

W O R K I N G P A P E R

IT Services in Denmark

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*The Open Labour Market
Working Paper 13:2000*

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The Danish National Institute of Social Research

The Study

The Danish National Institute of Social Research carries out a program on the Open Labour Market, to be concluded in 2002. The research program is initiated by the Ministry of Social Affairs.

The study presented in this paper is part of the European project: New forms of Employment and Working Time in the Service Economy/NESY. The overall objective of the project is to analyse the emergence and the effects of new forms of employment, work organisation and working time patterns in the service sector. The focus of research in the NESY project is to identify the driving forces for the emergence and diffusion of new employment and working time forms, which are attributable to particular features of the service sector and service activities. The project covers the following EU-countries: Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Portugal, Sweden and United Kingdom.

The NESY-project is financed by the TSER Programme of the European Commission, DG XII. The project is coordinated by the Institut Arbeit und Technik, Gelsenkirchen, Germany. The Danish part of the project is co-financed by the Danish Research Councils (welfare research) under the research programme: "Human Resources in Working Life". The Danish research team consists of Ivan Thaulow, Joachim L. Boll and Agi Csonka., from the Danish National Institute of Social Research, the unit of the Open Labour Market.

In all the countries case studies of firms in selected service industries and activities will be used to identify the basic industry and activity-specific reasons for the emergence of certain forms of work organisation and working time arrangements. In Denmark case studies have been carried out within home care, IT and retail.

This paper presents the results of the case study within the IT sector.

Contents

Introduction	5
1. The Danish IT sector.....	5
1.1. The IT service companies	5
1.2. Employment.....	7
1.3. Industrial relations	8
1.4. Work organisation and working time	8
1.4.1. Deficit of labour.....	8
1.4.2. Work organisation	9
1.5. Summary	10
2. The Case Studies.....	11
2.1. Methodology.....	11
2.2. The organisations visited	11
2.2.1. Datacon.....	11
2.2.2. Webfirm.....	13
2.2.3. Globe.....	15
2.3. Summary: characteristics of IT service companies	18
3. Analysis: Cutting across the cases	19
3.1. Managerial challenges resulting from the output: the service provided.....	19
3.2. Managerial challenges resulting from the input: human and organisational Resources	20
3.2.1. Retainment and recruitment.....	20
3.2.2. Work organisation and working time	22
4. Conclusions	25
4.1. Any major changes	25
4.2. Service concepts	25
4.3. Factors driving long working hours	26
References	29
Working papers published by the Danish National Institute of Social Research.	31

Introduction

All over the world, the IT- sector is one of the fastest growing industries. The sector is often stated to represent the future, in terms of business strategy as well as in terms of organisational structures and working conditions. The myths are numerous: The companies of the new economy are by nature non hierarchic the work is characterised by high degrees of autonomy, professional challenges and sky high salaries. In return the employees work 80 hours a week and get burnt out by before they reach their thirties. However, facts on the working conditions in this sector are scarce. What is actually “new” about this “new economy”, how are the human resources utilised and managed? And what are the consequences in terms of working conditions and working hours of the IT-employees?

This paper deals with some of these questions. In part 1, an overall view of the Danish IT-sector is outlined, both in terms of the type of companies within the sector and in terms of the working arrangements and working conditions of the employees. In part 2 three cases are introduced, representing three different types of IT- service consultants. Part 3 comprises an analysis of the three case studies on selected themes.

1. The Danish IT sector

1.1. The IT service companies

This section deals with the service and consultancy part of the IT sector as identified by the NACE group 72. As it can be seen in table 1, the IT sector in Denmark is showing solid growth in terms of turnover as well as employment and number of companies.

Table 1: Development of the IT service sector in Denmark 1994-1997.

	Year			
	1994	1995	1996	1997
Number of companies	6,344	6,734	6,925	7,658
Turnover (dkk mill.)	16,218	19,231	17,734	23,629
Number of employees	20,318	21,515	23,639	26,010
Full time employees	16,349	17,193	18,546	20,163
Sum of wages (dkk mill.)	5,556	5,927	6,561	7,394

Source: DS: Statistiske efterretninger, generel erhvervsstatistik 1997:15, 1999:14.

Considering the size of the firms in the IT sector (table 2), it is obvious that most of them are small, being one man companies or having only a few employees. But the majority of jobs are nonetheless concentrated in the large companies. Even though less than 100 companies have more than 50 employees, they still account for more than 50 per cent of the employment. The sector is therefore highly concentrated and highly fragmented at the same time, adding another piece of evidence to the general impression of the heterogeneity of the sector.

