Executive Summary

Of The Results

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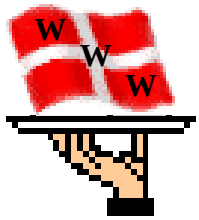

The

Danish Internet Survey

By

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Synopsis

The metamorphosis of the Internet from a nonprofit research network into a public accessible network for everybody has resulted in an explosive growth of the Internet, especially when concerning the so called World Wide Web (WWW) part of the Internet, which made it highly attractive for commercial investments. As businesses, despite the promising possibilities, started to fail in establishing a successful web presence, the need for detailed knowledge about the target population of a web presence, namely the WWW user, became obvious. In this paper I will therefore report the results from "The Danish Internet Survey", which I conducted on the Internet from March 19 1996 to May 14 1996 in order to receive a profile of the Danish WWW user. During this 8 week period a total of 537 Danish-speaking people participated in the of 50 questions consisting survey, which makes it until now to the largest Internet based survey concerning the Danish WWW user.

Introduction

Every day one can hear about the endless possibilities provided by the Internet and especially by the so called World Wide Web (WWW), who's ease to use made its popularity rocket sky high. It is this popularity, which lets a lot of firms jump on the Internet as they expect the WWW to become the business opportunity of the future. As they do so, without knowing anything or only little about the people who are using the WWW, a problem is obvious:

How can a firm be successful in serving the WWW users, if the firm does not know all the aspects of the WWW users, who are their audience and judges ?

A solution to this dilemma is to determine the characteristics of the WWW users in order to find out how one can successfully interact with them.

This resulted into several WWW user surveys conducted by various organisations[1] . Unfortunately these surveys were basically only concerned about the North American WWW user, so that there is until today only very vague knowledge available about the WWW users from other parts of the world. As one can expect these WWW users to be different from the North American WWW user, the need for WWW user surveys concerned about specific groups of the WWW user community became indispensable. Therefore I decided to conduct a WWW based survey, which should only be concerned about the Danish WWW user in order to receive a profile of the Danish WWW user.

The survey represents a proposal of my own and was realised as my final project at the Engineering College of Copenhagen during the spring semester of 1996. To conduct the survey on the WWW, I developed a complete website, called "The Danish Internet Survey", which I used to collect the answers to my interactive questionnaire, as well as to provide information about the survey itself, me as the person behind the survey and the primarily results of the survey.

"The Danish Internet Survey" website was accessible through the Internet from March 19 1996 to May 14 1996. In those 8 weeks, 1659 people visited my website, 537 of those people participated in the survey, whereby 487 of these participants gave an answer to each of the 50 questions,which were mainly of the multiple choice type[2] . This makes "The Danish Internet Survey" until now the largest Internet based survey concerning the Danish WWW user, both in amount of participants as in amount of questions proposed to the participants. However, as I will discuss later in this paper, one will have to be cautious when generalising the results to the entire Danish WWW population!

The research design

Using the Internet as a primary data collection instrument is not totally new. Yet the biggest problem of most Internet based surveys is the lack of participants. As the quality of a survey depends in the end on its participants, I decided to spent a reasonable amount of time ensuring that the survey will not suffer from this problem whereby I applied the following two steps :

1. Effective web design
I designed a website, which is browser independent, user friendly, attractive and optimised for visitors who access the Internet by use of a low bandwidth modem connection. Using the for the time of the survey by most browsers implemented HTML 2.0 standard allowed me to further ease the survey participation, as the questionnaire offers an uncomplicated "point and click" interface, which limits the from the survey participants necessary interaction to a minimum.

2. Effective promotion campaign
I made a widespreaded promotion campaign for the survey itself, using the Internet, namely by postings to the Danish Newsgroups and diverse conference systems and the inscription in all the public searchable WWW databases, as well as the traditional media, like television and newspaper, in order to give every Danish WWW user the possibility of notifying the survey and thereby allowing them to participate. The fact that a promotion campaign needs some time to produce results is also clearly visible in the amount of visitors to my website, as the first 4 weeks my website was online only accounts for 1/5 of the total amount of visitors.

[1] You can find other WWW user surveys on the Internet at <http://www.yahoo.com/Computers_and_Internet/Internet/Statistics_and_Demographics/Surveys/>

[2] The original questionnaire is available at <http://www.internet.dk/hjemmesider/pasisoft/offline.htm>

The questionnaire design

During the questionnaire design phase, it became soon clear that I would have to find a smart way of presenting the 50 questions I wanted to ask the participants, as the questionnaire would fill 17 standard 640*480 pixel screens, when translated into a HTML form. Such a large page would obviously take some time to download, especially when concerning people with low bandwidth modem connections, which made me worry if there would not be a lot of WWW users, who might get so discouraged by the size of the page, that they simply would no longer want to participate.

Moreover usability studies[3] have shown that WWW users do not like to scroll, so I also feared that having the questionnaire on one page would lead to the effect, that WWW users who have started filling out the questionnaire and then got tired of answering, would not scroll all the way down to the end of the questionnaire page in order to press the send button. This would have the effect, that the answers of respondents, who do not press the send button, are lost forever!

To prevent these unwanted effects, I decided to split the questionnaire up into 8 pages, whereby each page would correspond to a certain topic. The different topics were Internet Connection, WWW & Computer, WWW Navigation, WWW Usage, WWW Design, WWW & Denmark, Media Preferences and Demographics. As I did not want to give the WWW users the possibility to only participate in the topics they prefer, I chose not to use a menu containing links to the different pages of the questionnaire. I rather chose to link the single questionnaire pages in a way, that when the WWW user had answered the questions of the first page and then pressed the send button, the data would be send to my server and the WWW user would automatically receive the next questionnaire page in the sequence I chose to present the different questionnaire pages. Even so this system does not prevent the respondents to end their participation before they have answered all the questions, it has the advantage that in the worst case I will only lose the answers to one page!

The disadvantage of this system is, that the participants have to be online during the time they are participating in the survey. This could prevent cost sensitive people from taking part in the survey, so I decided also to offer the one page questionnaire as a so called offline version, as it would give the possibility of filling in the questionnaire while being offline, whereby the connection to my server will be build up automatically when the send button is pressed.

The processing of my server log file revealed, that the decision to split the questionnaire up into several pages turned out to be right. According to the log file, the offline version of the questionnaire was downloaded 196 times, but only 53,1% of them were answered and send back to my server. Concerning the multiple page version of the questionnaire, I found out that from the 383 people who answered the first page, a steady 88,5% was also answering the last page, whereby from the third last page on nobody dropped off anymore!

The target population

I defined my target population to contain all the people who are currently using the WWW and who are Danish speaking.

The research questions

In this section I will go through each of the 9 research questions to be answered by the survey, whereby I give a short explanation in order to justify the relevance of each research question.

1. What is the most common configuration for a Danish WWW user to connect to the Internet ?

The reason why I came up with this question lies in the fact, that in the early days, when there where only a handful websites, it might have been sufficient to just have a page on the WWW and people would come and look at it. Today the WWW user can chose between 30 million pages provided by 275.600 servers[4] , whereby the Danish part of the WWW accounts for more then 133.000 pages[5] , meaning that there are more pages a WWW user can chose from than he ever would be able to visit. It is therefore especially important to spend time on designing a user friendly website in order to be successful in preserving the initial interest of a visitor until he has received the message of the website and got so satisfied that he want to revisit the website or even tell other people about the website.

One should never forget, that the website visitor is paying for what he is seeing, so that he will of course be keen on maximising the price/performance ratio of his Internet usage and therefore be very inpatient with bad designed websites !

When talking about web design one should not only be concerned with the information contents of a website, but also with how the information will be structured and how to preserve a quick system responsiveness. The information structure and the system responsiveness, will hereby depend on how people are accessing the website or the WWW in general. This concerns which Internet connection, browser, screen resolution etc. people are using, so that one should decide on a reference configuration the majority of the (target) WWW users is expected to use in order to ensure that they can access the website in its intended way !

[3] An example for such a usability study is available at <http://www.sun.com/sun-onnet/uidesign/designstory.html>

[4] See Alta Vista homepage at <http://altavista.digital.com/>

[5] See Jori homepage at <http://jori.jubii.dk/>

2. What are the elements to create a successful WWW design ?

The definition of a reference configuration is only one step towards a successful WWW design, as one should also take care of the contents of a website to keep WWW users interested and thereby maximising the commercial potential a website can achieve by regular visiting WWW users. Next, it is also important to know to which degree commercialised WWW pages are accepted by the WWW users.

