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New Media in Sweden

The Swedish New Media and
Internet Industry Survey

TeLDOK

Åke Sandberg



Arbetslivsinstitutet

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The study was made by the National Institute for Working Life in co-operation with PROMISE (Producers of Interactive Media in Sweden) and the journal Vision.

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A special theme issue of Economic and Industrial Democracy on 'Good Work and Productivity', Arbetslivsinstitutet and Sage, London 1998, No. 1 (Guest editor and author of the introductory article)

Enriching Production. Perspectives on Volvo's Uddevalla Plant as an Alternative to Lean Production, Avebury, Aldershot 1995 (editor and author of the introductory article)

Technological Change and Co-determination in Sweden, Temple University Press, Philadelphia 1992 (Principal author)

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Translated from the Swedish 'Nya medier' by Struan Robertson

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Foreword

This is the final report from the first comprehensive Swedish study of the new media and Internet industry covering companies that produce CD-ROMs and solutions for the Internet and other networks within and between organizations. This report concentrates on the emerging new media industry, the challenges and the opportunities in this sector.

The evolution of new media brings changes to the traditional media sector, but also to communications, control and influence in all kinds of organizations and enterprises. It brings into focus fundamental questions concerning ICT, organization and society.

No detailed and comprehensive picture of this situation has yet been produced for Sweden. The companies themselves have identified a need for a description which includes the basic data that will enable them to locate their own activities on the map. A description of this kind is also in demand among the sectorial organizations and political bodies, and will provide a basis for continued in-depth research.

The new media companies are of interest for a number of reasons. They are seen as a sector of the future, where media meet ICT with the attendant growth in production and increase in skilled employment. Sweden's new media sector is advanced in this respect. These companies are an expression of a network economy which has brought into question some aspects of the traditional picture of labour relations.

This report is based on a questionnaire answered by the management of just over 300 companies that make CD-ROM and Internet productions. The questionnaire survey results provide information about the situation in new media companies and in the sector, and the future prospects as these companies see them. Production, the markets, the ownership structure, networks, employment and employer-employee relationships, education and company management's views of the problems and opportunities with regard to their development and expansion are all illustrated in tables and diagrams.

The survey presents an optimistic view. Future developments and follow-up studies will show whether this optimism is justified. At present companies are closing down, and both large and small companies are restructuring. Are we witnessing the maturing and consolidation of this sector, or is this trend the result of persistent profitability problems?

An important feature of the work on this study was the discussions we carried on in a European network that is preparing joint research on the theme of 'From Media to Multimedia Industries: Employment, Networks and Competence'. This network includes Peter Leisink of Holland (the initiator), Roman Hummel of Austria, Scott Lash of England and Lutz Michel of Germany. The group's work meetings, one of which was attended by some 15 European companies in this sector, were funded in part by the European Science Foundation.

Contacts with the interactive media education programme organized by the Swedish College of Film, Television, Radio and the Theatre (Ulf Söderström) and the Graphics Institute (Viveka Lundström and Yngve Sundblad) have also proved fruitful, as was the co-operation in a group that is preparing research on news production in the future (including Peter Ullmark and Dan Sjögren of The Swedish National Board of Industrial and Technical Development, NUTEK).

A study visit to New York's Silicon Alley to visit companies and examine the research on new media initiated by Marie Persson at WM-data Education, inspired the final stages of the work on this report. The New York New Media Survey has served as a valuable background to the Swedish questionnaire, and there are some comparisons and references to it in this report.

Many people have been involved in carrying out this study. First I would like to extend my particular thanks to those who, despite the pressures of their work schedules, found the time to answer the questionnaire, and also to Christofer Edling, who skilfully and promptly carried out the data processing and also read and commented on early drafts of the manuscript.

The questionnaire was produced in co-operation with the sectorial body, Promise (Producers of Interactive Media in Sweden), and the publication Vision. Promise made an important contribution to this work in the form of the efforts of Hasse Samuelsson, Henrik Ahlén (also of Ahead Multimedia), Caroline Weinhardt and Linda Carlsson. Henrik and Hasse made valuable comments on this report at its draft stage. Statistics Sweden (SCB) carried out telephone interviews of some of the companies. Lars Stahre and Cecilia Fjällström of Dagens Industri made available to us their list of companies published on the World Wide Web. The material was further processed on a regional basis. This work was financed by the Bergslagen Research Station. Via Teldok made the report available to people interested in telecom-linked ICT applications. I would like to thank everyone for their co-operation.

I am also grateful to the following people, who in various ways have contributed their advice and comments in the work on the questionnaire and in the processing and the production of the report. Niklas Bruun, Eric Elgemyr, David Jonsson, Annette Lilliestierna, Casten von Otter, Birgit Pingel and Anders Wikman, all of the Swedish National Institute for Working Life, and Lars-Inge Andersson, who succeeded in getting the computer network to process complicated files; Anders Kjellberg of the University of Lund, Suzanne Liljegren of Business Arena Stockholm, Teresia Widigs of Nutek, Lars Bolander and Björn Burell of Sweden's Multimedia Association; Håkan Henning of Etc, Bo-Eric Eriksson and Göran Larsson of the Swedish Graphic Workers Union, the participants in an international workshop arranged by Gerhard Fuchs at the Akademie Für Technikfolgenabschätzungen in Stuttgart, and Struan Robertson, who translated the Swedish original (after a few, minor changes in the text). Thanks also to P.G. Holmlöv and Telia Research who financed the translation. I alone am responsible for the shortcomings of this report.

Stockholm May 15, 1998

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New Media in Brief

- New media turnover is expected to grow by 100 per cent a year.
- Typical companies have 6–7 employees, but a small number of larger companies bring the average number of employees up to just under 20.
- New media companies are largely a big city phenomenon.
- The Internet dominates as a medium, with 80 per cent of all productions.
- CD-ROMs answer for only 16 per cent of the number of productions, but have a larger share of total turnover.
- Only 5 per cent of productions are games and entertainment, the dominant productions being for advertising and company presentations.
- Broad assignments are often carried out in the field of information, marketing and organization.
- Many of the companies also carry on other substantial activities, often in the field of ICT consultation.
- New media companies work together on these productions.
- 18 per cent of new media companies are subsidiaries with parent companies in a wide variety of sectors.
- Only 3 per cent of ownership is in venture capital companies.
- Four-fifths of productions are commissioned and four-fifths of customer companies are in the private sector.
- Exports and the establishment of offices abroad are expected to increase.
- The main obstacles to the further development of these enterprises are the shortage of qualified staff and of venture capital, and customers' lack of knowledge.
- 6 per cent of respondents in a part of the survey say they find labour law a major problem, and 20 per cent cite tax regulations as a major problem.

- The problems in company activities and operation are few and minor, and are largely in the fields of human resources development and finance.
- Many people on the companies' staff have higher education, particularly in computer-related studies.
- The most acute need for new employees in the next few years is in the field of computers.
- 85 per cent of staff are permanently employed, and only a quarter of employees are women.
- Average salaries are SEK 20,000 for project leaders and similar positions, and SEK 17,000 for administrative staff, but there is wide variation in the range of salaries paid within these two groups.
- Collective employer-trade union agreements are in effect in less than 20 per cent of the companies.
- 60 per cent of the companies have no unionized employees.
- Do we see a new model for employer-employee relations?
- Advanced training and the availability of venture capital are important issues at both the company and political levels.

The New Media Companies

The new media companies see their potential for expansion as considerable, a view also found in the political sphere at the regional, national and EU levels. It is the new ICT companies, particularly in their encounter with the media, that will create future employment and help to generate a powerful process of renewal. In the interaction between television, computers and telecommunications the traditional boundaries between these three areas are erased. The new media and ICT companies are information-based companies, a large majority of their employees are highly-educated, and they often operate in networks. They are futuristic, and they may point the way ahead for other sectors as well.

Yet this is an unknown sector inasmuch as we have little in-depth knowledge of it and, above all, we lack an adequate overall picture. Our nation-wide and comprehensive survey has helped generate new knowledge about this sector and its companies. The study is of new media companies that produce CD-ROMs and web pages.

The real optimism and considerable expectations do not, it appears, extend to profit margins. There are current profitability problems in both the large media corporation's investments in interactive media and the smaller new media companies, many of which have an inconsistent sectorial background. But the companies still continue to invest, the new and smaller companies often perhaps because this is an exciting area and because they have confidence in their business concepts, and the larger companies because they want to be sure they do not miss a future market and the predicted transformation of the media sector. In many cases this optimism will surely prove to have been justified, while in others the companies will find themselves in difficulties and go to the wall. A process of consolidation now appears to be under way: new media companies co-operate closely with one another in networks while business amalgamations, take-overs and closures are frequent occurrences.

New York provides a good illustration of the transformation in the new media companies. Two studies of New York have been completed. The first, in 1997, showed that 68 percent of companies had started in the preceding 3 years and 30 percent in the preceding 18 months. In the

18 months between the first and second survey, 17 per cent of these companies had ceased to exist.

Dagens Industri, the Swedish business daily paper, has made two studies of Internet companies in Sweden. They give basic data on turnover and type of products and services. Compared to our sample of companies, Dagens Industri excludes pure CD-ROM producers, but in addition to the producers in our sense of the term, they also include consultants, Internet service providers, operators and software and hardware suppliers. 500 companies were listed in 1997. Dagens Industri's Internet supplement of May 8, 1998 listed 418 companies. The fall is attributed to take-overs and mergers, which meant that several companies are now grouped under a single name, others have changed their business orientation, and about 5 per cent of the companies listed in 1997 have ceased trading. There are also more companies in 1998 than in the previous year that are unwilling to provide the information requested on turnover on Internet operations, and these were not included in the published list. In some cases this reluctance may be interpreted as an indication that turnover failed to meet expectations.

New media companies in our Swedish study identify three main obstacles to expansion and development: a shortage of qualified staff, a shortage of venture capital and gaps in their customers' knowledge. All three are areas where political decisions can help improve the situation. The companies place more emphasis on these external problems than on their own inadequacies in running their operations. One may be tempted to attribute problems of growth and profitability, for example, to the external world rather than looking for their causes in the way they organize and run their own businesses. Seen from outside, it would not be surprising to find that these new companies, in a new and growing sector, using new technology and with young managements, also had substantial problems with their own organization and efficiency.