The statistics on the IT-sector in Denmark may not be completely adequate. First of all, some IT companies may be classified within other groups, like engineers or management consultancies. Second, the growing multimedia industry is by nature hard to classify. Multimedia-technology integrates text, graphics, pictures, sound and video and thus involves sectors such as advertising, television, printed media as well as both software and hardware computing. One way of distinguishing between the IT-sector and the multimedia is that the IT-sector fo-

cuses on the computer as a means of information processing, while multimedia focuses on the computer as a means of communication. (Christensen, 1997)

Multimedia-products are used in connection with training, firm presentations, documentation, manuals etc. - as well as within the entertainment industry in terms of computer games, interactive videos etc. It is a fast growing and fast developing sector, containing several interesting themes and problems.

Some multimedia companies are probably included in the NACE K72 category. Yet, some may be located in other categories once again exposing the inadequacy of the available statistics on the IT-sector.

Table 2: Size of companies in the IT service sector in Denmark 1997.

	Number of employees							Total
	1	2-4	5-9	10-19	20-49	50-99	100+	
No. Of companies	2,448	655	312	191	148	47	47	3,848
No. Of employees	2,448	1,721	2,053	2,632	4,514	3,213	11,562	28,257
Percent of employment	9	6	7	9	16	11	41	100

Source: DS: Statistiske efterretninger, generel erhvervsstatistik 1999:6.

The multimedia sector

As the sector is a relatively new phenomenon and moreover can be difficult to define, hardly any data exists on the size and characteristics of the multimedia sector.

The Danish IT Industry Association has, however, made a survey of companies marketing themselves as multimedia or Internet designers. The sector displays many of the characteristics of a new sector with strong growth.

Most of the companies in the survey are young, small startups, which have rather poor profit margins, but on the other hand they are anticipating very strong growth in the future, with typical expected annual growth of 50 per cent in employees as well as turnover. At the time of the survey (1998) 68 per cent of the companies had less than 10 employees. However, tradition shows that many of these startups do not have the management resources to cope with such growth, and therefore often runs into trouble. A consolidation into larger more professionally managed companies and the creation of larger "locomotive" companies is therefore seen as being crucial to the future success of the sector (IT brancheforeningen, 1999).

The companies in the multimedia sector - especially those doing web design - often find themselves in a difficult strategic position, pinched between advertising on the one side and computer consultancy, on the other side - sectors which are much more mature and well established.

The sector therefore has a bit of a "Klondike" characteristic, with great potential, but just as great or even greater risks. Hence, the employment potential of the sector must also - at least in the long term - be looked upon with some suspicion. There is, however, hardly any doubt that the functions performed by the sector - multimedia and web design - will remain important business areas. But the question is whether these functions in the years to come will be performed by the current myriad of small companies, by larger more concentrated "multime-

dia powerhouses" or be taken over by established advertising and computer consultancy companies. (Christensen, 1997).

1.2. Employment

The employment structure in the IT sector (table 3) differs considerably from the overall workforce. The IT sector is male dominated, has a large overweight of 25-39 years old, and has a relatively well educated high status work force.

Whereas women count for 45 per cent of the total number of people employed, only 26 per cent of the IT workforce are women. This is hardly surprising, but it is still a very large difference and it could be interesting to see whether there is a smaller difference among the young employees, or if the trend will continue.

The IT workers are also relatively young. Even though there are fewer employees under 25 working in IT, over half of the workforce is between 25 and 39 years old, compared to 35 per cent in the overall workforce. The reason for the relatively small number of very young workers could be that IT workers generally are well educated and therefore enters the workforce relatively late (This is especially so in Denmark where the average university graduate is well over 25).

There is also a larger portion of self employed in the IT sector than in the economy as a whole. This is, of course, a parallel to the large number of small companies described above.

Table 3: Employment structure in the IT service sector in Denmark 1997.

	IT sector		Total labour force	
	N	%	n	%
<i>Sex</i>				
Male	20,868	74	1,605,959	55
Female	7,389	26	1,328,645	45
Total	28,257	100,0	2,934,604	100,0
<i>Age</i>				
Under 25	2,674	10	509,286	17
25 – 39	15,129	54	1,028,319	35
40 – 59	10,017	35	1,218,081	42
60 and over	437	2	178,918	6
Total	28,257	100,0	2,934,604	100,0
<i>Position</i>				
Employee	25,591	91	2,724,991	93
Self employed ¹⁾	2,666	9	209,613	7
Total	28,257	100,0	2,934,604	100,0
<i>Status</i> ²⁾				
Top manager	1,044	4	70,596	3
Highest level	8,766	34	306,323	11
Medium level	7,375	29	385,311	14
Basic level	4,433	17	1,162,848	43
Other, n.a.	3,973	16	799,913	29
Total	25,591	100,0	2,724,991	100,0

1) Including Spouses

2) Employees Only

Source: DS: Statistiske efterretninger, generel erhvervsstatistik 1999:6.