Addressing one of the biggest problems, namely shortage on Internet bandwidth, one should furthermore be concerned about how satisfied WWW users are with their connection speed and how patient they are with slow websites. Hereby I tried to determine the relevance of graphical elements on a web page by investigating if WWW users tend to disable the graphics of a web page, as a way to shorten the download time of the web page.

3. How can one successfully promote a website on the Internet ?

Setting up a new website does not mean that everybody will automatically take notice of the existence of that new website. Due to the immense size of the Internet, it is very important to find a way to make people aware of the existence of a website in order to make that website a success. This makes it necessary to determine how somebody, in my case the Danish WWW user, gets aware of new websites.

4. What motivations do the Danish WWW users have for using the WWW ?

Due to its multimedia “gimmicks“ the WWW is said to be more a toy than a tool, the question hereby is, if this really affects the way the WWW users are using the WWW. Moreover it is from great interest to understand, what are the motivations for actually using the WWW.

5. For which business areas could it be interesting to be present on the WWW ?

Some people say you can only make business on the Internet with things you can also directly sell over the Internet like for example a software package, which can be downloaded from the Internet just like a WWW page. On the other hand one could suspect people to be also just interested in specific information about a certain product. This could be very interesting for non software/computer related firms, who could use a presence on the WWW to advertise their products by offering detailed information on their products. The problem hereby is to determine, which business areas are most likely to achieve a successful web presences.

6. To which degree would Danish WWW users let the WWW be involved in a purchasing process ?

With all the security issues brought up by the media, raising concerns against the purchase of products by use of the Internet, the question to be answered is if the WWW users share this concern and to which degree they actually would use the WWW in a purchasing process.

7. How will the Danish Internet population develop itself in the near future ?

To get an idea on the development of the Internet in Denmark, I tried to determine how the Danish Internet market has grown in the past 4 years in terms of people coming on the Internet. Furthermore the media and the advertisement of some Internet providers was so euphoric in the last few months, that one could almost believe, that it was for example possible to get real time audio and video in normal broadcast quality over a simple modem connection to the Internet. This made me wonder how satisfied people are with their Internet access, as this also might give an indication on how likely it could be that people are turning their back to the Internet again as their expectancies do not get fulfilled!

8. Is the usage level of the WWW comparable with the usage level of the traditional media ?

The WWW first started recently to be used as an advertisement media. As there is currently no data available on how effective advertisement on the WWW is, I decided to investigate how frequent the WWW is used in comparison to traditional media, as this will give an idea about the potential the WWW has to offer to the advertisement business.

9. What are the demographics of the Danish WWW users ?

Beside the “classic“ demographic questions, I also included some questions concerning specifically the WWW users, as they will help to further characterise the WWW users.

The Survey Results

In the 8 weeks "The Danish Internet Survey" website was online, 1659 people visited the website and 537 of those people participated in the survey, whereby 487 of these participants gave an answer to each of the 50 questions. Therefore the survey response rate lies by 32,4%, which is very high when compared to other Internet based surveys.

These numbers do not include submissions which were not altered by the respondent, as I discarded them while determining the results of the survey. An unaltered submissions occurs, when the questionnaire send back to my

server did not show any differences from when the questionnaire was send to the respondent, meaning that the respondent did not give an answer to any question. Unaltered submissions accounted for less then 2% of the total amount of submissions.

On the basis of the received questionnaire answers, I will now give an answer to each of my research questions. In the appendix to this paper, I will furthermore provide a graph to every single question of the questionnaire[6], showing directly how the respondents have answered.

1. The most common configuration for a Danish WWW user to connect to the Internet.

The typical Danish WWW user is using Windows 3.x or Windows 95 (71,8%) with a screen resolution of 800*600 (33,9%) or 1024*768 (27,4%), whereby I suspect that the higher screen resolution is related to people connecting from work to the Internet. Despite the fact that already 8,1% of the Danish WWW users claimed to use Microsoft's Internet Explorer as their primary WWW browser, Netscape's Navigator stays far ahead of every other WWW browser on the market with 83,4% of the Danish WWW users using it as their primary WWW browser. While determining the most common connection speed, it showed that people are quick adapting to faster connection speeds, as already 40% of the Danish WWW users connect to the Internet with a 28,8 Kbps modem and a further 8,6% uses an 64 Kbps ISDN connection, so that the amount of people using an ISDN connection almost equals the amount of people connected with a 14,4 Kbps modem (11%).
(see Fig. 1, 2, 3 and 4)

2. What are the elements to create a successful WWW design ?

80,9% of the Danish WWW users do not have a negative attitude towards websites who are not in Danish, whereas 9,7% stated that it was very important that a web page is in Danish. As also 30,8% of the respondents has the opinion that Danish web pages are worse then non Danish web pages, whereby 40% of the respondents has no meaning about this subject, one can come to the conclusion that Danish WWW users do not especially prefer Danish web pages, so that being a Danish website would not mean that Danish WWW users are more interested in that website.
(see Fig. 5 and 6)

Concerning the topicality of a web page, most of the Danish WWW users (34,2%) found a web page getting outdated after 1 month and 17,5% found that 1 week was already enough. When offering a website, which will be updated daily, only 34,1% of the Danish WWW users would visit that website daily to check what is new, whereas 48,1% would prefer to come back every week. Therefore one may conclude that it would be sufficient to update a website once a week in order to keep the Danish WWW user interested in that website. On the other hand, the best way to make sure to lose "loyal" visitors is to have a slow website, as 81,2% of the Danish WWW users would not revisit such a website. So make sure to test your website under low bandwidth conditions!
(see Fig. 7, 8 and 9)

The wish for more speed explains also how the Danish WWW users are viewing web pages. Even so 37,2% of the Danish WWW users always view web pages with the graphics turned on, one should not forget that 47,1% are using graphics mode and sometimes text mode and 13,4% are using text mode and sometimes graphics mode, which one can interpret as a purpose depending way of optimising the web page access times.
(see Fig. 10)

A further aspect in the WWW design, is the influence of the ongoing commercialisation of the Internet. The opinion the Danish WWW users have about this subject depends clearly on what their relation to the Internet is, as users with no commercial interest in the Internet, basically the users who are connecting from home, would be least interested in a further commercialisation of the WWW, whereas users connecting from work are not against a further commercialisation.
(see Fig. 11 and 31)

In case one want to make business on the WWW, the question is, what could be the smartest or rather the most accepted way of making business on the WWW. Hereby I focused on the idea of running a website by the help of sponsors, who will in return get advertisement space on the web pages. For the Danish WWW users, the idea of a sponsored web page is most accepted, when the sponsorship is the reason for that the web page can be provided for free to them. Still, 22,6% of the Danish WWW users has a negative attitude towards an advertisement sign on a web page, as they claim never to click on an advertisement sign to follow the link behind it.
(see Fig. 12, 13 and 14)

3. How can one successfully promote a website on the Internet ?

In order to find out if there was a special way by which one could make the Danish WWW users aware of a new website, I gave the respondents a variety of possibilities, both Internet based methods as well as traditional methods. Hereby most of the Danish WWW users (86,7%) said to find out of a new website by use of a search engine, followed closely by the use of WWW links on other web pages (82,7%) as well as through articles (73,8%). In my opinion, inscribing a website into all the different searchable databases on the Internet, which provide their service for free to the public, is a cheap and easy way to give people the possibility of finding their way to a website. On the other hand, if one is aiming to achieve high visitor numbers, it will be necessary

[6] The original questionnaire is available at <http://www.internet.dk/hjemmesider/pasisoft/offline.htm>

to use a wide variety of the possible promotion methods.
(see Fig. 15)

Figure 16 shows how the respondents found their way to "The Danish Internet Survey" website, whereby I can say that the results correspond to the amount of effort I have put into the different possibilities.