The transformation generated by new media and communications networks impacts on both *the media industry* and on *all other kinds of organizations and enterprises*. These different segments may well face different futures. Although some entertainment websites appear to have proved less profitable, this does not impair the success of, for example, companies that develop interactive communications systems and multimedia as a part of their consultation work on organization and ICT for other businesses. Let us look in more detail at the transformation in (i) media companies and (ii) organizations in general.

(i) *When the traditional media (the press, radio and tv) encounters ICT changes occur in work and production in this sector.* A new media industry is created, that publishes its products on the Internet and on CD-ROMs. Digitalization (information stored as 0s and 1s in a computer) is a technical prerequisite for this change, and pictures, sound and text may be stored in the same digital form and may interact in new ways (multimedia). Its users can choose the path they take through the content of these media, and can also create their own content and communicate with others (interactive media). All this generates a rapid and fundamental renewal of the media industry. Let us examine this renewal in some detail.

Technical innovations in information and communications technology (ICT) provide the basic conditions for this transformation. Information is *digitalized*, and a global infrastructure of communications networks is created. *The Internet* is central to these networks.

These technical advances interact with other basic processes such as internationalization, liberalization, privatization, deregularization and the greater flexibility of production and labour markets. This results in a sectorial drift and the convergence and integration of traditional media industries with parts of the new media industry.

Here, media means not only media industries, but usually also different media in the sense of *text, sound, pictures and graphics*. Digitalization allows these media to interact and complement one another in so-called multimedia productions.¹ Digital media are often highly *multimedia* in nature. Sophisticated multimedia productions also contain moving pictures and 3-D presentations. Band width limitations still pose a problem for moving pictures on the Internet and for 3-D. Today, CD-ROMs already allow more sophisticated solutions. In Sweden the term multimedia has increasingly come to mean CD-ROM productions.

Digital media are also highly *interactive*. The user can make choices and can usually interact with other users. The high degree of interaction is, perhaps, the main characteristic of new media. But we should note that this is a question of degree; people can also choose their path through a newspaper and take part in listener call-in programmes on the radio.

1. The term 'multimodal productions' is sometimes used here. Text, sound and pictures are then called 'modalities' and not media. Yet another complication in the use of language is that in this sector cd-roms and the Internet are referred to as the two principal media for productions.

Digital media are also not subject to *time constraints* to the extent that, unlike the telephone or tv, people can 'log on' at any time and programmes and messages may be continuously updated. They can also be 'consumed', and commented on when the user so decides.

(ii) These advances, with the new opportunities they afford for presentation and interaction, together with 'electronic networks' for communication within and between companies, and between people both as individuals and as citizens, pave the way for *substantial changes to be made in all kinds of activities and sectors*, and not only in the media industry alone. Communication, confidence, co-ordination, control, influence and democracy are all aspects affected by new technology and the new network organization. Discussions of the future bring into focus the meeting of media and information and communications technology. A basic theme is '*new.media@work*', i.e., the applications of new media and their place in the world of work. The report contains basic information for people who wish to give further thought to these economic, social and politically defining issues.

The European research network 'From Media to Multimedia Industries' (which is mentioned in the Foreword) has published a special issue on *Multimedia@Jobs* in the *Medien-Journal* of Salzburg. I shall make some comparisons between the Swedish sector and the situation in Germany, Holland and Austria that, respectively, Lutz Michel, Peter Leisink and Roman Hummel describe in their articles.

Let us consider the media industry in light of an essay by Scott Lash published in the same journal. Companies co-operate in more or less hierarchical networks, sometimes at the global level, and large media corporations are produced by take-overs and mergers. The media are an important industry in the network society. In the new global network society it is foremost the large companies in the information sector that are the dominant actors. The control of the production of content, content factories such as Hollywood and the television studios, are important, as they were in the 'old media society'. But the means of distribution, the electronic superhighways: cables, fibre optics, the satellite frequencies and finally the Internet and other networks, may become increasingly important. Here there are companies that aim to control links, computers and what is inside them, and they tend to integrate backwards towards the production of content. Scott Lash gives us a broader perspective before we return to the daily world of Sweden's new media companies.

The study presented here has its background in studies in the field of newspaper production in the 1970s and 80s and a constant interest in new forms of modern company and work organization in which new media now play a central part. This has been described in books such as 'Technological Change and Co-determination in Sweden'. This book and a current issue of the journal 'Economic and Industrial Democracy' contain reviews of research on technology, ICT and work organization. These complement the descriptions of ICT and employment in the ICT report (IT-rapporten) published (in Swedish) by The National Institute for Working Life and written by Kurt Lundgren and Sofia Wirberg.

The purpose of this survey was to produce in broad outline a descriptive picture of the new media industry and its companies in Sweden. This study is intended to form a basis for further research and studies. A further step would be to repeat the questionnaire survey to create a dynamic picture of the emergence of this new sector in a comparative and international perspective. To the results of the questionnaire survey may be added theoretical studies and more in-depth studies of companies in different areas of the new media industry. This is thus a question of both new media technology in the media industry itself, including the news distribution of the future, and also new media as an aspect of changes to companies and networks in various branches. The focus will be on knowledge, industrial organization, networks and organizations, and on the aspects of democracy that concern access to and the possibilities of using the new media. Such research, focused on technology, organization and society, is intended to interact with research on computer science, design and art.

The Results of the Study

The study targeted companies that produce new media: CD-ROMs and Internet solutions. We did not include, for example, suppliers of Internet equipment, hardware and software companies and training companies unless they were also producers in our sense.

We identified some 750 companies, roughly 600 of which proved to be active in the sector as 'producers of new media'. Half of these companies answered the questionnaire. There are more details of the design and implementation of the questionnaire survey at the end of this report.

600 is a low estimate of the number of companies covered. We had limited resources with which to build a complete database, and more time and effort would certainly have added to the list. A conservative guess of the scope of the whole sector in Sweden may be made by multiplying the mean figures for the number of employees and the turnover, for example, by 600. A significant reservation, which led us to be very restrictive in making such calculations, is that we have insufficient basic data to be sure that the 302 companies that responded to the questionnaire are representative of all 600 companies in the database or of the entire (and partly unknown) sector. It may be, for example, that the companies that answered are on average larger than those that did not answer and those we have not found. We may also have missed some 'new media departments' in larger enterprises in other sectors.

How large is this sector in other countries? Expert assessments say that in Germany there are between 600 and 800 new media companies. This figure includes both producers and service companies, mainly the providers of education in this field, and so a rather broader definition than ours has been applied. Thus Sweden appears to have a comparatively large number of companies in this sector. Sweden is also well ahead in mobile telephone ownership, Internet use, computer use and the like (see Teldok report no. 115, on Sweden). Their use is not evenly spread across the social spectrum, but initiatives such as the so-called LO-Computer (a bargain-priced package for trade union members that includes an Internet server subscription), cut-price computers from one's employer and computers in schools can help to close the information gaps. It is likely that broad knowledge about and access to new information and communications technology also creates favourable conditions for the development of the new media industry. As we shall

see, the companies in this sector consider their customers' lack of knowledge to be one of the most serious obstacles to their growth. Infrastructure and telecommunications are not seen as a major obstacle. In fact, Sweden has, thanks to its early deregulation, a good position here, perhaps particularly in Stockholm with its municipal cable-laying programme. Below we present the results of the questionnaire survey in more detail, theme by theme. The diagrams have been inserted into the text. Tables containing virtually all the basic numerical data are presented in a separate section. The diagrams and tables may be quoted freely, attributed to source: *New Media in Sweden. The Swedish New Media and Internet Industry Survey*. The Swedish National Institute for Working Life, Åke Sandberg, 1998.

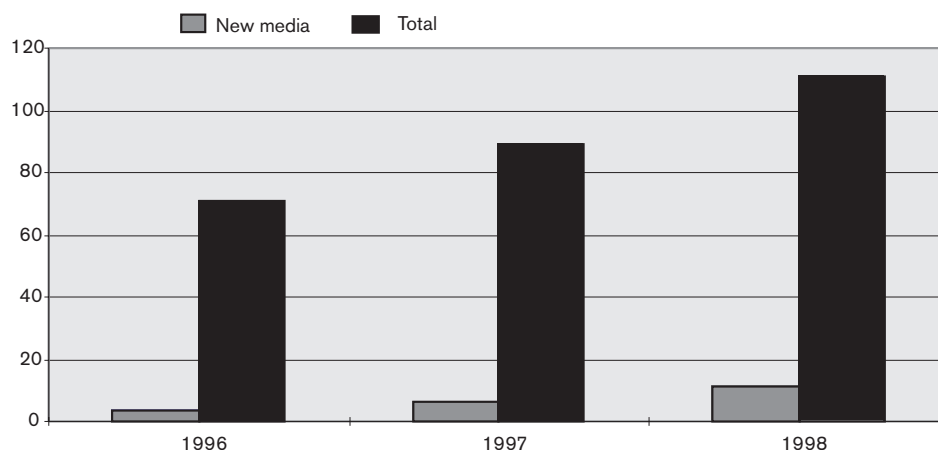
Size and Geography

The new media sector expects its turnover to increase by 100 per cent a year

The new media companies are small and have an average turnover within new media production in 1996 of just over SEK 3 million. However, a rapid growth in turnover is forecast, and in 1997 it was estimated at SEK 6 million and the forecast for 1998 is SEK 11 million. In these years median turnover rose from, respectively, SEK 1 to 3 and 5 million. Thus, an exceptional growth rate of 100 per cent a year is forecast.

The number of new media productions per company was a median of 10 and an average of 18 in 1996. Expansion for one year, from 1996 to 1997, was estimated at 50 per cent. In comparison, the German new media companies had an average 1996 turnover of close to SEK 10 million, a rise of 40 per cent in a year, and their average size is three times that of the Swedish companies. In New York in 18 months between 1995 and 1997, companies with a turnover of less than USD 1 million rose from 63 per cent to 83 per cent of the total number of companies, but at the same time the 5 per cent of companies with a turnover higher than USD 5 million have over 70 per cent of total revenues.² Small and large

Diagram 1. Turnover and estimated turnover (MSEK)



2. The survey in the New York area was of a random selection of 430 company managers from over 6,000 companies. More qualitative interviews were also carried out.

companies appear to expand in interaction with one another and to complement one another.