Finally, we see that the workforce in IT has a higher status than average. The status variable is made up mainly by the educational requirement for the job. 38 per cent of the work force in IT falls into the brackets "Top manager" or "Highest Level" which generally implies a masters level university degree. This compares to just 14 percent of the overall workforce.

1.3. Industrial Relations

Denmark does not have an employment code with a systematic set of rules concerning central issues such as wage, working hours and dismissals. The Working Environment Act contains the "11 – hours rule" stating that employees must have at least 11 hours rest between work shifts. The Equal Opportunity Act regulates the paternal leave, and the Salaried Employees Act regulates dismissals, terms of notice etc. for salaried employees. Thus, the employment regulation is to a large extent left to the social partners and collective agreements.

However, collective agreements do not have any significant influence in the IT-sector. Most of the small companies are not unionised and even big established companies, are not organised and do not have collective agreements.

The most important trade unions are PROSA (The Association of Computer Professionals), having approximately 9.000 members and HK (The Union for white Collar Workers in Retail and Office), which has a department for IT-workers with appr. 12.500 members. The Society of Danish Engineers (Ingeniørforbundet i Danmark) also organises some IT-workers, but some engineers are organised in PROSA .

The employers are primarily organised in DH&S (Danish Commerce & Services) And DI (Danish Industry). These organisations negotiate the (few) collective agreements within the sector.

There may be few employers willing to enter into collective agreements, but there seems to be a certain inclination to organize in industry associations. Thus there are no less than four IT-associations, all claiming to pursue the interests of the IT-sector.

The Danish IT Industry Association (IT-brancheforeningen) is the old and established organization within this field, organising some of the biggest and most influential IT companies. The Multimedia-industry (Multimediabranken) is a relatively new association aiming at improving the conditions of the new multimedia-companies. It started in 1996 and in 1998 the association initiated a closer co-operation with the IT Industry Association in order to coordinate their activities. The two associations now share office facilities and staff. Both DH&S and DI have established independent IT-associations for their IT-members. The DH&S has established The Association of Information Technology and Communication (ITK), and DI has established the Association for Information Technology, Telecommunication, Electronics and Communication (ITEK).

1.4. Work organisation and working time

1.4.1. Deficit of labour

From time to time the issue of a scarcity of qualified IT-labour pops up in the public sphere.

Today, 10.000 IT-employees are needed, and it is estimated that within the next four years a lack of 42.000 employees will appear. It is expected that the need for highly educated IT-experts will amount to a third of the 45.000 employees needed (DTI, 1998). Apparently the industry solves this problem by importing foreign labour, and by outsourcing some of the IT-related tasks to foreign companies. (Børsens Nyhedsmagasin, 1999; DH&S, 1999).

Though the debate on the lack of professionals does contain a lot of rhetoric, the level of wages may indicate that there is some truth in the predictions. IT-workers have had the highest increase in life incomes of all groups during the 80's and 90's. Especially for the high-skilled employees, the wages are high, Salaries of DKK 50-60.000, five times the salary of a sales assistants, are not uncommon. (Lind, 1999). As is the case in other sectors men earn more than women and while men earn more the older they get, women's wages fall as they grow older. (PROSA, 1998).

Also the unemployment rate among IT-workers confirms the lack of qualified labour. The unemployment rate is now less than 5 percent, yet, the unemployment is rather unevenly distributed, dependent on educational level. Thus highly educated IT-workers do not have any unemployment at all, while self taught or low educated IT-workers are the ones bearing the risk of unemployment. Furthermore the unemployment among women is above average. (PROSA, 1997).

1.4.2. Work organisation and working time

PROSA has conducted a survey among their members in order to get a general view of the working environment in the IT-sector, (here defined in terms of employees working with IT-tasks in both IT-companies and non IT-companies). 726 questionnaires were sent to working members of PROSA of which 338 (47 %) answered the questionnaire.

This survey confirms that working time actually is a big issue in the IT-sector. More than half of the employees (51,4 %) work more than full time, which in Denmark is 37 hours per week. At the same time, those who work overtime reports having a poor mental health, and problems reconciling work and family. (PROSA blad, 6/7, 1998).

A decisive factor may be the type of work tasks. One type of task is connected to the operation, supervision and maintenance of hardware. Another type of task is programming, and development of programmes and systems. Third there are tasks like planning and consultancy. The working conditions are quite different within these three types of IT-tasks. For instance, one of the factors pushing forward overtime seems to be the direct contact with costumers. (PROSA blad, 6/7 1998). Employees working with programming and development are apparently much more likely to work more than full time, than are employees working with maintenance. (According to a consultant from PROSA).