4. What motivations do the Danish WWW users have for using the WWW ?

61,1% of the Danish WWW users stated to use search engines to navigate through the WWW, which means that most of the Danish WWW users do use the WWW for a specific purpose. This purpose depends to 30,1% on entertainment reasons, 24,4% on information reasons, 18,2% on business reasons and to 15,1% on communication reasons. The fact that educational reasons only account for 7,8% and research reasons for 2,9% makes it clear that from the Danish WWW users point of view the Internet has gone through its transition from a research network to a public network.
(see Fig. 17 and 18)

5. For which business areas could it be interesting to be present on the WWW ?

To find out which business areas are most likely to attract the Danish WWW users interest, I offered a list with a wide variety of business areas on. The respondent was not limited to apply for just one business area, but could apply for as many as he wanted. As one can see on Fig. 19 the popularity of computer related information is still far ahead of every other area. Information on books, newspapers & magazines as well as information on Internet service providers also score high. Nevertheless, the low scores for some of the business areas in the list does in my opinion not automatically prevent those businesses to establish a successful web presence, as WWW users in general are curious and most easiest to attract with something nobody has done before on the WWW[7]. So I suspect that it is the lack of imagination from the Danish WWW users side (see also Fig. 20), as Fig. 19 represents in my opinion the current situation of the WWW supply.
(see Fig. 19 and 20)

6. To which degree would Danish WWW users let the WWW be involved in a purchasing process ?

This is in my opinion the most important question to be answered, if one is interested in doing business on the WWW. Hereby I found out that being present on the WWW, in order to provide the possibility to order a product/service would be more convenient to 68,7% of the Danish WWW users then doing the same thing by use of a telephone call! Next I tried to determine how comfortable the Danish WWW users are with the possibility of paying a WWW ordered product by deliverance, as an acknowledged safe way of payment, or the possibility of paying over the WWW by use of the Dankort[8] , which might recall security concerns at the customer side. Hereby I found out that only 20,2% of the Danish WWW users did not like to pay by deliverance and 25,6% would not be interest if payment by Dankort was possible, whereas the percentage of Danish WWW users who would be interested by paying at deliverance (61,1%) stays practically the same, if payment by Dankort over the WWW was offered (60,9%). Furthermore I found out that already 76,8% of the Danish WWW users could imagine to buy something by use of the WWW, whereas only 12,4% could not imagine to use the WWW to buy something. This is in my opinion a promising sign for making business on the WWW, whereby it will depend on the firms, who want to make business on the WWW, to further strengthen the customer trust in purchasing products/services over the WWW!
(see Fig. 21, 22, 23 and 24)

7. How will the Danish Internet population develop itself in the near future ?

Based on the data I received by asking the survey participants since when they are connected to the Internet, I found out that 50% of the survey participants came on the Internet during the last 9 months. Furthermore only 11,3% of the Danish WWW users said to be disappointed concerning the fulfilment of their expectancies they had before they came on the Internet, so that summarised one can expect a further growth of the Danish Internet community.
(see Fig. 25, 26 and 27)

8. Is the usage level of the WWW comparable with the usage level of the traditional media ?

In Fig. 29 one can see that the Danish WWW user basically uses TV, radio and newspaper on every day of the week and magazines between 1 and 2 days a week, whereas the WWW usage shows a mixed picture with 24,6% of the Danish WWW users using the WWW on 5 days a week and 28,7% using it on 7 days a week. If one adds up the days the respondents have said to use the different media, then one can come to the conclusion that the WWW usage level of the Danish WWW user is most comparable with their usage of the radio, which lies second behind the TV usage.
(see Fig. 28 and 29)

9. What are the demographics of the Danish WWW user ?

Summarising the results of the "classic" demographic questions into one sentence, I come to the conclusion that

[7] An example for the WWW users ongoing search after the unexpected is Netscapes "What's Cool" page at <http://home.netscape.com/home/whats-cool.html> which keeps addresses of "unusual" websites.

[8] Dankort is a popular Danish credit card.

the Danish WWW user is a young unmarried computer interested male with no kids, but a computer with modem of his own, who has a good paid job as an employee or he is student at the university.
(see Fig. 30 - 48)

Known problems

In this section I want to give a short overview of the problems, which resulted on the one hand from using the Internet as the surveying instrument and on the other hand from how I implemented the survey itself. I will hereby start with the problems I produced myself.

Running this survey as my final project, I had the problem that my time plan only gave me 4 weeks to set up the whole survey website, which prevented my from pretesting the questionnaire. As a result of this, I have to admit that a few questions were not formulated precise enough to deliver a result. For the 2. Danish Internet Survey I will then also try to improve the questionnaire by rephrasing the questions and reducing the total amount of questions supposed to the participants.

An other problem, I want to solve for the next survey, resulted from splitting up the questionnaire into several pages. Due to the fact that several people could start on the first survey page at around the same time, there was no guaranty that the order in which the answers to the first survey page were received by my server would be the same order in which the answers were received for the next survey page, as each of the respondents might need a different amount of time to submit the answers.

This means, that if one wants to make a cross-question analyses with the results from two questions from two different survey pages, the only way to track the single submissions of the single respondents through the different survey pages would be by use of the server log file, which is a very time demanding, not to say an almost impossible task to do. For the next Danish Internet Survey, I am planning then also to assign a unique key to the first survey page. If the answers to the first survey page are submitted, the unique key will be attached to these answers, so that the next survey page send back to the respondent will contain the same unique key. This system will then easily allow me to find out, which answers of the different pages belong to each other, so that an extensive cross-question analyses of the results will be possible.

Using the Internet as the surveying instrument results basically in the following two problems, namely self-selection and sampling. Self-selection occurs, because the people who came to visit my website decided by themselves if they wanted to participate in the survey or not. It is this decision, which could mean that only a certain group of people is taking part in the survey, so that the results would be biased. In my case this could for example mean, that more frequent and experienced Danish WWW users were more likely to participate and hence skew the results.
Nevertheless I can say, that almost every survey suffers from self-selection. During a telephone based survey, self-selection occurs when a potential respondent hangs up before answering a question. The same applies to a direct mail survey, as self-selection occurs if a potential respondent does not send back the survey form.

Concerning the sampling issue, there are 2 different types of sampling: random and non probabilistic. The random sampling method uses a way of getting respondents in a random manner by for example throwing a dice, which is intended to give an equal representation of the target population. In my case, the survey uses non probabilistic sampling, as I do not use a randomisation technique to get respondents, which reduces the ability to project the results to the entire target population. Still, I tend to argue, that my widespreaded promotion campaign for the survey minimises any systematic effect introduced by the non probabilistic sampling method.

Finally I also have to mention, that there was and still is no way I can ensure that a particular respondent takes more then once part in the survey, as I can not (and want not) check who is actually submitting the answers! I know one could think of comparing the answers received by the same IP number and discarding identical answers, but as an IP number only identifies the address of a computer connected to the Internet, it is in my opinion impossible to determine if such identical answers were posted by the same respondent or by two different respondents! The situation gets even worse to judge, as many Internet access providers started to have a pool of IP numbers, which they assign dynamically to their clients at the moment they connect to the Internet by modem, meaning that an IP number becomes independent from a particular computer! The positive side of this situation is the fact, that every survey participant is guaranteed to stay anonymous.

Conclusion

Despite the well known problems involved in this first survey, I consider it to be a success as it fulfilled its aim, namely receiving a profile of the Danish WWW user. For the future, I will use the experience gained by developing this survey, to further improve the quality of the next Danish Internet Survey, which I plan to run in October/November and who's results I am already looking forward to compare with the results presented in this paper.

Acknowledgments

First of all I want to thank all the survey participants, who made it first possible for me to make this survey to a success, as well as Civilingeniør Helge Rudolf Petersen, who by agreeing to be my project supervisor gave me the opportunity to make this survey as my final project at the Engineering College of Copenhagen. Furthermore I would like to thank:

- The Engineering College of Copenhagen for providing me with the necessary Internet connection.
- SSA Trading A/S for providing me with the FileMaker Pro database system.
- Apple Danmark for borrowing a spare computer during the time I used my own computer to run the website.
- Kasper Lange from N@t på Nettet, Martin Thorborg from Cybernet, Erik Svarre from Børsen, as well as Image Scandinavia and Zitech Net for helping me promoting my website.

And last but not least, I want to thank my family, who's support helped my to come through all the long nights I experienced during the project work.

Let me know, if ...

... You are interested in sponsoring the 2. Danish Internet Survey.

... Your firm wants to establishe a successful web presence and needs the help of an Internet wizard to take care of the project.

... Or you simply have suggestions or questions to the survey.