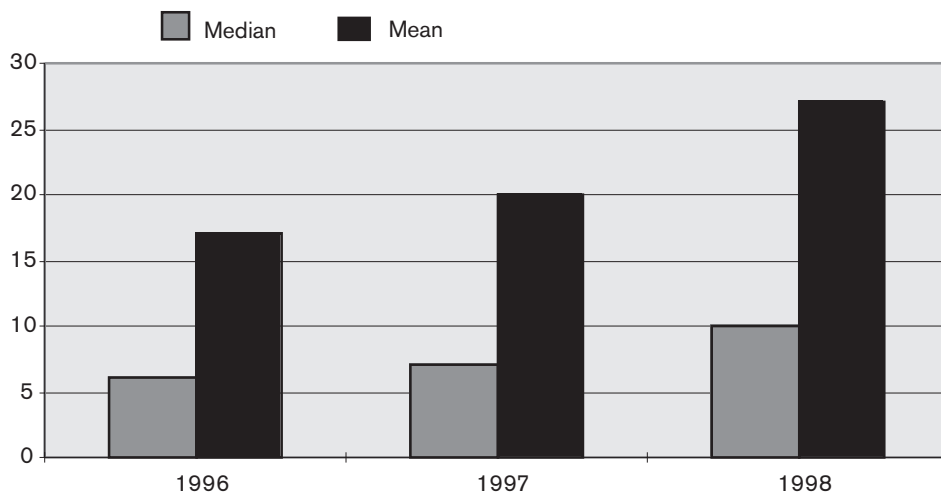
Not infrequently, a company with other activities will run a new media operation, with new media as a small part of its overall business. In total, the share of new media is on average only 5 per cent of these companies' 1996 turnover, but is expected to double to 10 per cent by the end of 1998.

Just over 200 of the companies that answered the questionnaire have given full details of their production in the different media. 33 per cent of companies produce for the Internet and no other new media. In 1996 they had a lower turnover in new media than the average for the sector, at just over SEK 2 million as against SEK 3 million for the sector. When the Internet was included as part of the business of a company which also had other areas of activity than the new media, the company had an average total turnover of SEK 5 million against the sector's average total turnover of SEK 71 million.

Typical new media companies have 6–7 employees, but a few large companies bring up the average to just under 20 employees

The median number of employees in new media companies in 1996 was 6. It is estimated at 10 for 1998. The average workforce size is, respectively 17 and 27 employees. The average number is higher than the median because it is brought up by a few companies with a large number of employees, while most companies have a fairly small staff. This

Diagram 2. Number of employees



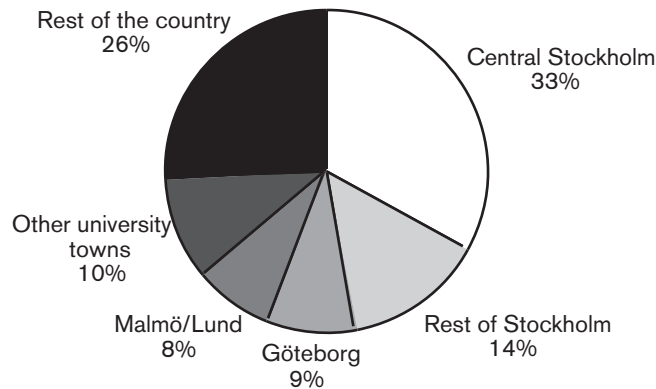
includes all people employed in the company irrespective of occupation; many companies have mixed production, which makes it difficult to identify which employees are working on new media. Measured by number of employees, the rate of increase is significantly slower than the rise in turnover, and the companies appear to count on an increase in turnover per employee.

New media companies are largely a big city phenomenon

New media companies are very much a big city phenomenon. The Stockholm's inner city business centre dominates the picture with as much as 33 per cent of all new media companies. Greater Stockholm (Stockholm and the immediate suburbs³) has almost half Sweden's new media companies (47 per cent).

Taken together, 64 per cent of Sweden's new media companies are in the three largest cities, 9 per cent in Göteborg⁴, and 8 per cent in Malmö-Lund⁵. Almost 11 per cent of the new media companies are located in the 4 other university towns of Linköping, Umeå, Uppsala and Luleå. The university towns (not counting the new regional universities of higher education) thus have a total of 75 per cent of the companies, with the remaining 25 per cent spread through the country.

Diagram 3. The geographic spread of companies



3. This area was defined by the first two figures of the postal code. Thus Stockholm includes Arlanda town, Bandhagen, Bromma, Danderyd, Gustavsberg, Haninge, Kista, Lidingö, Munsö, Nacka, Nynäshamn, Saltsjöbaden, Saltsjö-Boo, Sollentuna, Solna, Sundbyberg, Täby and Upplands-Väsby.

4. Including the Göteborg skerries and Mölndal/Mölnlycke.

5. Including Falsterbo (one company).

Although the production is in bit format (0s and 1s) that is easy to transmit electronically, we find a particularly high geographic concentration of these companies in the big cities and the university towns. There are other factors that encourage the growth of local and regional clusters of new media companies. These factors include available competence and employees, infrastructure, a creative environment involving other media enterprises in advertising and publishing, and companies in related sectors and that the customers, including the head offices of the larger companies are located in the vicinity. In the case of Stockholm the presence of Ericssons and Telia helps create a favourable climate for this sector. But it is likely that specialized companies, many of them sub-contractors to the new media producers to which we have limited this study are, and will continue to be, more widely dispersed throughout the country.

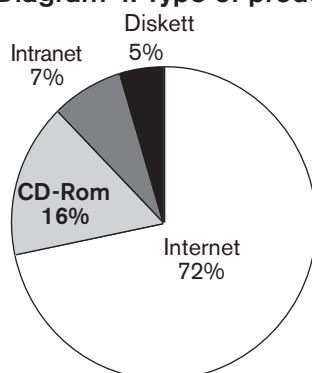
If we assume that Stockholm has 50 per cent of the just over 600 companies we have located in Sweden, there are some three hundred companies in the capital. One of the foremost new media centres, Manhattan in New York, is estimated to have just over 2,200 new media companies, by a very broad definition that encompasses content design and development, marketing, distribution, electronic trading, software development, and tools for content development as well as the service and support services for new media. A well-informed New York source estimates that there may be around 700 new media producers in Manhattan. The New York questionnaire survey also revealed that just over 60 per cent of companies in the whole of New York are involved with content design and development, including specialist sub-contractors.

The Products and Types of Assignment

The overwhelming majority of productions are dominated by productions for the Internet, which has an 80 per cent share

Among the types of media, the Internet and intranets (communications networks within companies) are in an overwhelming majority with close to 80 per cent of the total number of productions in the companies covered by the study. The Internet alone answers for 72 per cent of productions. CD-ROMs have 16 per cent and diskettes 5 per cent.

Diagram 4. Type of product



CD-ROMs are 16 per cent of productions but have a larger share of the turnover

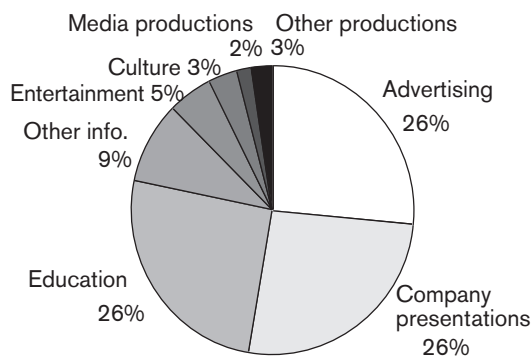
Calculating the various medias' share of turnover gives us a different picture. A typical CD-ROM production can cost upwards of SEK 500,000, while many Internet productions are around SEK 100,000, although there are also major Internet and intranet productions for companies. Furthermore, a CD-ROM production is complete at the time the diskette is pressed, while it is far more difficult to define what may be considered a new Internet production and what is an update or refinement of an earlier production.

The German survey, although it had divided production in a very different way, showed that some three-quarters of German companies see CD-ROM production as their core business. CD-ROMs answered for a quarter of turnover and on-line multimedia for only 9 per cent (in addition to programming, training, consultation etc.). Thus Internet productions seem to carry substantially more weight in Swedish companies than in their German counterparts.

Only 5 per cent of productions are games and entertainment, and the large majority of productions are advertising and company presentations

Most productions are advertising and company presentations, with the combined share of these two types of production totalling over 50 per cent. Education answers for as much as 26 per cent, while games and entertainment productions total as little as five per cent of the number of productions.

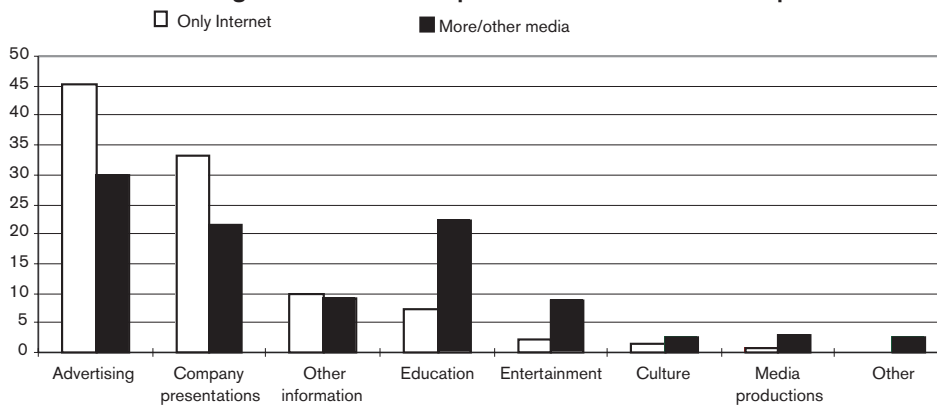
Diagram 5. Content of new media productions



Companies that produce exclusively for the Internet are almost wholly dominated by advertising and Internet production at close to 80 per cent (advertising at 46 per cent and company presentations 33 per cent).

