Internet has increased. The Internet was initially text-based with still photographs, but current technology has made it possible to watch excellent quality TV and moving images directly via the Internet, without first downloading the content to your own hard drive. This is also noticeable. Four of ten users occasionally watch video and TV online. However, daily use is still restricted. Reading the newspaper online is still more extensive on the Internet. Most people do, and three of ten do so on a daily basis.

What is interesting is that reading normal traditional paper newspapers has not been particularly affected. There is even a positive connection that those who read a lot of paper newspaper also read a lot of newspapers on the Internet. Accordingly, the Internet seems to function as a complement rather than a competitor. This also applies in other connection and countries and is not unique to Sweden.[1]

This also applies to health information. The Internet has opened a path to information and knowledge that has been unavailable to many. Two of three Internet users also utilize this opportunity to get answers to questions on health and medicine. Eight of ten use Google to find answers. However, this does not mean that other information sources are obsolete. Doctors, nurses and health personnel are still very important.

One problem is that it is primarily well-educated people who utilize this opportunity. This also applies in other areas such as finances, e-identification, social information, information from government authorities, etc. Many with low levels of education and the elderly do not participate. However, there are indications that the differences decrease upon becoming an Internet user. This applies to health information where the elderly Internet users searches for medical information as frequently as young people, and the differences between education levels in some cases has disappeared. However, many elderly do not use the Internet.

In conclusion, we must not forget that although Sweden has been ranked high in three global Internet indices, the Internet is still a relatively new technology. It is one thing to design a system for those interested in technology and computer-literate people but completely different to adapt the system to users who never used a computer in their entire life. And still 15 years after the introduction of the Internet, about half of the population feels they do not belong to the information society. Eight to ten do not use their mobiles to go online. Five of ten do not use the Internet to access health information. One third does not use the Internet to pay their bills.

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1   Pew (2010). Americans Spending More Time Following the News.

User patterns

In "Swedes and the Internet 2007", an analysis was conducted of the various usage patterns among those using the Internet.[1] We discovered then, when we viewed all users as a whole, that four basic patterns were discernable: Advanced enthusiasts, traditionalists, modernists and the restricted

The advanced enthusiasts use the Internet more than any others. They spend a great deal of time on the Internet, both searching for information, entertainment and practical activities and they primarily engage in participating and creating the user-generated content on the Internet, in the form of web communities, blogs and file sharing.

Traditionalists primarily use the Internet for all information available and to get help with practical issues. There are two groups here, one that spend very little time on the Internet and primarily on the above-mentioned activities, while the other group is more enthusiastic and will also use the Internet for entertainment and amusement.

Modernists also use the Internet for information and practical purposes but primarily for communication. There are also two groups here, where the enthusiasts, who spend more time on the Internet, are also interested in entertainment and amusement, while the other group focuses entirely on communication.

Finally, **the restricted** spend very little time on the Internet. Admittedly, they have access to the Internet, but the Internet is not important to them. When they use the Internet, it is primarily for information and facts.

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1   Findahl (2007). Swedes and the Internet 2007. World Internet Institute

Internet users distributed in four usage patterns

Average values in each user group for eight factors that measure access, activity and attitude to the Internet. The higher the value, the better the access, activity and attitude.

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Method

Since 2000, the World Internet Institute has collected data on how the Swedish population uses information and communication technology and how this impacts individuals, families and society. This was primarily conducted through the panel study "Swedes and the Internet," a survey comprising 2,000 telephone interviews based on a random selection of the population from 16 years old and upward (before 2007 from 18 years). The telephone interviews are comprehensive and contain questions about the interviewees' background data, access to technology, use of traditional media and mainly attitude to and use of the Internet in various forms. To parents with children living at home between three and 13 years, questions were asked about children's use of the Internet. To young people between 12 and 15 years, questions were also put to their parents.