You can contact me by

Email: pasisoft@internet.dk

Smail: Pascal Geuns
Sjælørboulevard 28, 1.tv
2450 København SV

Tel.: ++45 / 40 63 52 04

Further information about me and the survey is available on the Internet at
<http://www.internet.dk/hjemmesider/pasisoft/default.htm>

Appendix

Email: pasisoft@internet.dk

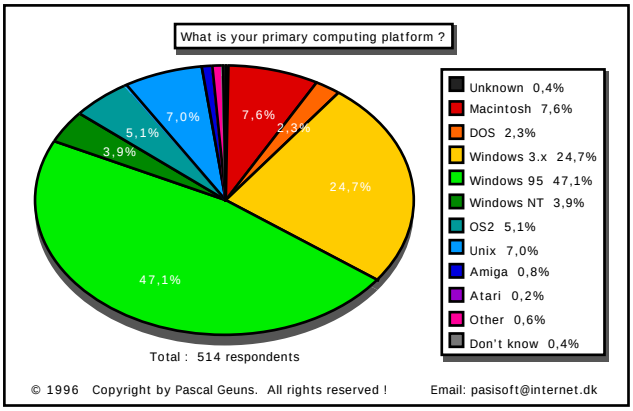


Fig. 1

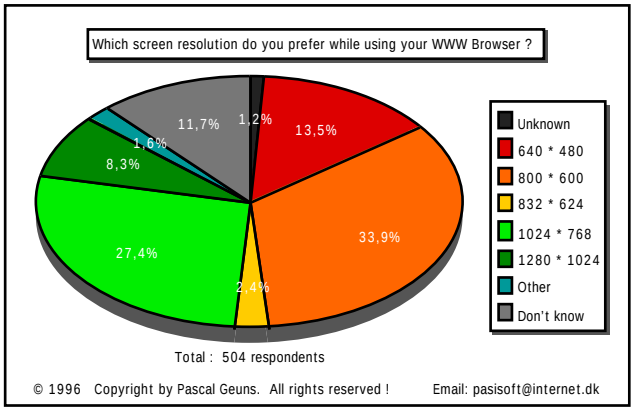


Fig. 2

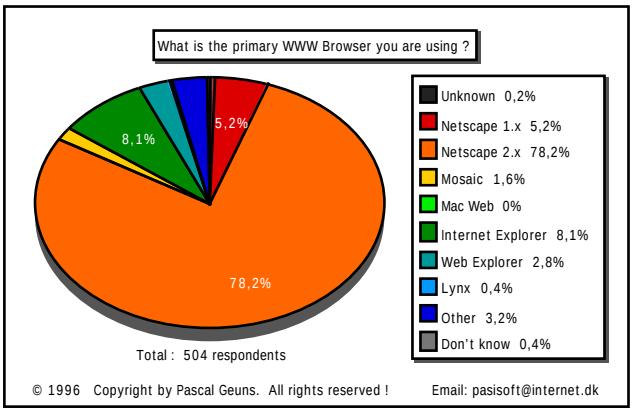


Fig. 3

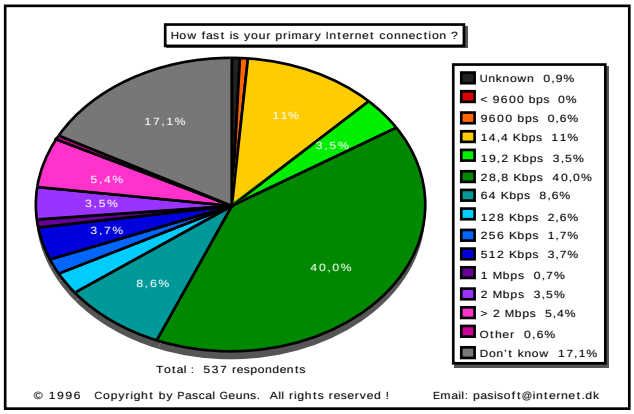


Fig. 4

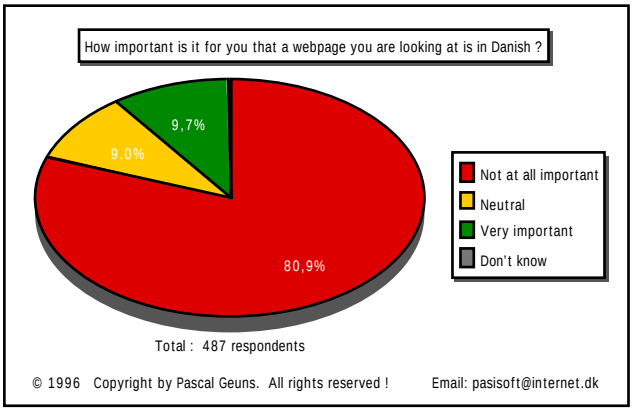


Fig. 5

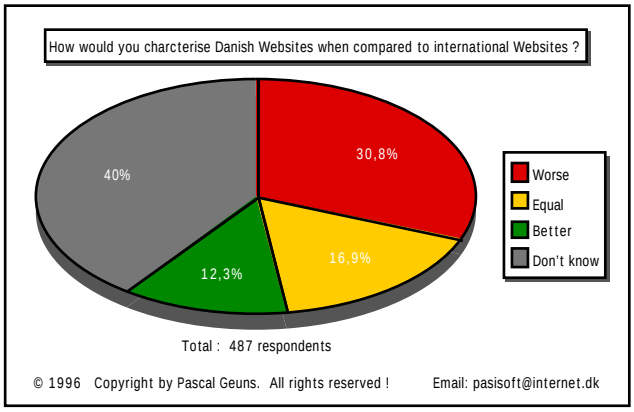


Fig. 6

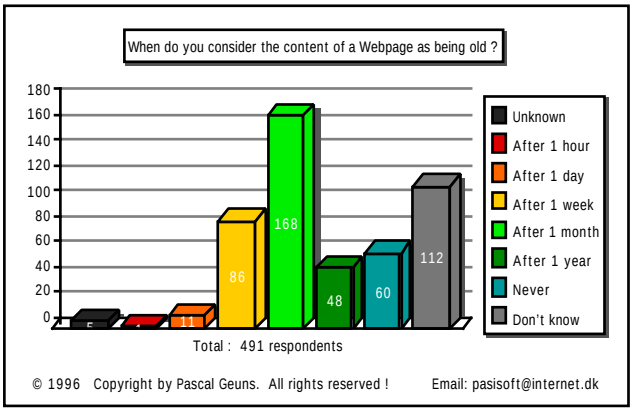


Fig. 7

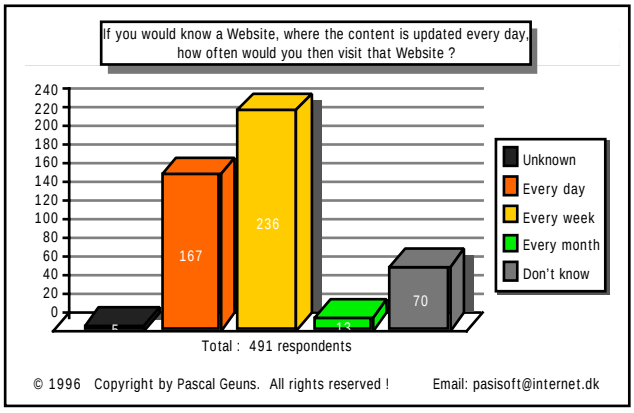


Fig. 8

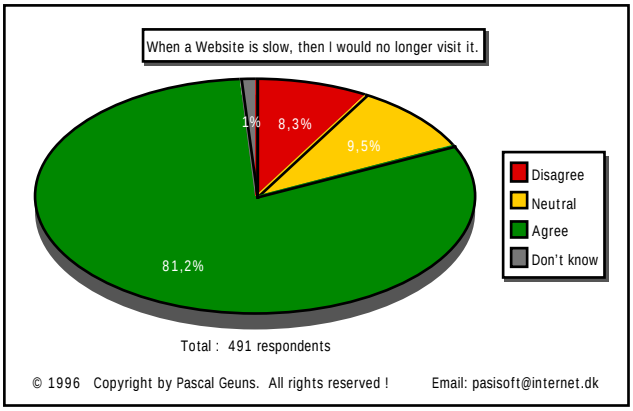
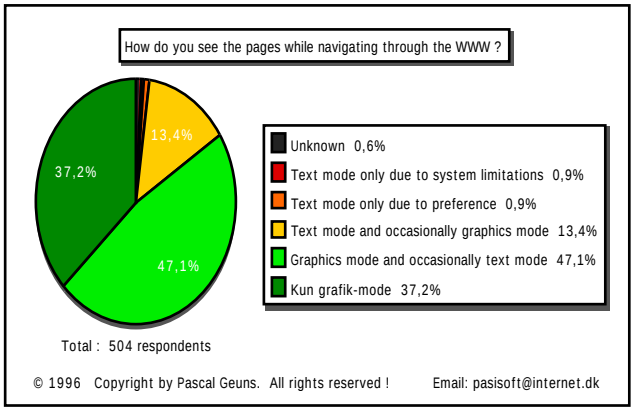