The picture of Internet productions coincides with the way companies use their homepages. The average figures for home page use in the food, mechanical engineering and electronics industries, transport services and computer consultants are that 88 per cent use their home pages to

Diagram 6. Content of production in excl. Internet producers



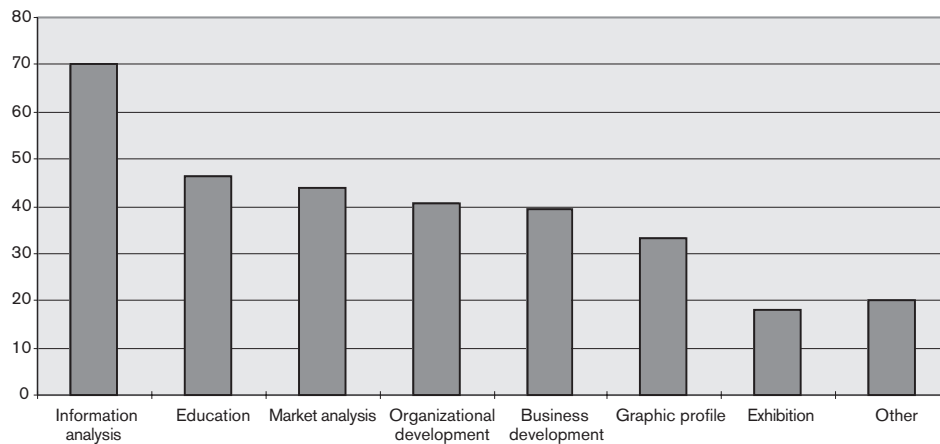
give information about products and services, 70 per cent to provide background information about the company and 22 per cent of companies use their pages to give customers the opportunity to order goods and services (electronic commerce). The first two figures are notably higher for the computer consulting companies at respectively 96 and 84 per cent. This is a sector that may be assumed to be similar to the new media sector itself (Nutek R1998:17).

Commissions often encompass the fields of information, marketing and organization

Barely half of the new media companies' assignments extend beyond the new media to become part of different kinds of more extensive assignment. These broader commissions are mostly on information strategies, which are found in 70 per cent of new media companies. Assignments in education as well as in marketing are to be found in 45 per cent of companies, organization and business development work both in about 40 per cent of companies, and graphic profiling in 30 percent. A single new media company may handle commissions in a number of different areas.

Most new media companies that take broader commissions are clearly specialized. Half the companies only work in one or two areas.

Diagram 7. Type of broader commission



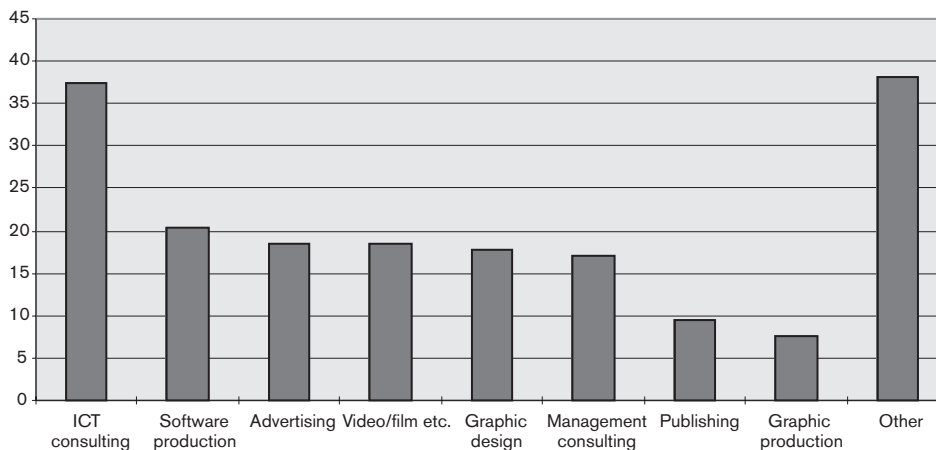
Many companies have other substantial operations, mainly in ICT consultation

More than half the companies (56 per cent) state that they have other extensive activities in addition to new media productions, and among

them over 60 per cent are specialized in *one* of these other activities. ICT consultation is the dominant activity, involving close to 40 per cent of the companies. Around 20 per cent of companies operate in advertising, film/video/tv/av, graphic design and management consultation. Barely 10 per cent of the companies are involved in publishing, and the same percentage in graphic production. However, close to 40 per cent of companies have substantial operations in quite different, unrelated areas. It is not uncommon in emerging innovative sectors to find that entrepreneurs from quite unrelated sectors see growth potential in a new area.

In the German companies, where CD-ROMs have proved to be a core product, the industry's background is, not surprisingly, different. In Germany, the classic graphics industry and audio-visual media industry are the dominant backgrounds.

Diagram 8. Companies' other main business activities



New media companies work together on productions

If a company does not have all the expertise it needs for an assignment, it collaborates with other companies. Three-quarters of the companies say that they co-operate with other new media companies in work on new productions. This co-operation is most common with advertising and PR companies, and over 50 per cent of new media companies have experience of such collaboration. Other common partners in co-operation are companies that specialise in video/film, software development and graphic design. 60 per cent of companies that collaborate with other companies usually work only with companies in one or possibly two different categories.

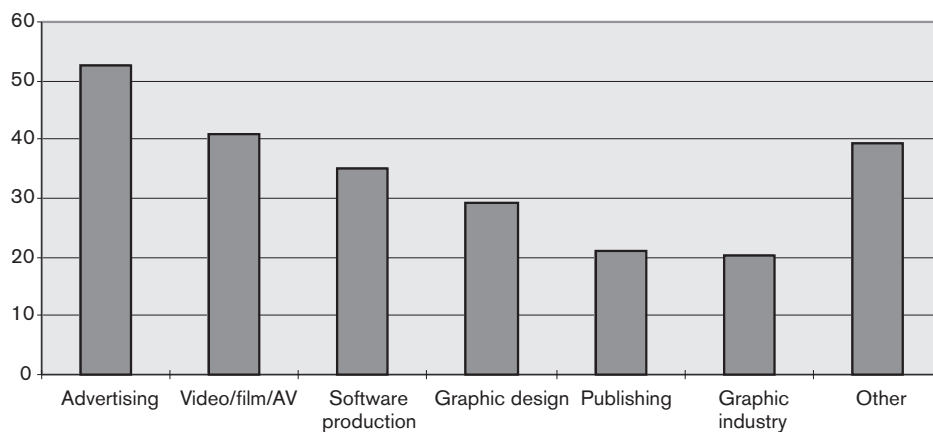
What work do the companies do themselves and what do they outsource? Companies in Holland do most of the creative work themselves (creative conception, manuscripts etc.) and they also do most of the programming and graphic design. They outsource physical production, sound and video.

As stated earlier, these networks are often local. Over 60 per cent of the New York companies' subcontractors are located in New York City. Geographic proximity is the main reason. On the other hand, these companies forecast more use of teleworkers, above all in marketing and sales, programming and also creative work.

Collaboration in production networks and confidence between companies is part of the emerging network economy in the network society that Manuel Castells, the Berkeley professor of sociology and planning, describes. Co-operation and trust can be expected to be particularly important in a sector such as new media, where production chains are long and a wide range of skills and actors have to interact under severe time constraints.

Large companies work in close co-operation with specialized subcontractors, and collaboration between small companies enables them to handle large commissions. Highly-developed co-operation of this kind, despite the competition for assignments, appears at the international level to characterize regions and successful clusters of companies in the new media sector.⁶

Diagram 9. Type of partner



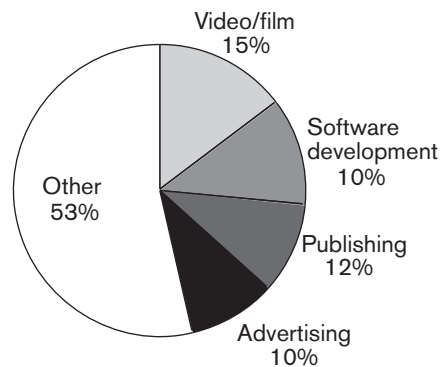
⁶. Contributions and discussion at the Stuttgart workshop mentioned in the Foreword.

Ownership

18 per cent of the companies are subsidiaries, with parent companies in widely diverse sectors

18 per cent of new media companies are subsidiaries. The parent companies' areas of operations are very diverse. 10 per cent are in advertising, 40 per cent in video/film/tv/av, 12 per cent in publishing and 10 per cent in both software production and advertising. Only a couple of per cent of parent companies are in the graphics industry. As many as 54 per cent have a different background than these related industries, so the parent companies are very varied. Again, we appear to see entrepreneurs who perceive new media as an exciting area, irrespective of their former sectorial expertise.

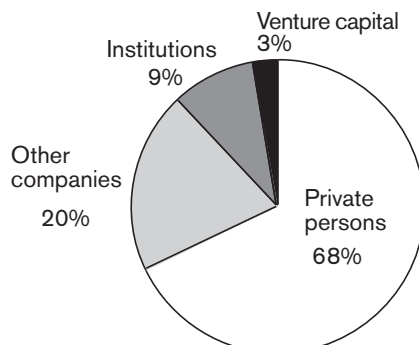
Diagram 10. Core activity of mother company



Only 3 per cent of company ownership is in venture capital companies

Close to 70 per cent of company shares are privately-owned, and only 3 per cent are owned by venture capital companies. Close to 30 per cent of the companies predict that they will bring in new owners within a year.

Diagram 11. Owners



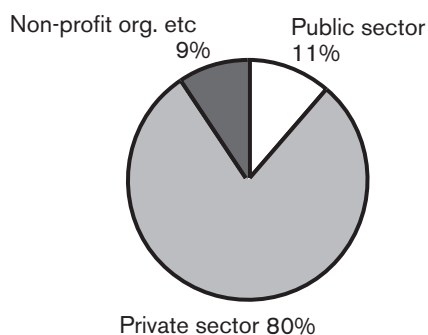
Customers and markets

Four-fifths of the productions are commissioned and four-fifths of customer companies are in the private sector

Some 80 per cent of productions are customer assignments and 20 per cent are products for the open market. Private companies are in a large majority among customers who commission work, at close to 80 per cent. The public sector and government, and non-profit organizations etc. each answer for about 10 per cent. About 45 per cent of commissioned work comes from customer companies with up to 100 employees and 36 per cent from companies with over 500 employees.