Swedes and the Internet is the Swedish portion of the World Internet Project, an international research project involving some 20 countries, which monitors the global spread and use of the Internet. Each party in each country finances their own operation in the project. The national selections are representative of the selection of the population. In the question package, slightly more than 100 questions are common for all countries, called "Common questions." These are formulated exactly the same for each country to generate comparable results. Each country also has the possibility to add its own questions to the common questions. In the Swedish portion, about 200 national questions were added, of which some are permanent while others are new in order to monitor the Internet trend. In 2000, the first panel studies were conducted in the US, Sweden, Italy and Singapore.

What is unique about the project?

The project is formulated as a panel study that provides the opportunity to monitor individuals over a long period. Most other Internet surveys are random surveys. The entire population, including the elderly is interviewed. In many Internet surveys, no one above 75 years is included. Both users and non users are included. The Internet is regarded in a much broader perspective. Access, use and effect are studied. International comparisons are possible.

Method description for Swedes and the Internet

Swedes and the Internet is a revolving panel design. This means that the basis comprises a panel that is interviewed on a yearly basis. Some of the panel disappears for various reasons. They do not want to be involved anymore, or they have moved, changed names or for some reason difficult to reach. Consequently, new selections are added every year to replace the loss in the panel. They also represent a control group that makes it possible to monitor panel effects. The aim is for the total selection of people interviewed annually to be representative of the population.

Selection

In 2000, the first year the survey was conducted, a random sample of Sweden's population was drawn from the national telephone register. This sample was supplemented annually to replace lost members in order to maintain the panel at a constant 2,000 members. Normally, about 700 new individuals must be recruited to the panel to compensate for those no longer participating in the study. New recruitment to the panel is conducted by stratified sample by age and gender to ensure equal representation of these variables.

Adult survey
Swedes and the Internet. Interview survey of a selection of the population between 16 and 85 years. (Number interviewed: 2010).

Parent survey
Additional questions in the adult survey to parents with children between three and 13 years, about children's use of the Internet. (396 parents interviewed about 507 children).

Young people survey
Interview survey of young people between 12 and 15 years and their parents. (102 young people with 102 parents).

52 percent men and 48 percent women
65 percent live in cities and 35 percent in the countryside

Occupation (16+)

Work	52%
Students	13%
Home with children	2%
Unemployed	4%
Sick-leave/early retirement	4%
Retiree	25%

WII's selection 2010			Age distribution among Swedish people according to SCB	
Age	Number	Percent	Age	Percent
16-25 years	331	16	16-25 years	14
26-35 years	286	18	26-35 years	16
36-45 years	324	18	36-45 years	17
46-55 years	290	15	46-55 years	16
56-65 years	307	16	56-65 years	15
66-75 years	278	11	66-75 years	10
76- years	194	7	76- years	11
Totalt	2010	100		100

Tables

Graph 1:1	Internet	Broadband
2000	51%	3%
2001	53%	9%
2002	56%	15%
2003	65%	23%
2004	68%	27%
2005	72%	43%
2006	75%	54%
2007	78%	65%
2008	81%	75%
2009	83%	78%
2010	85%	84%

Graph 1:8	Most frequently	Occasionally	Never
12-15 years	42%	38%	20%
16-24 years	61%	33%	7%
25-34 years	51%	37%	12%
35-44 years	37%	39%	25%
45-54 years	25%	41%	34%
55-64 years	17%	39%	44%
65-74 years	9%	28%	63%
75+	4%	26%	70%

Graph 1:2	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
18-24 years	54%	57%	60%	70%	70%	86%	89%	92%	96%	97%	99%
25-34 years	58%	63%	69%	81%	82%	88%	87%	86%	95%	95%	97%
35-44 years	69%	73%	76%	84%	84%	89%	90%	91%	92%	96%	98%
45-54 years	64%	68%	72%	81%	79%	79%	83%	89%	90%	92%	94%
55-64 years	48%	52%	56%	62%	63%	68%	73%	77%	79%	84%	87%
65-74 years	17%	20%	24%	31%	27%	46%	50%	55%	56%	59%	66%
75+	10%	10%	11%	12%	12%	16%	20%	25%	25%	25%	29%