Børsens Nyhedsmagasin, a Danish weekly business magazine surveyed 139 IT employees in 6 major IT companies. These IT employees work 47 hours a week on average. In the questionnaire are questions on how the employees actually prioritise between work, family, friends, leisure, et cetera, and how they would prioritise, if they had the possibility to choose freely. 68 percent report that their job has highest priority, while 24 percent state their family as the highest priority. When it comes to the desired priorities, 17 per cent would give work first priority, while 62 per cent would give family the highest priority. ((Børsens Nyhedsmagasin, 2000).

The respondents were also asked why they work more than 37 hours a week. 88 percent answer that "the work requires it", while 58 per cent answer "because I want to". 24 per cent answer that "I feel so much a part of the company, that I actually work for myself". Only 17 per cent report that they work overtime because it would be appreciated by the company, and 10 percent work overtime to impress the employer. About 10 per cent work overtime because they do not have families or spouses et cetera. (NB: The respondents could choose more than one answer). All in all this survey (which is not representative) indicates, that working overtime is the result of a dedication to the work, but at the same time to a large extent the choice of the employee themselves.

When asked why they work in the IT business, the majority of the respondents give reasons like "I work with what I want most" (82 percent), "I learn a lot" (81 per cent), "my job belongs to the future" (61 percent), "I am amongst pioneers" (64 percent), but also "I earn a lot" (52 percent).

When it comes to the disadvantages of the job, the answers all indicate, that the main problem is that the employees have too little leisure time.

1.5. Summary

Basically the IT-sector is characterised by being quite heterogeneous. It consists of giant, global, established companies with thousands of employees and small new "basement-companies" with no or a few employees. The educational level is quite high, the typical IT employees are young men.

One may expect that the working conditions in a small, new multimedia-firm are quite different from the working conditions in a big established IT-firm. A director of a multimedia-firm describes the typical multimedia-business as "a bunch of longhaired, pony-tailed young men, who turn their hobby into business". They do not consider themselves as "employers" and the fact that having employees involves reflections on working conditions and work organisation seems to come as a surprise. (From telephone interview).

In the "traditional" IT-sector one will find these small "anarchistic" companies as well, but along with big established multinational companies.

The few surveys among IT employees indicate, that they are dedicated to their job, and that they regard themselves as lucky, being part of "the future", or "the new economy". Hypothetically they may want to prioritise differently, and they may wish for more leisure time, but in real life, work comes first.

2. The Case studies

The picture of the IT-sector drawn up in part 1 certainly leaves the impression that the IT-sector certainly is an “new”, fast changing service industry facing new managerial challenges. As for the employment and the working conditions in the sector, the main problems seem to be deficit of labour and – maybe as a consequence of this – stressful work and long working hours. The case studies will focus on some of these issues.

Thus, the case studies will address the following questions:

What characterises the service concepts in the IT-sector?

What are the main managerial challenges in terms of personnel management facing the IT-companies?

What are the determinants of work organisation and the (long) working hours?

2.1. Methodology

Three companies have been chosen as cases, one small, one medium sized and one big company. All three are IT service consultancies, but they represent three different types of service. Datacon (the small firm) works mostly out house, that is, the consultants are most of the time posted at the company of the client. Webfirm is a representative of the new type of multimedia business, and Globe represents the big established kind of company.

Interviews were conducted with HR managers, line managers and employees (except from Datacon, where only the owner was interviewed). The interviews lasted about 1-2 hours each. The interviews were open interviews, based on an interview guide. In addition different written materials about the companies are used.

2.2. The organisations visited

2.2.1. Datacon

Datacon (the name of the company has been altered) is a small software company offering development of software solutions and consulting. Two men founded the company 5 years ago. One of them is still co-owner of the company, while the other one now works as a consultant in the company. The present director (the respondent, CL) started working in the firm two years ago, and a year ago he became director and co-owner.

CL is 31 years old, and has already had two other companies, which he has sold with a considerable profit. He is self-taught, with no formal education, and no prior knowledge of the IT-sector.

The company has specialised in developing software solutions "starting from scratch", and strategic consulting, and project management

The company primarily has big international clients and Datacon collaborates with several bigger IT-companies. Sometimes Datacon works as a supplier to the bigger IT-companies, or it takes over tasks from the bigger companies. Annual turnover is about DDK 7.3 million.

Personnel

2 years ago there were 5 consultants and no freelancers. Today there are 7 full time, permanently employed consultants and 10 self employed freelancers. All though the freelancers do work for Datacon most of the time, they do not want tenure. CL did offer them permanent jobs, but they prefer being freelancers. According to CL they make more money as freelancers, but most freelancers cave in after a couple of years, and become employees.

In addition, there are 3 administrative employees, one of them having the title of personnel manager.