In Holland a larger share of the commissioned work comes from the public sector. As much as 31 per cent of Dutch commissions come from public administrations, 16 per cent from educational institutions and 8 per cent from cultural institutions.

Diagram 12. Sectors of clients



An increase is forecast in exports and overseas branches

Just on 20 per cent of the new media companies were active exporters in 1996. Twice that number expect to export in the next year. At the time of the interviews 8 per cent of companies had set up offices in other countries, while about 25 per cent expected to have offices abroad in the next few years. There is considerable optimism about success in foreign markets, and follow-up studies may show whether this optimism is justified.

Challenges and possibilities for the companies

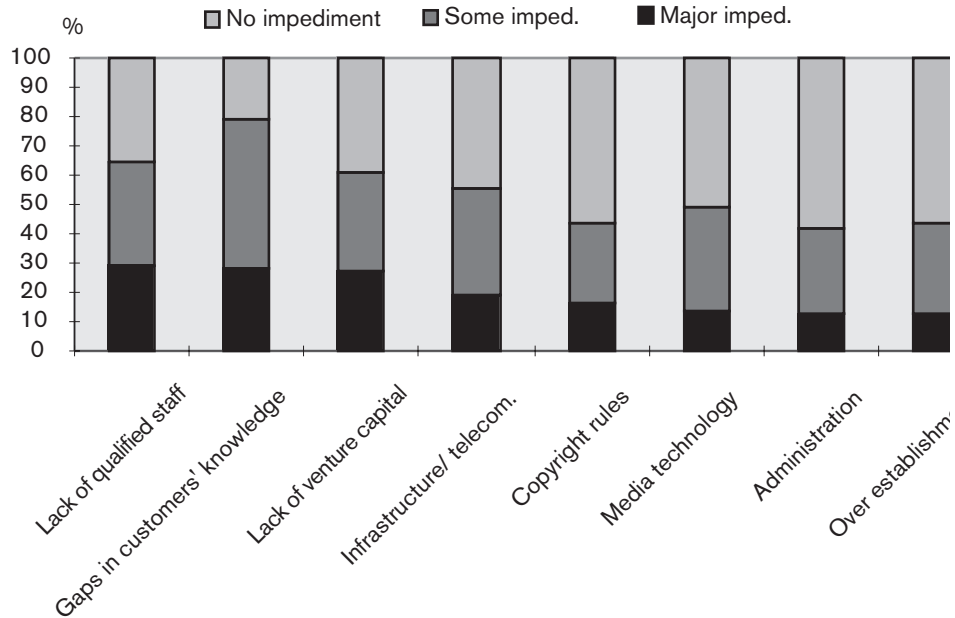
The main impediments to these companies' development are the shortage of qualified staff and of venture capital, and the customers' lack of knowledge

Close to 30 per cent of the companies have identified three factors that are major difficulties in the path of their company's development: the shortage of qualified staff, the shortage of venture capital and customers' lack of knowledge and understanding of this sector.

80 per cent of companies report insufficient knowledge among customers as either a major difficulty or some difficulty that obstructs their development. Between 65 and 50 per cent of companies identify a shortage of qualified staff and of venture capital, telecommunications and other media technology as a major or some obstacle to expansion. At the bottom of the list are copyright law, excessive over-establishment of companies in the sector, and the company's own administration, all of which are mentioned as obstacles by just over 40 per cent of companies. In view of the international discussion in this sector, it is surprising that there are not far more companies that see copyright issues as a problem.

41 per cent of the companies in Holland say that ambiguous copyright laws constitute the biggest obstacle. Other significant problems in Holland can be recognized from the Swedish questionnaire responses: a shortage of competent staff, customers' inadequate knowledge of the sector, and the technical infrastructure. Problems with quality and reliability standards are also a problem which, according to Peter Leisink, are related to the shortage of competent staff and, it may be added, also to customers' lack of knowledge. This gives particular emphasis to the question of education. There is a discussion in Holland on the creation of a professional association that would be exclusive to

Diagram 13. Impediments to business development

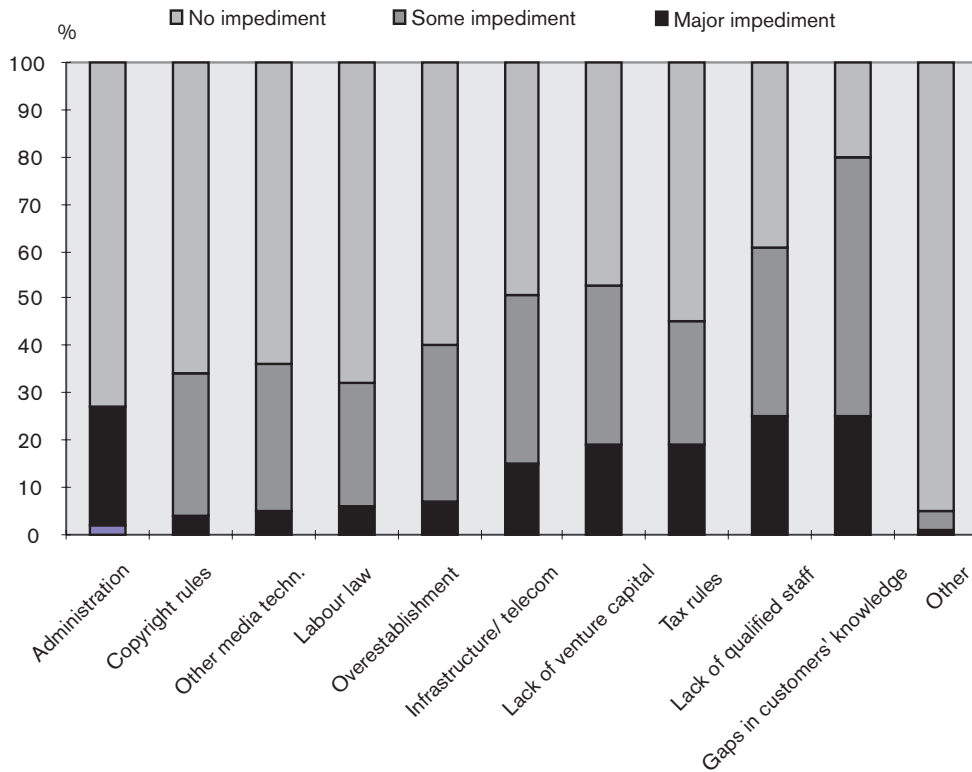


companies that meet the standards of professionalism and liquidity. In a future-oriented study, Austrian experts say that a special ‘certified’ training in the new media is necessary.

One fifth of the New York-based companies ranked sweeping tax cuts as clearly the most important of several possible single political initiatives. In fourth place, and down to 7 per cent, was leading programming talent and in twelfth place support for occupational training (less than 5 per cent). Foremost among the ‘highly desirable’ types of support from the public sector was financing, technology and infrastructure. New York City supports the new media companies, inter alia by inexpensive and suitable premises and by means of ‘public-private partnerships’ for venture capital. In light of the European studies, the weak emphasis on education is worthy of note. In the New York study the researchers’ own conclusions were, however, that a world class programme of computer studies was a high priority policy issue.

In a part of the survey 6 per cent of respondents said that labour law was a major obstacle, and 20 per cent said that tax provisions were a major problem
 The latest questionnaires distributed to Swedish companies contained more detailed alternative answers to the questions on impediments to

Diagram 14. Impediments to business development (part of survey)



company development.⁷ Here too, the greatest obstacle was reported as insufficient knowledge among customers and the lack of qualified personnel and of venture capital. Only 2 per cent of the companies said that their own administration was a significant problem, but we had several alternative answers here which could in part be seen as more detailed descriptions of administrative problems.

Generally speaking, the companies in this group tend to think that there are not so many 'major obstacles'. Close to 20 per cent gave tax regulations as a major obstacle, while 55 per cent say they are no problem

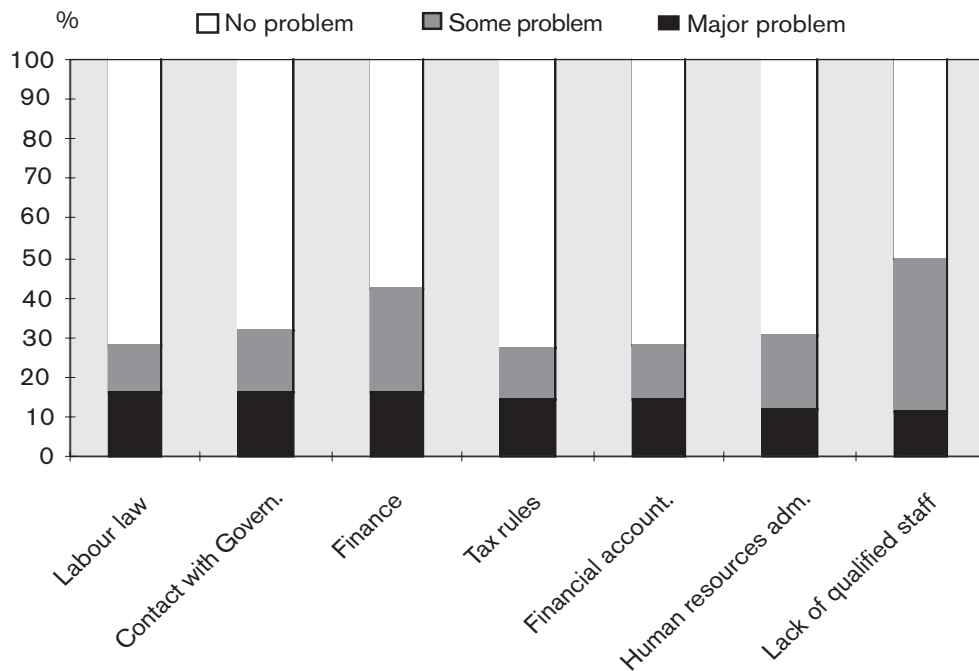
7. From the latest interviews we have just over 100 responses to these more detailed alternative answers on impediments to development. It is likely that there is a greater dominance of Internet productions among these companies than in our database as a whole. (Following the difficulties we experienced in getting answers to some questions, and after realizing that in some cases we had not included important response alternatives, we modified the questionnaire on some points. We took this into consideration when coding the responses.)

at all. 6 per cent see labour law as a major difficulty, 26 per cent as giving some difficulty and close to 70 per cent see labour law as no problem at all. Here, it must be re-emphasized that these figures are based on responses from companies in a smaller segment of the total survey.