Fig. 9



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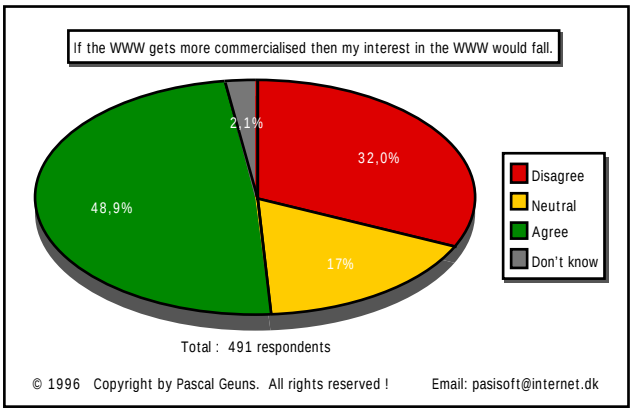

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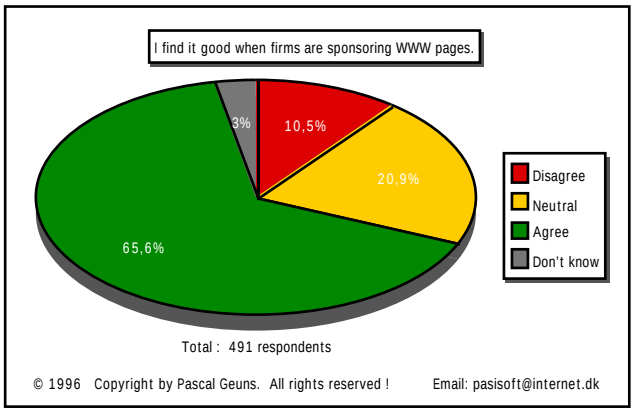

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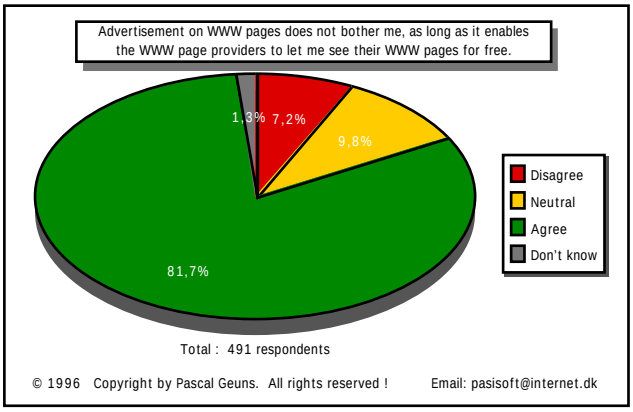

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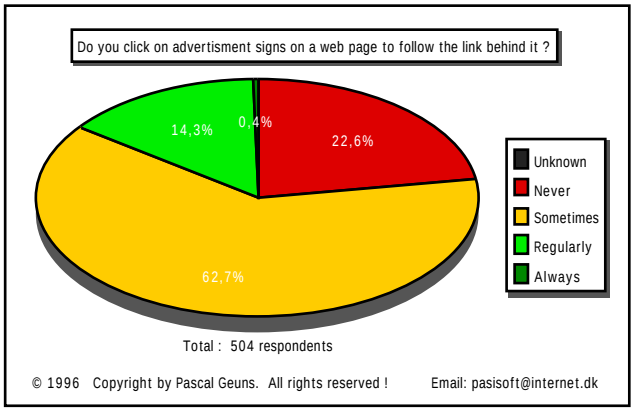

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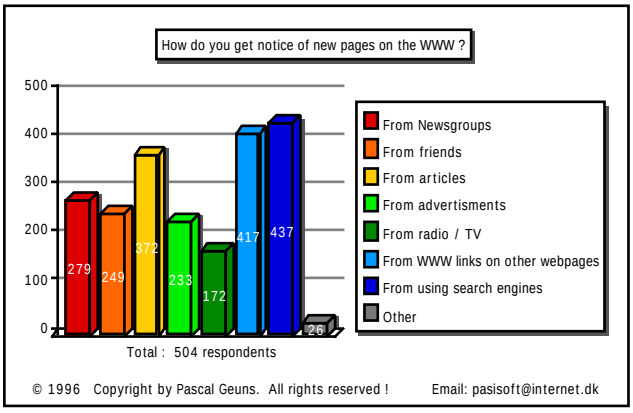

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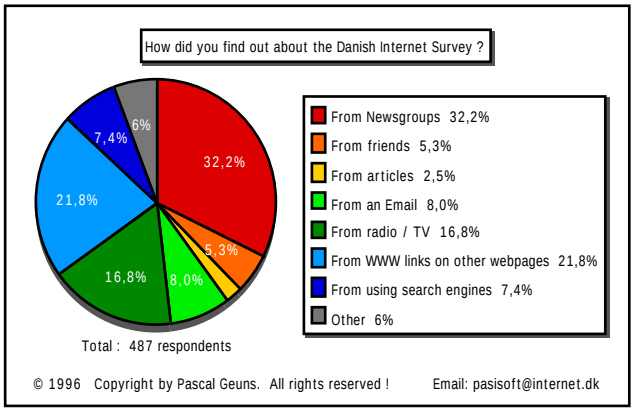

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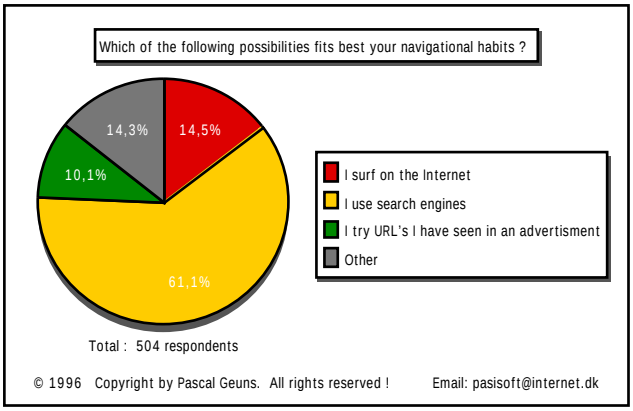

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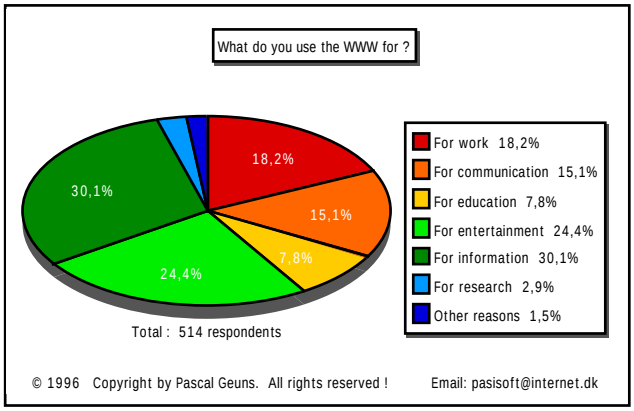

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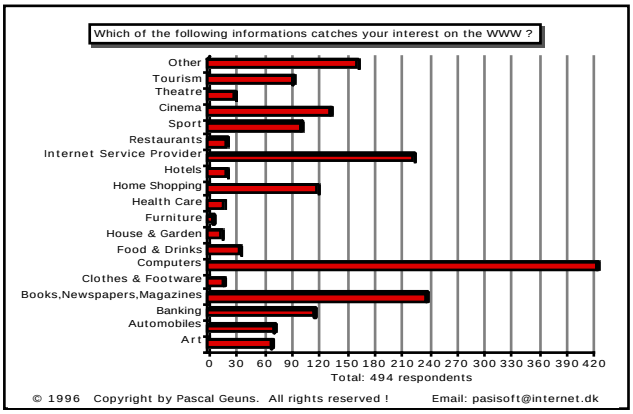