Graph 2:2	Sweden	US	South Korea	Hong Kong	China
6-14 years	94%	91%	99%	91%	14%
15-24years	99%	94%	100%	100%	67%
25-34 years	100%	95%	99%	93%	33%
35-44 years	99%	84%	94%	85%	17%
45-54 years	94%	79%	68%	60%	10%
55+	62%	61%	23%	22%	3%

Graph 3:4	Daily	Least per week	Occasionally	Never
3-4 years	5%	17%	17%	61%
5-6 years	9%	43%	25%	23%
7-8 years	16%	40%	26%	18%
9-10 years	33%	49%	15%	3%
11-12 years	39%	45%	12%	4%
13-14 years	44%	19%	23%	14%
15-16 years	25%	20%	17%	38%
17-18 years	17%	21%	22%	40%

Graph 3:5	Daily	Least per week	Occasionally	Never
3-4 years	12%	16%	9%	63%
5-6 years	10%	13%	15%	62%
7-8 years	16%	16%	9%	59%
9-10 years	33%	16%	19%	32%
11-12 years	39%	16%	12%	33%
13-14 years	44%	5%	27%	24%
15-16 years	25%	21%	25%	29%
17-18 years	17%	29%	30%	24%
19-25 years	12%	17%	33%	38%

Graph 3:7	E-mail	Fact information	Chat	Community
3-4 years	0%	1%	2%	0%
5-6 years	0%	1%	1%	0%
7-8 years	9%	13%	10%	5%
9-10 years	30%	52%	33%	26%
11-12 years	49%	67%	61%	46%
13-14 years	75%	88%	76%	53%
15-16 years	100%	97%	98%	58%
17-18 years	100%	98%	90%	55%

Graph 5:3	Day/week	A few times/ month	Occasionally	Never
16-25 years	11%	19%	25%	45%
26-35 years	13%	21%	38%	28%
36-45 years	13%	19%	40%	28%
46-55 years	13%	13%	38%	36%
56-65 years	7%	16%	36%	41%
66-75 years	6%	9%	41%	44%
76+	6%	13%	38%	44%

Graph 5:4	Health services and pharmaceuticals	Illnesses/medical problems
16-25 years	64%	54%
26-35 years	80%	71%
36-45 years	74%	65%
46-55 years	71%	60%
56-65 years	57%	51%
66-75 years	45%	40%
76+	47%	39%

Graph 5:5	Men: at least per month	Women: at least per month	Men: occasionally	Women: occasionally
16-25 years	21%	35%	47%	59%
26-35 years	27%	41%	61%	80%
36-45 years	25%	37%	67%	78%
46-55 years	18%	35%	49%	80%
56-65 years	18%	30%	53%	70%
66+	15%	19%	53%	59%

Graph 5:9	Professional telephone information	Family, friends	Internet
16-25 years	43%	60%	55%
26-35 years	58%	55%	62%
36-45 years	54%	45%	61%
46-55 years	48%	43%	48%
56-65 years	43%	44%	38%
66-75 years	43%	43%	22%
76+	32%	53%	10%

Graph 6:4	Daily	Weekly	Occasionally	Never
12-15 years	3%	3%	13%	81%
16-25 years	7%	10%	16%	76%
26-35 years	13%	11%	18%	58%
36-45 years	8%	8%	17%	67%
46-55 years	5%	5%	8%	82%
56-65 years	1%	1%	4%	94%
66-75 years	1%	1%	2%	96%
76+	0%	0%	1%	99%

Graph 6:5	Daily	1-3 times/week	Occasionally	Never
12-15 years	3%	16%	35%	46%
16-25 years	5%	11%	38%	46%
26-35 years	4%	5%	33%	58%
36-45 years	1%	4%	35%	60%
46-55 years	0%	2%	32%	66%
56-65 years	1%	3%	27%	69%
66-75 years	0%	2%	20%	78%