Problems in companies' own activities and operation are minor, and foremost in human resources development and finance

When it comes to companies' perceptions of their own activities and the different functions within their own organizations, company management sees relatively few problems. In labour law, tax accounting, contacts with government agencies, financial accounting and human resources administration, as many as 70 per cent say they experience no problems at all. The only problems given particular mention were staff competence development and finance, where, respectively 50 and just over 40 per cent of the companies said they had major or some problems. Corresponding figures for all other areas, such as labour law issues, relations with banks/financing, financial accounting, tax accounting and contact with government agencies, are around or under 30 per cent.

Diagram 15. Problems in operating business



Personnel

Many of the companies' employees have higher education qualifications, particularly oriented towards computer studies

People working in new media companies are highly qualified. 60 per cent have some form of university education and rather more than 50 per cent have a complete university degree. Just on 20 per cent have no higher than upper-secondary education and barely 20 per cent have undergone some form of special occupational training.

Few companies gave complete responses to the question on type of qualifications, but the responses we received indicate that just over 50 per cent of all company employees have completed courses in computer studies, programming or systems development. 13 per cent have qualifications in advertising and marketing and a rather lower percentage in business economics and management and multimedia studies. 5 per cent have graphics training and as many have design qualifications.

Just over 70 per cent of companies have at least one person on their staff with computer training, half have at least one person with a business economics and management qualification. A third have at least one advertising specialist and one multimedia specialist on their staff. A quarter of companies have someone with design and someone with graphics qualifications.

In German new media companies, at least 75 per cent of employees in the various professional categories have academic qualifications, particularly the project leaders, 85 per cent of whom have an academic qualification. In comparing these figures with the lower average figures for Sweden, one must bear in mind that these figures cover all employees, including administrative and 'other production personnel'.

Companies in Germany, Holland and Austria emphasize in addition to the different categories of core skills (creative work, ICT and management/business competence), skills such as communication, teamwork, customer-orientation, flexibility and similar personal attributes.

The next year will see the demand for new staff highest in the computer area over the next few years

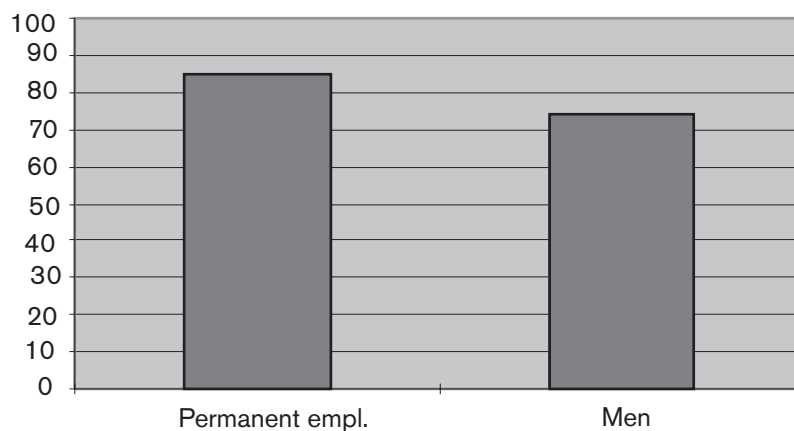
It was difficult to obtain answers to questions on staff recruitment problems, but when in the most recent questionnaires we asked about personnel requirements we obtained a rather better result, with just over

half the 116 respondents giving details of their personnel needs. Thus there is only a limited basis on which to generalize. 90 per cent of the companies aim to recruit staff in computing in the coming year. Substantially fewer, but still 15–20 per cent of companies intend to recruit staff with qualifications into the functions of advertising, business administration, new media and technology/science. As a comparison, companies in New York report that recruitment to computer programming and technology management posed the greatest problems.

A clear majority of staff (85 per cent) have permanent employment, and only a quarter of employees are women

As mentioned at the beginning of this report, the new media companies are small. In 1997 they had an average of 20 employees (total number of employees) and the median is 7 employees. 85 per cent were permanently employed and 15 per cent employed for a limited period. This is virtually the same figure as for the Swedish labour force in general. Although the percentage of self-employed people is probably higher in the new media sector than the average for the labour market as a whole, the responses on this point are an expression of the traditional Swedish labour market and work organization, and not an example of what is assumed to be the flexible jobs of the future, with a small number of permanent positions. Despite this, it is possible that employees may have a considerable degree of mobility, although we have not studied this factor in detail.

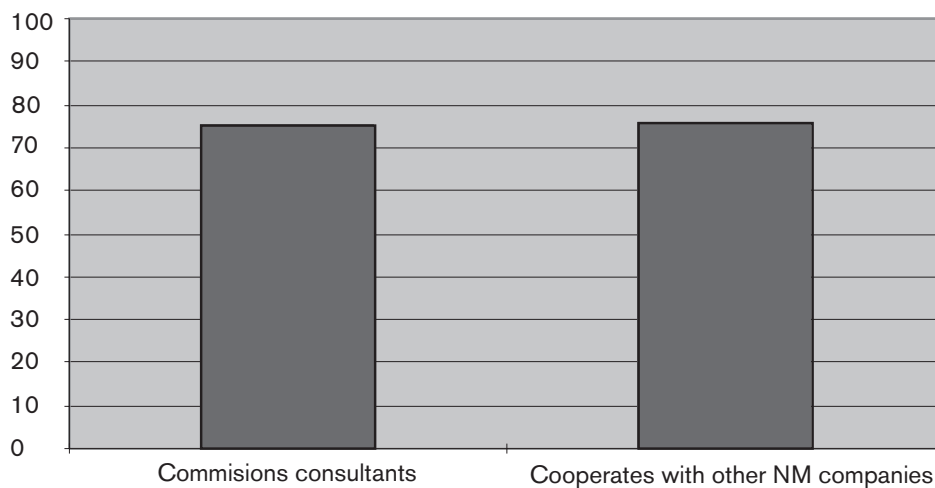
Diagram 16. Forms of employment; gender



Only 25 per cent of employees are women. This is at the same level as for systems designers/programmers and for brokers and people in advertising agencies where, respectively, 25 and 31 per cent of employees were women, according to the Statistics Sweden 1995 Labour Force Survey.

In addition to their own employees, three-quarters of the companies make frequent use of consultants. Consultants are about 15 per cent of the total workforce in this sector, the median being 8 to 10 per cent. As we have already seen, it is also very common for a number of companies to collaborate on a single production, either in networks on an equal footing, or by outsourcing. It is likely that more detailed studies of new media networks will uncover many virtual organizations.

Diagram 17. Comp:s cooperating with others



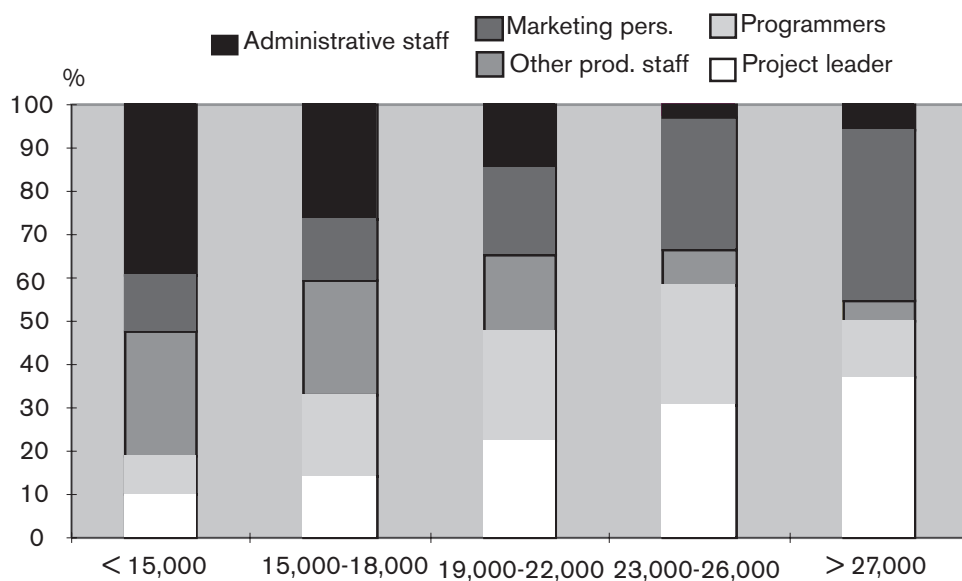
In Germany, companies had an average of 12 permanent employees and as many as 8 freelancers in 1996. This latter group probably includes people identified in our study as limited-period employees and consultants. If we combine these two groups, they make up together less than 30 per cent of all staff in this sector in Sweden, as against the 40 per cent of freelancers in Germany.

Average salaries are SEK 20,000 a month for project leaders etc., and SEK 17,000 a month for administrative staff, but there is considerable variation within these groups

As a rough estimate, the fixed average monthly salaries for project leaders, marketing staff and programmers is around and somewhat over SEK 20,000. The salaries of other production staff and administrative staff is estimated at around SEK 17,000. But there are wide variations in all categories, ranging from average salaries of under SEK 15,000 to over SEK 27,000 a month. A third of the companies report making overtime payments.

In addition to the fixed salaries, 25 per cent of the companies have profit-sharing schemes and in 15 per cent of companies these schemes are open to all employees. 15 per cent of the companies have stock option schemes.