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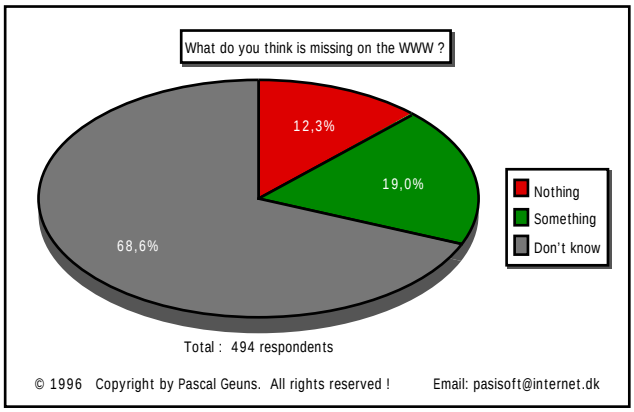

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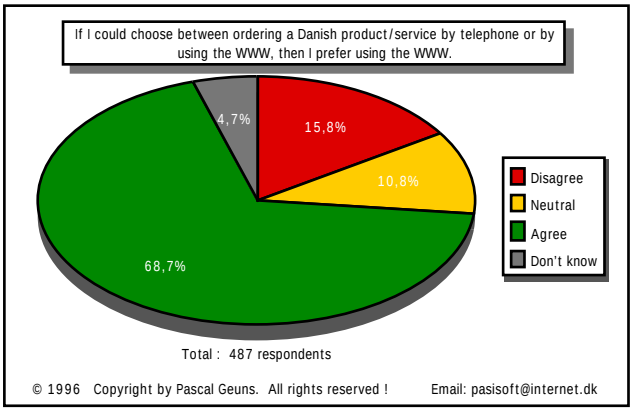

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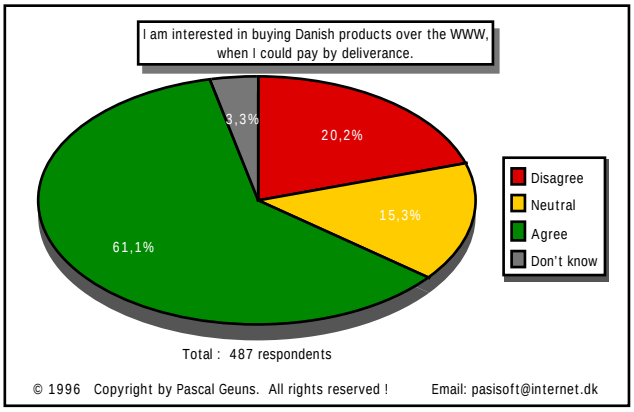

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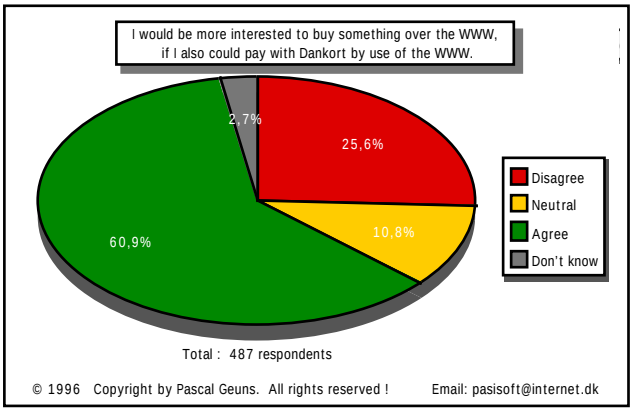

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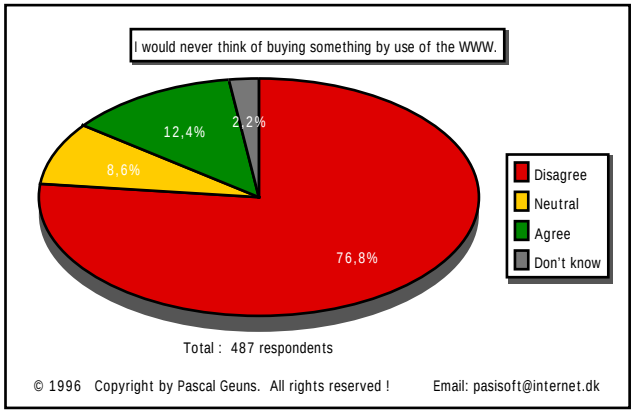

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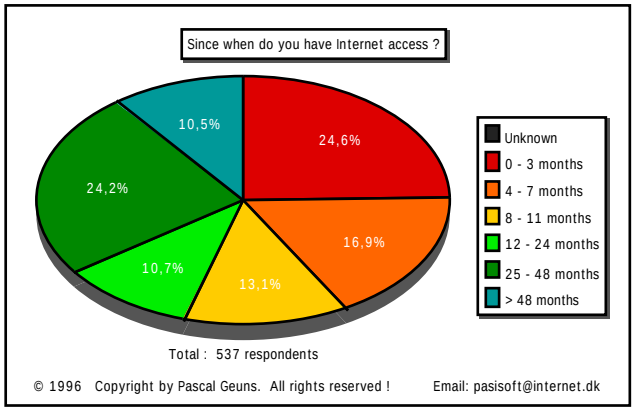

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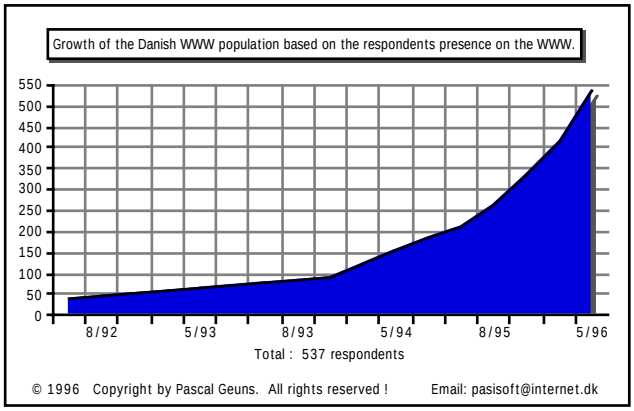

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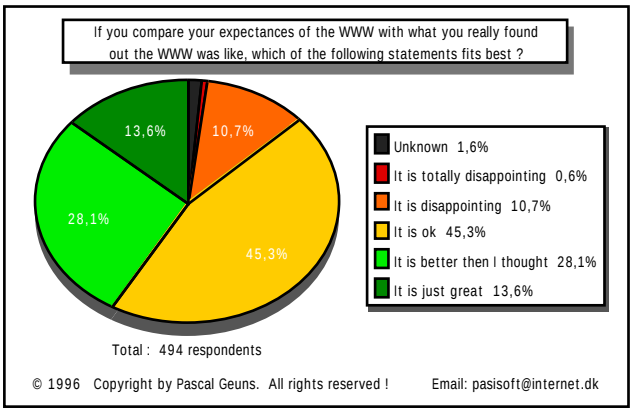
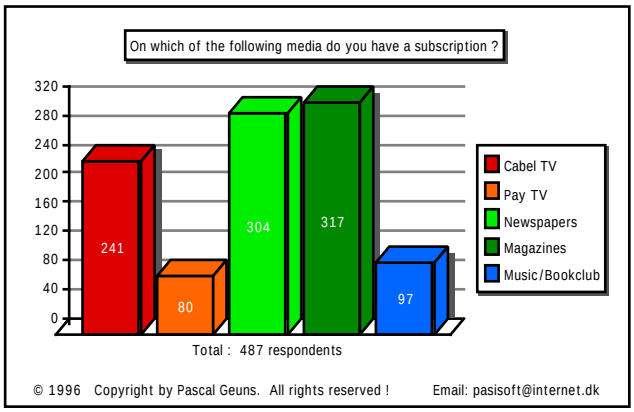


Fig. 27



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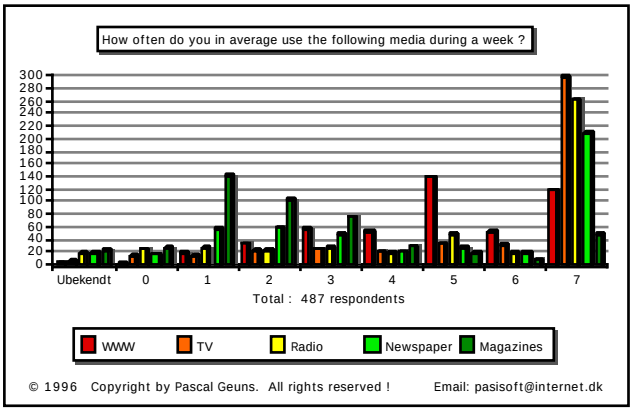