All the consultants - both the permanent staff and the self employed - are men in their late twenties and early thirties. They have all been working in the IT-sector for at least 9 years, which is considered high seniority in this business. CL emphasises the long experience of the employees as a major competitive advantage of the company.

Most of the consultants are computer scientists, engineers, etc., though several of them have not finished their formal education. According to CL formal education is of no significance. It is the experience within the IT-sector that counts.

Work organisation and work time

The consultants do not have their own offices in the company. They all work primarily out house at the clients' residence. Normally a consultant will be posted at the client for 3 –6 months. They all have the same type of task. Once a week the consultants meet at Datacon to share experiences, and to receive information from the director. Sometimes the consultants come by to do some work in the Datacon office, but the business concept as well as the office facilities are based on the out house principle. The allocation of resources is solely the responsibility of the director.

In the contract it says, that the working hours are 37 hours a week, (which is the normal working hours in Denmark). There is a bonus system for taking on extra tasks or for getting leads from the client. All overtime is paid for (DDK 450 an hour), but only if the client is willing to pay for overtime.

According to CL most of the employees work more than 37 hours a week. He stresses that the long working hours are the employees' own choice. One of the employees recently became a father, and he works 37 hours or less now. But since this is the only employee with a family, the long working hours are not really an issue.

HRM

The director is very aware, that the main asset of the company is the "brainware" of the consultants, and all personnel policies are aimed at nursing and satisfying the employees. He has monthly meetings with every employee in order to catch up on how they are doing, and to meet their needs and expectations. The personnel managers' primary task is to nurse the consultants. To motivate the employees the director sometimes organises small competitions: if a certain result is obtained within a month, all employees are rewarded with a three days luxury cruise etc.

The company has high moral standards when it comes to accepting clients. A consultant can refuse to perform a job, if he is not comfortable with the client on moral grounds. Thus, Data-con has rejected clients because they produce weapons or produce psychoactive drugs with a bad reputation or the like.

The professional development and training of the employees is embedded in the tasks. Every new client represents new challenges and "contributes to the CV of the employees".

Employment relations

The company is not a member of any employers association. The standard contract follows the rules of the law on salaried employees. The consultants are not organised (as far as CL knows). The pay is high, among the highest in the sector. CL emphasises that he wants the best and the most experienced employees, and that is why he has to pay such high wages.

2.2.2. Webfirm

Webfirm (the name of the company has been altered) is a global company providing Internet solutions and consulting. The company was founded in Sweden in 1995. It is a fast growing company, - from 3 employees in 1995 to 2.000 employees in 2000. Most of the expansion is obtained through merging and buying up. It now consists of 41 offices in 7 countries. The company has received several awards, and is often touted in the media as "the company of the future".

The Danish arm of Webfirm was founded in 1999, with the buying up of two Danish companies. The Danish Webfirm has expanded from 60 employees in 1999 to 200 employees in 2000.

Organisation

The global company is divided into "cells", which are smaller, relatively independent offices. In principle, each cell is able to provide all of Webfirms services, thus each cell is a fully equipped Webfirm in its own right. The cell construction is part of Webfirms strategy of "working globally, acting locally".

Each cell has a cell manager and a client development manager, the latter being responsible for resource allocation and customer relations. Each cell is in principle divided into four departments, each with a department manager:

- Strategy and business development
- Design and communication
- System development and hosting
- Usability

In addition, and across the cells, there are competence centres, representing some new strategic efforts.

In Denmark there are four cells, and a fifth is about to be established, all situated in Copenhagen. Each cell represents a customers segment. One cell handles branding customers, another handles clients within finance etc.

Personnel

All in all there are 247 employees in the Danish Webfirm, of these 191 are male and 56 are female.

In addition there are 9 freelancers, and three students (working free, but at the same time doing their thesis). 11 of the employees are part timers, the rest are full time, permanently employed. New forms of employment contracts is not really an issue in the company. They prefer the normal kind of full time employees. Freelancers are only used in emergency cases.

The interviews were all carried out in one cell, consisting of 71 employees, of these 50 are male, and 21 are female. The average age of the employees in the cell is 29 years.

The annual turnover in this cell is DDK 35.2 million.

The personnel represent a range of different job categories: art directors, graphic designers, system developers, communication experts, project managers etc. Thus, Webfirm is a melting pot of advertising experts, computer scientists, management consultants and social scientists.

Four persons were interviewed:

The Human Resource Manager

The Danish co-ordinating manager of Usability

A project manager

A senior system developer

Employment relations

Webfirm is not a member of any employers' organisation, and does not have any collective agreement. All employees have individual (standard) contracts.