Diagram 18. Salaries

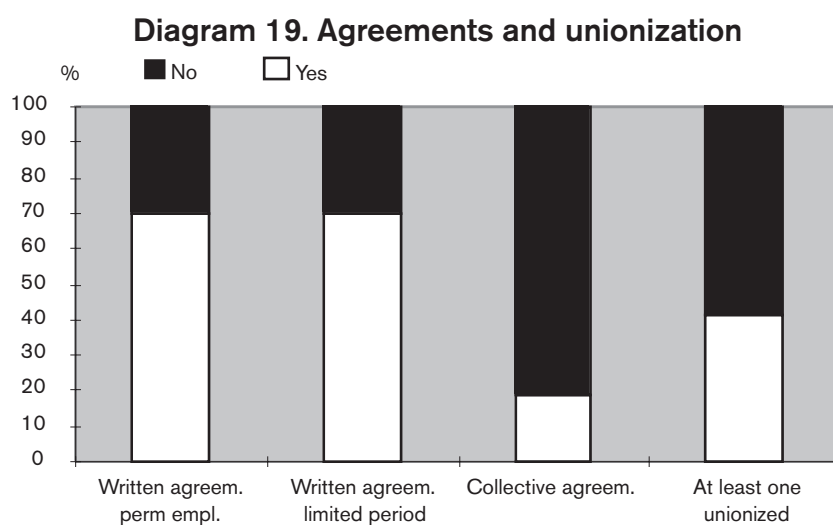


Collective agreements and trade union membership

Less than 20 per cent of the new media companies have employer-trade union collective agreements

Collective agreements are in effect in less than 20 per cent of the new media companies. This figure is low compared with the Swedish labour market as a whole. 30 per cent of the companies have no written employment contracts at all. In comparison it should be mentioned that 90 per cent of all Sweden's private sector employees are covered by a collective agreement, a very high figure in an international perspective. The new media companies have a different pattern. (We have, however, no processed data on the percentage of employees in the new media sector that are covered by collective agreements.)

Where there are collective agreements, they have been signed with the Union of Clerical and Technical Employees in Industry (SIF) in almost 40 per cent of companies, with the Salaried Employees' Union (HTF), the Union of Journalists (SJF) and the Graphic Workers' Union (GF), but a long list of other trade unions are also represented in individual companies.



Some form of industrial dispute has been reported by just on 7 per cent of the companies. The disputes were over termination of employment on the grounds of a competing activity, personal reasons (other than a lack of competence), work shortages, and pay disputes.

No trade union members in 60 per cent of the companies

We asked the company managements what they knew about trade union membership among their employees. Just over 40 per cent report that none of the company's employees were trade union members. Some employees may be union members without their management's knowledge.

Management in the companies where it is known that there are unionized employees estimate that on average 48 per cent of their staff are unionized. The median figure is 40 per cent. We have details from a smaller number of companies of which trade unions their employees have joined. The SIF is easily the most popular union, being represented at half of these companies. Far fewer companies mention, in order of size, the HTF, the SJF, the GF and the JUSEK (the Federation of lawyers, economists, system managers, human resource managers and other social scientists). By far the most common situation is that only one trade union is represented in a company.

Both collective agreements and trade union members are most frequently found in the larger companies. The average number of employees for companies that have collective agreements or union members is, respectively, almost 40 and 30, and for companies that do not have collective agreements or union members the figures are, respectively, 12 and 7.

The low level of union penetration and the low percentage of companies that have signed collective agreements is not surprising. The new media companies have all the features that are considered to be characteristic of companies with a low level of trade union membership. They are young companies, private service businesses located in big cities, usually downtown, with a small number of employees and with the owner working in the company. Their employees are young and well-educated and there is considerable demand for their skills (See Anders Kjellberg's studies of trade union organization).

The Overall Picture

The aggregate picture is one of a large number of small new media companies and some larger companies that have new media as a minor area of activity. The companies are gathered in clusters in the biggest cities, foremost in Stockholm, mainly in the downtown areas, where one third of the companies are to be found. 70 per cent of the ownership of these companies is in private hands. There is considerable optimism about future growth, 50–100 per cent growth a year is the companies' own estimate. The Internet and intranets dominate with over 80 per cent of the productions, but they probably have a smaller share in terms of turnover. Over half of the productions are advertising and company presentations. 80 per cent of the productions are commissions from customers and 80 per cent of these customers are private sector companies.

The major difficulties the companies see for their development are the shortage of qualified staff and of venture capital, and the lack of knowledge in the customer companies. A small segment of the survey shows that tax rules are seen as a major obstacle by 20 per cent of companies and labour law by 6 per cent. For 70 per cent of the companies labour law is no impediment at all. The same figure for tax rules is 55 per cent. In the running of their businesses, competence development and finance are perceived as major difficulties.

In 1998 we see examples of restructuring in this sector. It remains to be seen to what extent and in what time frame the sector will resolve its problems and overcome the impediments that our study has uncovered, as well as poor profitability, and which companies and networks will survive these problems.

People working in new media companies are highly-educated, half of them have university qualifications, often relating to computer studies. As on the labour market in general, 85 per cent of employees have permanent employment, but only a quarter of employees are women. Typical monthly salaries for different categories of employee range from SEK 17,000 to SEK 20,000, but salaries vary considerably.

Collective agreements are in effect in only 20 per cent of the companies. 90 per cent of Sweden's private sector company employees are covered by a collective agreements, so this figure is obviously substantially less in the new media industry. According to the companies'

management there are trade union members in 40 per cent of the companies. Here the new media sector deviates from the common 'Swedish workplace model' but their situation is probably similar to that of, for example, consulting, computer and advertising companies, all of which are expanding sectors of the future.

These and other findings from the study are all of central importance for the simple reason that hitherto no-one has had a picture of this sector and its companies based on factual data. Which results are particularly surprising is of course, very much a function of one's personal view of this sector.

Do we see a new labour relations model?

The following factors suggest that this sector is part of a new labour market trend which breaks with the traditional 'Swedish model':

- As many as 30 per cent of the companies have no written contracts of employment.
- Only 20 per cent of the companies have entered into a collective agreement.
- Unionization level is low.

But on the other hand this sector is similar to the traditional model in the following ways:

- As many as 85 per cent of employees have permanent employment, and not limited-period employment as one may have expected.
- As in, for example, the computer and consulting sectors, only a quarter of employees are women, which may come as a surprise when one has seen a number of companies where at least half the employees are women.

Only 6 per cent of companies, according to a smaller segment of the survey, see labour law as a major problem; there appears to be little difficulty in following the current statutory provisions here. This may perhaps be explained by the fact that this is a sector in a period of growth, with confidence in the future, and that employees are well-educated and are well-established in a strong segment of the labour market. Where labour law is considered a problem, it is probably in sectors that are in a different economic phase and with employees in a different labour market and life situation. Also, in the new media industry an explanation

might be the eagerness of young employees to keep a job in this type of company, creating a tendency to accept tough working conditions.

Important tasks for the companies and for political action include advanced education and the availability of venture capital

The lasting impression, apart from the need for a better supply of capital, is the need for better education, both on a broad basis in society, and in-depth education for the customers in companies and public administration and, above all, advanced and in-depth training in the different specializations and occupations that, working together, produce advanced interactive and multimedia solutions.

The considerable confidence in future expansion the companies express in the survey may, by and large, be justified in the long term. But some individual companies will certainly run into difficulties, and the sector as a whole will have periods of consolidation and self-examination. This is what may be expected of a young and entrepreneurial sector.

The Design of the Study

Our lists of new media and Internet companies, i.e., our database, contained a total of about 750 companies. About half of them came from the Promise list of companies in this sector and the other half were taken from a list of Internet companies published by the journal *Dagens Industri* in the spring of 1997.

Promise (Producers of Interactive Media in Sweden) is a sectorial organization that is part of SINF (The Swedish Association of Industries). Promise is a non-profit body that seeks to affiliate 'producers of interactive media'. The products are CD-ROMs and diskettes or web pages for the Internet, intranets or extranets; that is to say a finished product for a customer or for the market. Our database does not include specialized subcontractors that work exclusively with, for example, film or sound, nor hardware suppliers, operators or service companies in the sector such as training institutes. Promise is seeking to affiliate companies that have such a 'producer operation' irrespective of whether it is a wholly independent company, a subsidiary or a division of a larger company. On this basis, Promise has produced lists of about 400

companies. These include, for example, the new media departments in advertising agencies and publishing houses, but not cases such as departments in newspapers. We have opted to apply the same limitations, but we have added some newspapers to the list.

This means that from the list of 500 'Internet companies' published by Dagens Industri, we have included 'producers' of the same kind as are included in the Promise list. The gross list was based on the Sunet list of Swedish Internet domains. Included were companies under the heading Internet under the main heading of companies in the computer sector. This was supplemented with the help of punkt.se's domain list and Dagens Industri also made its own contacts with companies they knew of. All these companies were telephoned, and all the companies contacted that provided additional details were published in a separate Internet supplement to the journal. The list was also made available through the Dagens Industri web site, where companies were also able to register themselves on-line, which some ten companies did. Our sample includes most companies that were listed under the headings of 'Consultants' and 'Content providers', and quite a number under the heading of 'Retailers of Internet services providers', and a few under 'Operators', 'Internet cafés', and 'Hardware Suppliers'. Our sample was made on the basis of the list's keywords and each company's product/service.

Future studies may of course review the definition of the sample and consider including specialized subcontractors and service companies for the sector, and departments in traditional media companies such as newspapers. Similarly, efforts should be made to systematically identify new media departments in consulting and ICT companies. This would be an important component in a follow-up.

We have combined a number of methods in order to obtain responses to the questionnaire. We have sent questionnaires by post, offered the chance to 'click' in electronic responses on the Promise Internet homepage, sent out questionnaires by e-mail and carried out telephone interviews. The study was done in the late spring and autumn of 1997. We started with the Promise list and continued with the Dagens Industri list. There may therefore be more Internet-oriented companies in the later interviews and more CD-ROM-oriented companies in the early interviews.

Our survey based on the Promise and Dagens Industri lists reveals that some companies do not actually belong to the category of 'producers of multimedia/interactive media'. Other companies on the list cannot be

found, and appear to have ceased operating. We estimate the number of companies in the database that were active as producers in the new media sector at the time of the study to be just over 600.