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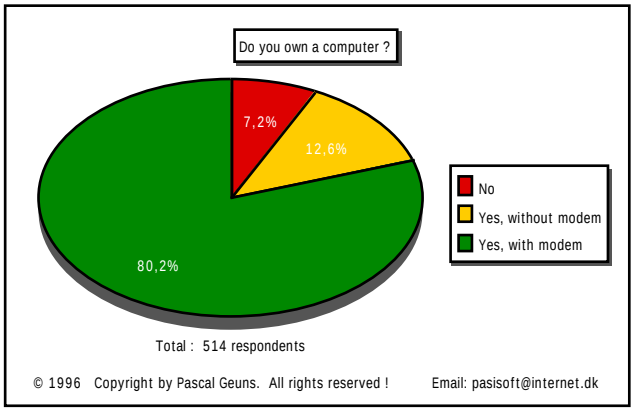


Fig. 30

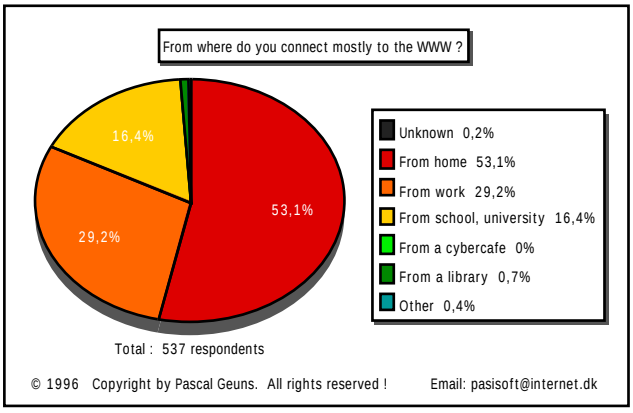


Fig. 31

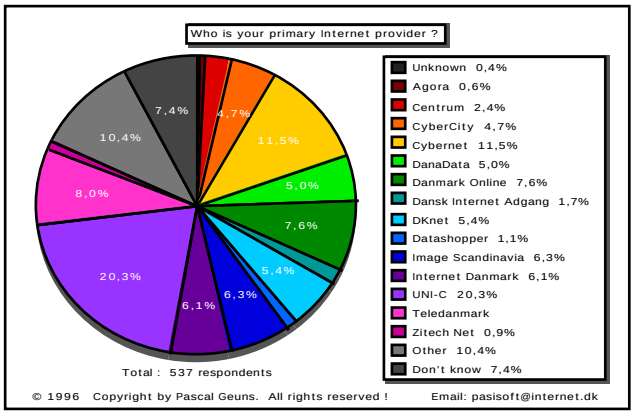


Fig. 32

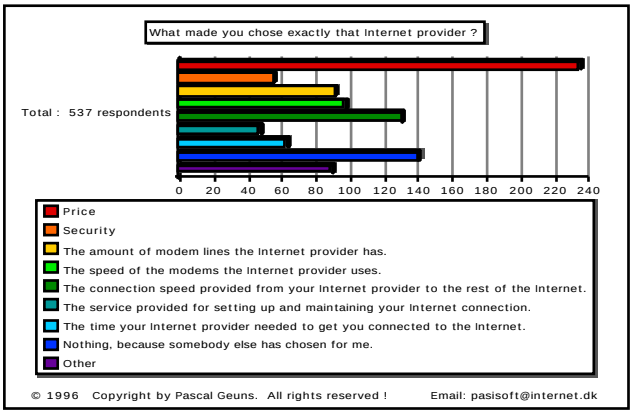


Fig. 33

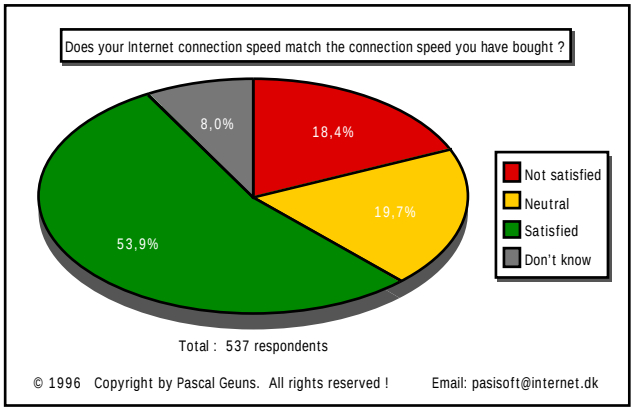


Fig. 34

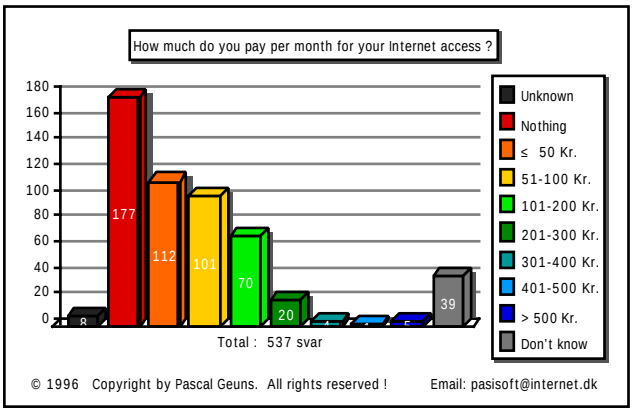
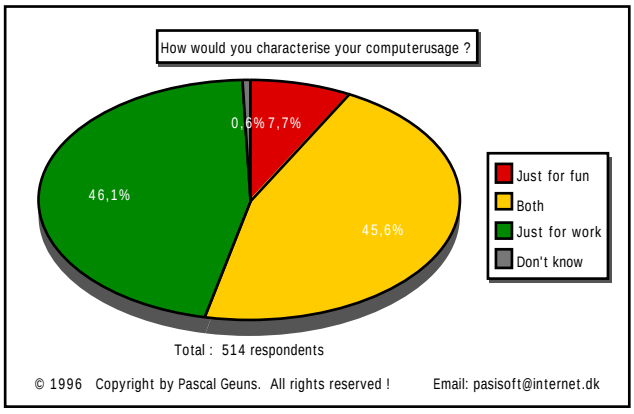


Fig. 35



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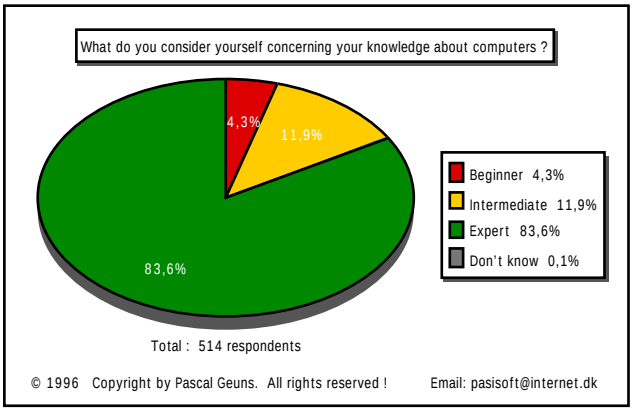

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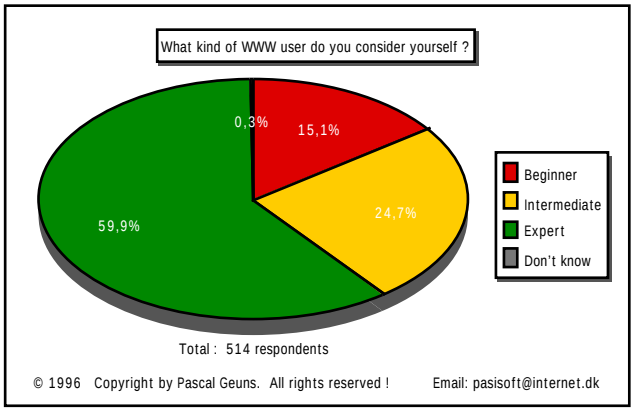