Work organisation and working time

The work is organised in project teams. The client development manager is responsible for the initial contact with potential new customers. A project manager is assigned, and he or she then puts together a team, makes up a time schedule and budgets, etc. In principle, the project manager asks the department manager to allocate resources for the project, but in practice, the allocation is far more anarchic. Often it is personal contacts and networks that work as the ultimate resource allocation mechanism. Some respondents point out the inappropriateness of these procedures, and efforts are made in order to rationalise the resource allocation, and to make priorities clearer.

A standard formulation in the contract states, that the working hours are 37 hours a week, but that occasional overtime must be expected. Overtime is not paid for. However, it is common to work far more than 37 hours a week. The respondents all worked on average about 50 hours a week in "normal" periods, and much more just before a deadline.

All employees register their working time in a timesheet on the Intranet. It is registered whether it is customer hours or "other hours." There are no official rules, but the expectation is that 70 per cent of the working time is customer hours.

HRM

The human resource management of Webfirm is most of all embedded in the corporate culture. The office setting is an old large factory hall, with no separate offices or rooms, except

for one conference room for guests. There is a huge refrigerator with free soft drinks, and a basket for playing basketball on the wall. The motto of the company is "work hard, play hard". For those working late in the evening, the company offers free meals from take out restaurants near by. As for the "play hard" part, the company frequently throws parties with "crazy gags", or arranges leisure weekends for all employees.

Obviously, the company attempts to maintain a culture that promotes innovation and zest. The employees are encouraged to come forward with ideas and suggestions, and the preference for "craziness" is seen as paving the way to creativity.

However, the respondents stress, that the culture is completely different in some of the other cells. One of the cells is characterised as far more formal and "pin-striped", referring to the fact, that most of the employees in that cell are recruited from management consultancies.

The different cultures are probably partly due to the fact, that they used to be two different companies, now merged into Webfirm. And partly explained by the two cells having different customer segments. The visited cell has branding and advertising customers, while the more formal cell has customers within finance.

According to one of the respondents, the difference between the two cells is also reflected in the working time arrangements. Apparently, in the other cell, the employees do get paid over-time.

The global spirit of Webfirm, however, is the young, trendy style.

It is also characteristic, that there seem to be only a few rules and procedures for handling personnel. It is all played by ear, and with a basic principle of listening to the employees, and taking their ideas seriously.

2.2.3. *Globe*

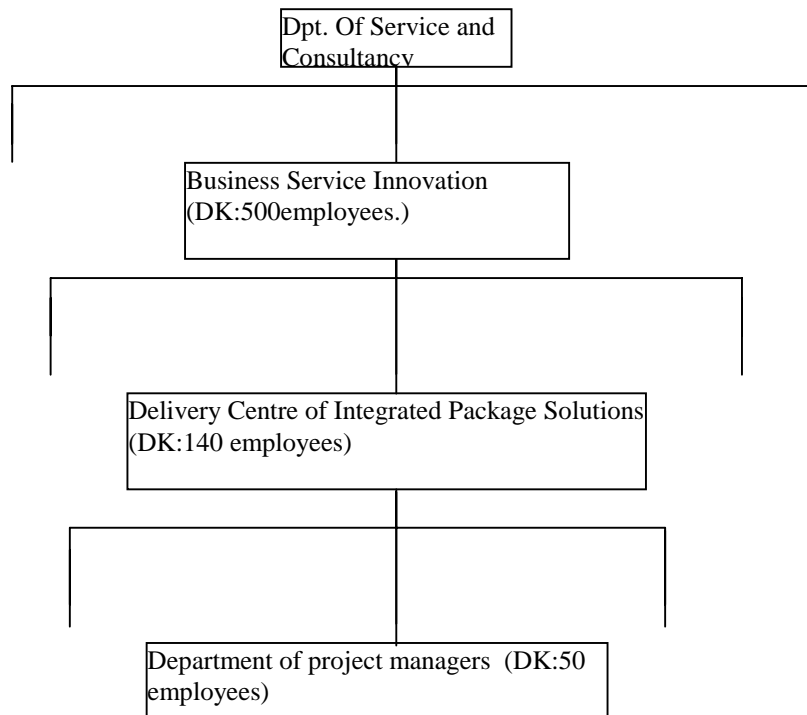
The Danish arm of Globe (the name of the company has been altered) is part of the Nordic region, and is not considered an independent unit. Thus the Personnel Manager of the Nordic unit may be situated in Norway, and the sales manager in Sweden etc. However, each department in each of the Nordic countries has a national manager, who refers to the Nordic manager.

Globe is a "truly global" company. All strategic decisions as well as personnel policies are developed at the global level (New York). Thus local and regional managers are "hosts" with legal responsibilities to the employees, but with no strategic or business responsibilities.