We have received a total of 302 responses to the questionnaire, an estimated response frequency of about 50 per cent. This may be considered a relatively high response rate in this new sector with its numerous small companies and one-man businesses and the large proportion of start-up companies. However, we have yet to examine how representative our responding companies are of the sector as a whole. No reliable and complete lists of companies are available. However, there is no particular reason to assume that we should have received a systematically distorted selection of respondents.

Because the time we had to find companies was limited, it is reasonable to assume that there were more new media companies in Sweden at the time of our study than the 600 odd we identified. This factor should be considered in estimating the total size of this sector. New companies have been set up since this study and some old companies have closed down. And companies will certainly have merged and been bought up. This is an industry in a phase of transformation.

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Tables

Table 1. Turnover and estimated turnover per year (MSEK).

Year	New media	Total
1996	3.2	70.6
1997	6.3	89.4
1998	11.4	111.1
n	185	198

Table 2. No. of new media productions.

Year	Mean	Average	n
1996	10	18.4	223
1997	15	28	267

Table 3. Turnover, exclusively Internet producers (MSEK).

Annual turnover	New media	Total
Only Internet	2.3	5.3
More/other types of products	3.8	107.4
n	176	183

Table 4. Number of employees, present and estimated.

Year	Mean	Average
1996	6	17
1997	7	20
1998	10	27
n=270		

Table 5. Geographic spread of companies.

Comment: Geographic location based on postal code.

Location	Per cent
Central Stockholm	33
Greater Stockholm	14
Göteborg	9
Malmö/Lund	8
Linköping	3.5
Umeå	3.2
Uppsala	2.5
Västerås	1.8
Luleå	1
Rest of country	24
Total	100

n=283

Table 6. Type of media/product.

Comment: The figures are based on the total number of companies surveyed.

Media	Per cent
Internet	71.7
CD-ROM	16.1
Intranet	7.4
Diskette	4.8
Total	100

n=208

Table 7. Type of new media production (percentage of total number of productions).

Type of production	Per cent
Advertising	26.6
Company presentations	26.1
Education	25.7
Other info	9.2
Entertainment	5.0
Culture	3.2
Media productions	1.6
Other	2.6
Total	100

n=181

Table 8. Type of commission (percentage of companies).

Type	Per cent
Multimedia commission only	54.8
Broader commissions	45.2
Total	100

n=281

Table 9. Type of broader commission (percentage of companies).

Comment: Only companies which stated that their productions are part of broader commissions. A company may give several alternative areas of activity.

Type of commissions	Per cent of companies
Information analysis	70.2
Training	46.4
Market analysis	44.0
Organizational development	40.5
Business development	39.3
Graphic profile	33.3
Exhibitions	17.9
Other	20.2

n=84

Table 10 . Number of types of broader commissions (percentage of companies).

Comment: Only companies which stated that their productions are part of broader commissions. A company may have several different types of commission.

No.	Per cent
1	22.6
2	25.0
3	11.9
4	15.5
> 4	25.0

n=84 100

Table 11. Other substantial activities (percentage of companies).

Response alternatives	Yes	No	Total	n
Per cent	55.7	44.3	100	296

Table 12. Type of other substantial activities.

Comment: Only companies with other substantial activities. A company may give several alternative areas of activity.

Type	Per cent
ICT consulting	37.4
Software production	20.4
Advertising	18.4
Video/film/etc	18.4
Graphic design	17.7
Management consulting	17.0
Publishing	9.5
Graphic industry	7.5
Other	38.1

n=147

Table 13. Number of other types of activities.

Comment: Only companies with other substantial activities. A company may give several alternative areas of activity.

Number	Per cent
1	61.2
2	16.3
3	9.5
> 3	12.9
Total	100

n=147

Table 14. Companies that collaborate with other companies in the sector.

Alternatives	Yes	No	Total	n
Per cent	75.6	24.4	100	299

Table 15. Type of partner (percentage of companies).

Comment: Only companies that report collaboration with other companies. A company may report collaboration with several companies in different areas of activity.

Type	Per cent
Advertising	52.7
Video/film/AV	41
Software production	35
Graphic design	29.1
Publishing	21.2
Graphic industry	20.2
Other	39.4

n=203

Table 16. Number of partners.

Comment: Only companies that report collaboration with other companies.

Number	Per cent
1	39.9
2	19.7
3	17.2
4	14.3
> 4	7.9
Total	100

n=203

Table 17. The company is a subsidiary (percentage of companies).

Response alternatives	Yes	No	Total	n
Per cent	18	82	100	226

Table 18. Parent company's core business (percentage of parent companies).

Comment: Only companies which are subsidiaries.

Type	Per cent
Video/film	14.6
Publishing	12.2
Advertising	9.8
Software production	9.8
Other	53.7
Total	100

n=41

Table 19. Ownership.

Type of owner	Per cent
Private persons	67,7
Other companies	20,4
Institutions	9,2
Venture capital	2,7

n=148

Table 20. Plan to bring in new owners next year.

New owners	Per cent
No	71.4
Yes	28.6
Total	100

n=287

Table 21. Type of production (percentage of number of productions).

Type	Per cent
Ready-made products for market	21
Commissions	79
Total	100

n=279

Table 22. Spread of commissions by clients from different sectors.

Sector	Per cent
Public sector	11.4
Private sector	79.2
Non-profit organizations etc.	9.4
Total	100

n=197

Table 23. Client size (percentage of clients).

No. of employees	Per cent
< 100	45.1
100-500	18.6
> 500	36.38
Total	100

n=244

Table 24. Export sales (percentage of companies).

Time	Per cent	n
Today	22	268
Next year	40	271

Table 25. Companies with offices abroad (percentage of companies).

Time	Yes	No	Total	n
Have offices abroad	8	92	100	249
Plan to have offices abroad	25	75	100	237

Table 26. Impediments to the development of the business (percentage of companies).

Factors	Major im- pediment	Some imped.	No im- pediment	Total	n
Lack of competent personnel	28.7	35.8	35.5	100	296
Customers' lack of knowledge	28	50.7	21.3	100	296
Venture capital	26.9	34	39.1	100	294
Infrastructure/telecom	18.9	36.4	44.7	100	291
Copyright law	16.4	27.6	56	100	293
Other media technology	13.3	36.1	50.5	100	285
Administration	13	29	58	100	293
Overestablishment of co.s	12.7	30.9	56.4	100	291

Table 27. Impediments to the development of the business (only some of companies.)

Comment: Only some of the companies surveyed were asked this more detailed question. See footnote 6.

Factors	Major im- pediment	Some imped.	No im- pediment	Total	n
Customers' lack of knowledge	2	25	73	100	114
Lack of competent personnel	4	30	66	100	114
Tax regulations	5	31	64	100	113
Lack of venture capital	6	26	68	100	113
Infrastructure	7	33	60	100	115
Overestablishment of co.s	15	36	49	100	115
Labour law	19	34	47	100	114
Other media technology	19	26	55	100	114
Copyright law	25	36	39	100	115
Administration	25	55	20	100	116
Other	1	4	95	100	88

Table 28. Problems in operating the business (percentage of companies).

Factors	Major problem	Some problem	No problem	Total	n
Labour law	16.2	12	71.8	100	284
Govt. agency contacts	16	15.7	68.3	100	287
Financing	15.9	26.2	57.9	100	290
Tax accounting	14.5	12.8	72.7	100	289
Financial accounting	14.2	13.5	72.3	100	289
Personnel administration	11.9	18.8	69.3	100	293
Human resources dev.	11.2	38.8	50	100	294

Table 29. Level of education (percentage of employees).

Level	Per cent
University education qual.	52
Begun university education	9
Vocational qual.	17.9
Upper-sec. qual.	21.1
Total	100

n=188

Table 30. Type of qualifications.

Type	Per cent
Computer studies	52
Advertising	13
Business studies	12
Multimedia	11
Design	5
Graphic studies	5
Photography	1.5
Other	0.5
Total	100

n=81

Table 31. Form of employment (percentage of personnel).

Response alternatives	Permanent	Limited period	Total	n
Per cent	85	15	100	274

Table 32. Employees by gender.

Category	Men	Women	Total	n
Per cent	74	26	100	263

Table 33. Companies that commission consultants (percentage of companies).

	Per cent	n
Current projects	68	277
Normal proportion	75	241

Table 34. Consultants as proportion of all personnel (per cent).

	Mean	Average	n
Current projects	7.7	13	262
Normal proportion	10	15.7	228

Table 35. Pay (percentage of each group, SEK).

	Project leaders	Pro-grammers	Other. prod. staff	Marketing personnel	Admin. staff
< 15,000	5.5	5	16.1	7.1	21.8
15,000–18,000	29.7	38.9	54	29.6	54.6
19,000–22,000	29.1	33.1	22.6	26.5	19.1
23,000–26,000	19.2	17.3	5.1	19.4	1.8
> 27,000	16.5	5.8	2.2	17.4	2.7
Total	100	100	100	100	100
n	182	139	137	98	110

Table 36. Approximate estimates of average monthly salaries (SEK).

Category of employee	Estimated monthly salary	n
Project leader	21,071	182
Marketing personnel	21,031	98
Programmers	19,748	139
Other production staff	17,526	137
Administrative staff	16,986	110

Table 37. Overtime compensation paid (percentage of companies).

Response alternatives	Yes	No	Total	n
Per cent	32.5	67.5	100	277

Table 38. Incentive systems in addition to salaries (percentage of companies).

Form of incentive	None	Manage-ment	Manag. & some emp.	All	Total	n
Profit sharing	73.3	6.8	4.4	15.5	100	251
Convertible stock options	85.2	3	5.5	6.4	100	236

Table 39. Written employment contracts (percentage of companies).

For different employee groups	Yes, all	Yes, some	No	Total	n
Permanent employment	63.7	6.6	29.7	100	273
Limited-period employment	63.1	6.5	30.4	100	168

Table 40. Collective agreements (percentage of companies).

Response alternatives	Yes	No	Total	n
Per cent	18.5	81.5	100	286

Table 41. Companies with known trade union member(s) (percentage of companies).

Response alternatives	Yes	No	Total	n
Per cent	41.7	58.3	100	235

Table 42. Labour law disputes (percentage of companies).

Response alternatives	Yes	No	Total	n
Per cent	6.6	93.4	100	289

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