Graph 6:6	Daily	1-3 times/week	Occasionally	Never
12-15 years	5%	9%	25%	61%
16-25 years	7%	9%	29%	55%
26-35 years	7%	5%	27%	61%
36-45 years	5%	5%	22%	68%
46-55 years	2%	3%	19%	76%
56-65 years	2%	1%	17%	80%
66-75 years	2%	2%	7%	89%

Graph 7:3	2005	2007	2009	2010 Community	2010 Social Networks
16-25 years	23%	65%	72%	55%	88%
26-35 years	15%	42%	50%	55%	72%
36-45 years	7%	17%	31%	44%	59%
46-55 years	6%	7%	14%	23%	38%
56-65 years	3%	7%	10%	20%	28%
66-75 years	3%	3%	5%	6%	12%

Graph 7:4	Daily	At least per week	Occasionally	Never
3-4 years	0%	0%	0%	100%
5-6 years	0%	0%	0%	100%
7-8 years	1%	3%	1%	95%
9-10 years	8%	0%	18%	74%
11-12 years	18%	22%	6%	54%
13-14 years	22%	15%	24%	39%
15-16 years	26%	13%	11%	50%
17-18 years	25%	10%	20%	45%
19-25 years	60%	18%	10%	12%
26-35 years	43%	19%	10%	28%
36-45 years	28%	17%	14%	41%
46-55 years	14%	10%	14%	62%
56-65 years	9%	7%	12%	72%
66-75 years	4%	5%	3%	88%

Graph 7:6	No	Yes, for some	Yes, for everyone
Finances	65%	21%	3%
Calendar	56%	27%	4%
Health	56%	30%	10%
Private photographs	44%	41%	5%
Where you are	44%	35%	13%
Friends	34%	34%	16%
Contact information	31%	37%	19%
Job	25%	29%	24%

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.SE

.SE (The Internet Infrastructure Foundation) is responsible for the Internet's Swedish top domain, .se. The core operation comprises the registration of domain names and administration and technical operation of the national domain name registry, while .SE strives for a positive development of the Internet in Sweden. The surplus from registration of domain names finances projects that contribute to the development of the Internet in Sweden. .SE invests intensely in being an active research and development financier and player within Internet development. The objective with the Internet statistics investment area is to ensure access to current, reliable and relevant statistics for anyone who wants to monitor or analyze the Internet trend in Sweden. Through .SE, a number of statistics reports have been published on this subject. From 2010, .SE is now the principal for the survey on Swedes and the Internet, and the Swedish portion of the World Internet Project.

www.iis.se

World Internet Institute is a research institute that conducts social and behavioral research focused on the Internet and its impact on people and society. With aggressive publication, the institute disseminates information to its surrounding society. Recently acquired research results and applications must be rapidly put into practice and contribute to developing commercial and public operations. With its open attitude, the institute is a meeting place for education, research, commerce and society. In close collaboration with colleges/universities, in cooperation with public operations and commerce, the institute will initiate, conduct and support societal and behavioral research focused on the Internet and its impact on people and the society. The institute shall produce and publish statistics relevant to current research. WII is an open member organization and non-profit operation; all possible surpluses are reinvested in research. Financing is generated through research grants, public players, commercial stakeholders and income generated from internal operations.

www.wii.se

Swedes and the Internet is an annual report from .SE (The Internet Infrastructure Foundation), which documents the development and changes of Internet use among the Swedish population. The report is published by .SE (The Internet Infrastructure Foundation) in collaboration with World Internet Institute. In the report for 2010, the following issues were highlighted:

• Sweden takes first place in three global IT indices
• Using the Internet while simultaneously watching TV is commonplace
• Use of mobile Internet increasing strongly
• Eight of ten use Google to find answers on health issues
• Half of all Swedes belong to a social network
• Young women dominate blogging
• Young people dominate file sharing
• File sharing once again at the same level as 2008
• Half the population does not feel they belong to the information society

Through participation in World Internet Project, Swedes and the Internet are part of the largest global survey of Internet use. In 2009, comparative analyses were published in the book, World Wide Internet. Changing Societies, Economies and Cultures.

.se