In some cases the regions are expected to adapt the global policies to the local environment. This goes for the policy of diversity management, which is open to local interpretation. In other cases, the New York management gives top down directives. This is obviously the case for important business strategies, but may also be "smaller" organisational matters, like for instance the "open office"-concept. Often the global level involves the regional and local level in the development of the policies beforehand, though.

Organisation

The interviews were mainly conducted within the Delivery Centre of Integrated Package Solutions, which is a part of the Danish Business Innovation Services (BIS) organisation, which again is part of the department for Service & Consultancy. Considering the hugeness of Globe, the Delivery Centre of Integrated Package Solutions will be referred to as the unit of analysis, in the following.



Personnel

In the Danish Globe there are about 3.200 employees, of these about 25 percent are women. Among the managers about 17 percent are women. The average age is about 35 years. 35 percent of the employees have a higher education, while the rest are either internally trained or from business schools, technicians etc.

No major changes have occurred as regards forms of employment. The company still prefers "normal employment contracts" and only when absolutely necessary, are freelancers taken in.

In the Danish BIS there are about 500 employees. In the Delivery Centre of Integrated Package Solutions there are 140 employees, and in the project managers group there are about 50 employees.

The Delivery Centre of Integrated Package Solutions delivers software products and software solutions. The software products are adapted to the needs of the clients, but the actual development of software is centralised at the global level.

The following persons were interviewed:

The Delivery Centre Manager of Integrated Package Solutions

The Danish Human Resource Manager

Two senior Project managers
A Technical Architect
A junior project manager

Employment Relations

Globe is member of Danish Industry, and follows the general collective agreement of Danish Industry. This means that the working time is 37 hours a week, and that the employees are entitled to children care days, etc.

In addition to this general agreement, each employee has individual contracts regulating amongst other things working hours. The regulation of pay and working hours differs from job category to job category. Thus the professionals are not paid overtime, while some of the technicians, who must be available for customers, do get paid overtime.

HRM

Globe has a range of personnel policies to deal with practically every kind of situation. The company is known to emphasise training and developing the employees, as well as providing a secure and considerate working environment. There are extensive training programmes for different types of job categories, and yearly employee conferences where the manager and the employee agree on an individual training programme

Traditionally, Globe has recruited young, inexperienced trainees, and then provided the necessary education and training. This has been the main recruitment strategy for many years. Within the last 2 – 3 years Globe has changed this recruitment strategy, in that they increasingly practice “experienced hire”, that is taking in experienced and highly skilled employees from the market.

Work organisation and working time

In each centre there is a Resource Deployment Manager (RDM) and in each department of the centre, there is a Personnel Deployment Manager (PDM). The RDM allocates personnel for the projects across the centre, while the PDM is the actual personnel manager of the department. The RDM is a fairly new organisational construction, established in order to optimise the utilisation of human resources. Thus, the RDM has the overall responsibility of allocation across the organisational unit, while the PDM has the personnel responsibilities within the sub units.

The project managers are placed in such a sub unit in the Delivery Centre of package solutions. They have recently been united - earlier they were placed in different industry groups etc.

There are four levels of project managers:
Executive project manager
Senior project manager
Advising project manager
Junior project manager

In order to rise to the next level, the project manager has to engage in internal training as well as being able to manage more and more complex projects. Thus an executive project manager is able to manage huge projects involving up to 200 employees.

Both the project managers' pay, and the customers' costs differ according to which level, the project manager is on.

According to the collective agreement the working hours are 37 hours a week, but the actual working hours are far higher. The average working hours for the respondents are 50-55 hours a week. The employees register their working time in time sheets, divided into different categories. It is expected that 70 per cent of the working time is registered as customer hours.

2.3. Summary: characteristics of IT service companies

The case studies indicate that the IT sector is characterised by being a fast, and constantly changing, knowledge intensive, customer oriented and innovative sector.

A general term used by the respondents to describe the business is "speed". When entering into Webfirm the visitor is met by a poster saying: "Speed is god, time is the devil". To be the first and the fastest is indeed a competitive edge. In continuation of this, the respondents often state that the competition is tough. If you slow down, another firm is ready to take over market shares immediately. Several of the respondents mention that periods of absence, like for instance a maternity leave, makes it almost impossible to return to the IT business. And a remark like "if you do not like speed, you would not want to work in this business" is quite typical.

There is no doubt that the most important asset of the IT service company is the "brainware" of the employees. A high level of IT qualifications are indisputable. In addition the employees have to be service minded, dedicated to the task, and good at communicating - with customers as well as with colleagues within the company.

The needs and demands of the customers is a decisive factor in the organisation of the IT services. The high strung pace of the business is partly blamed on the customers pushing the consultants with unrealistic demands.

The general description of IT employees being primarily young men working long hours, certainly fits the case studies as well. It is noticeable though, that the long working hours is not a major issue to the employees. Most of the respondents emphasise that they do not mind working long hours, and that the flexibility and fun of the job counterbalances the long working hours.