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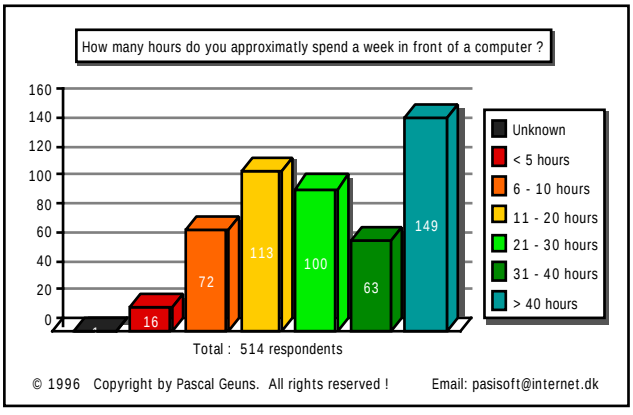

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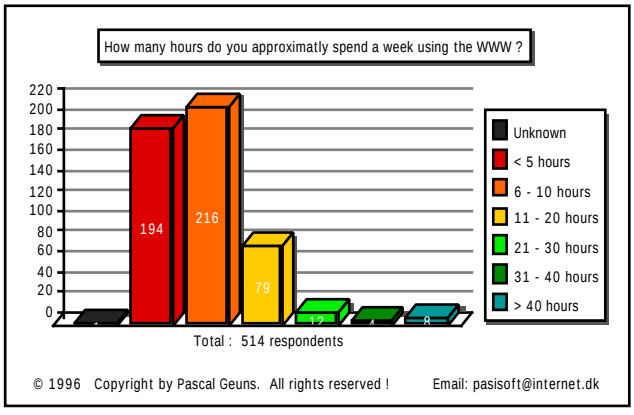

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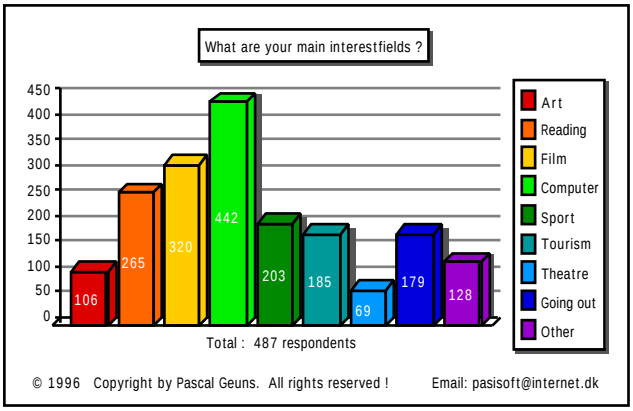

Fig. 41

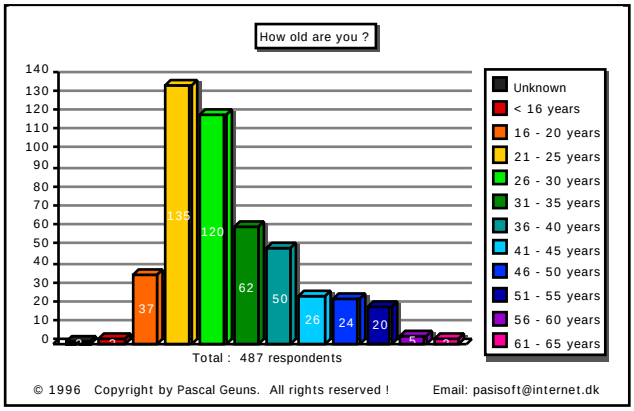

Fig. 42

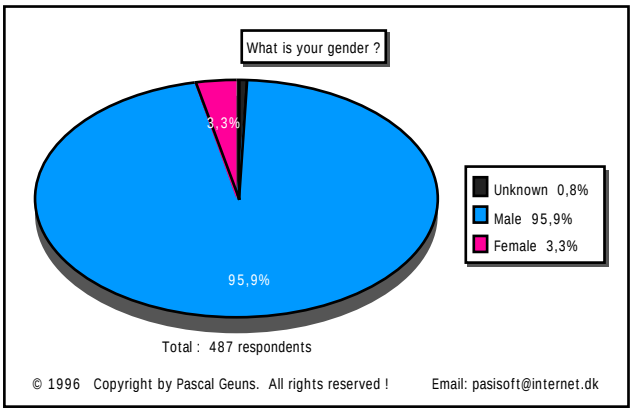

Fig. 43

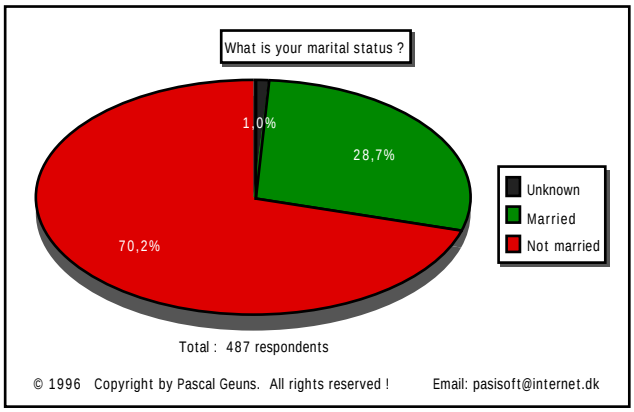

Fig. 44

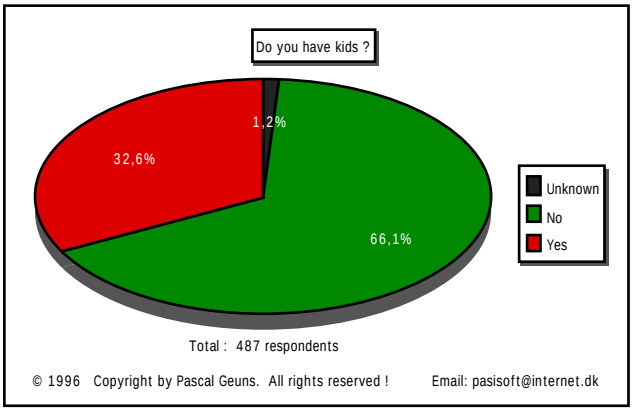

Fig. 45

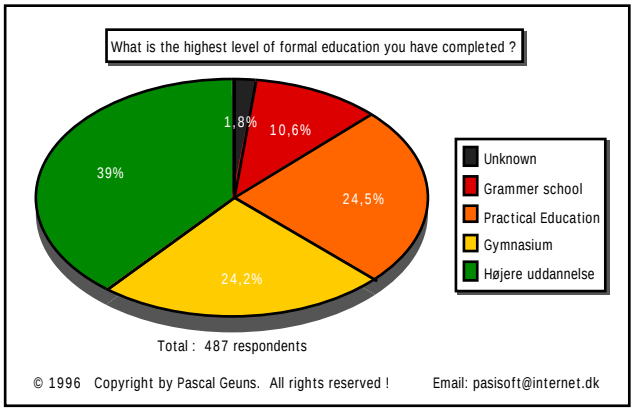

Fig. 46

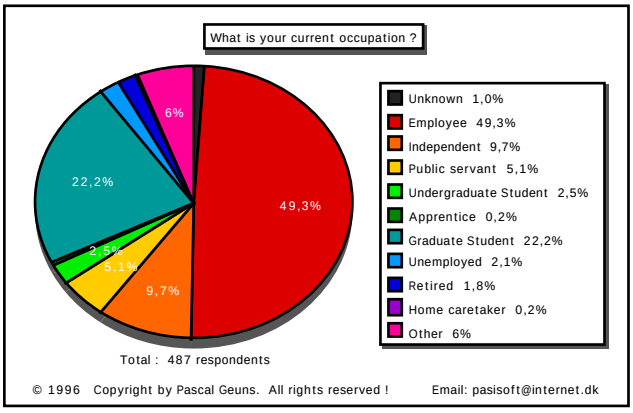

Fig. 47

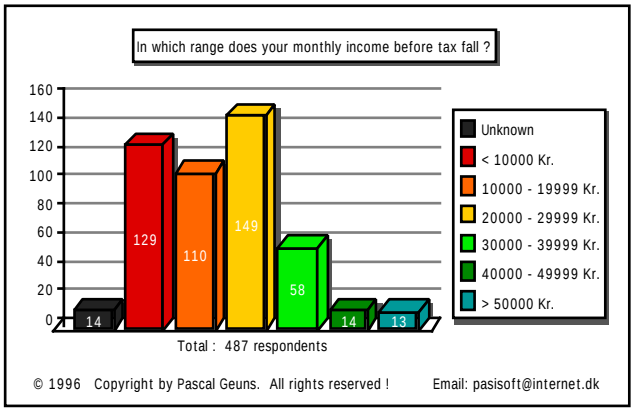

Fig. 48