In the following analysis these general characteristics will be further elaborated.

3. Analysis: Cutting across the cases

IT companies might be described in terms of being "professional service companies", characterised by: highly qualified individuals, idiosyncratic client services and subjective quality assessments. (Løwenthal, 1997).

Such a professional service provider will face certain managerial challenges, quite different from the ones facing a manufacturing company. One may distinguish between challenges resulting from the output (the service provided) and challenges resulting from the input (the human and organisational resources). The following analysis will take its point of departure in this distinction.

3.1. Managerial challenges resulting from the output: the service provided

The output of a professional service provider is characterised by being both intangible and incomprehensible and often there is an "information gap" between the provider and the client. This makes it difficult to assess the service quality in advance. In many cases the clients may have problems with assessing the service quality even after having received the "good". Are the problems with the new software, what we should expect, or due to inadequacy of the IT consultant? Would the problems be less if we had chosen another IT service company?

In terms of service quality, the more idiosyncratic and non standard the service required is, the more difficult it will be for the service provider to guarantee the service quality beforehand. The perceived quality will be quite dependent on the expectations of the client. Furthermore, the less clear the client is about what may be expected, the more difficult it is to deliver what is expected. (Løwenthal, 1997).

This problem is clearly well known to all three IT companies, though to different degrees dependent on the sort of output.

The production of Webfirm is extremely idiosyncratic and innovative. First of all the Internet is a new media, second, the production of web sites is a non standard, specialised product. Webfirm experiences the difficulties of estimating work processes and balancing customer expectations. Having their roots in advertising the Webfirmers do have the necessary pedagogical skills to sell ideas. But to give realistic accounts of time and budget plans is a skill less developed. The company is aware, though, that better planning and adjusting of clients' expectations is crucial in the future.

The production of Datacon is also quite innovative and non-standard. Yet, the employees work at the clients' location and often together with the clients own IT employees. Thus they work with peers, fully capable of understanding the product and the processes. The consultants at Datacon do not experience the information gap, to the same extent as Webfirm does. On the other hand the Datacon consultant is under extreme pressure from constantly being closely monitored by the clients' IT employees (who after all would not mind that much if the "expert" fails).

This is reflected in the recruitment practices of Datacon. Only experienced and extremely highly qualified applicants with a high degree of self-confidence are accepted. This, on the other hand, limits the pool of applicants considerably, and slows down the growth of the company.

The service product of Globe is to a certain extent standardised. The company delivers standard products partly adjusted to the needs of the client. However these are often very big and complicated solutions, which may be hard to estimate anyway. Nevertheless one gets the impression of a more operational and less inventive type of service. This probably makes it easier to adjust the expectations of the clients. No doubt Globe has the advantage of the client having a priori expectations about Globe as being solid and reliable.

At the same time Globe has many years of experience in negotiating with clients, and the company is very much aware of the pitfalls of clients wanting more. Globe has developed several tools of monitoring the process of the projects. For instance a quality improvement system, where project managers peer review projects in order to examine whether new expectations and promises have arisen en route.

Thus, even if the service product is intangible in all the case studies, there are differences in how intangible, and in the effects of the intangibility. These differences may be due to *the degree of innovation and idiosyncrasy of the service provided, the size of the information gap between provider and client, and the experience of planning and estimating tasks.*

3.2. Managerial challenges resulting from the input:

Human and organisational resources

3.2.1. Retainment and recruitment

As is the case in most knowledge intensive type of companies, the IT companies are very much aware, that they totally rely on the performance of their employees. The employees bring to the firm their expertise, their experience, their network of peer contacts etc. These strategic resources are critical to the success of the firm, but they are to a large extent owned and controlled by the employees themselves. As indicated in the description of the IT sector (chapter one) the IT employees are extremely dedicated to the work itself. Probably they are more dedicated to the task than to the workplace, certainly they are in high demand on the market. Thus a major managerial challenge is to maintain a balance between an optimal utilisation of the human resources and keeping the employees happy. In times of labour deficit, the challenge is even bigger.

Traditionally Globe has dealt with this challenge by taking in young and inexperienced employees and then training them internally. This way Globe has strengthened the loyalty of the employees as well as managed the actual development in competencies and qualifications. Thus it is far from uncommon that employees in Globe have worked there for decades, quite a few of them do not even have any formal education. A typical Globe-employee is characterised as being "loyal, always prepared to walk an extra mile for the company". At the same time, applicants used to find (and still do find) Globe attractive because of the extensive training and the varied career ladders and possibilities.

Yet, this policy is no longer as adequate as it once was. The fast pace of the business forces Globe to take in "employees from the market", that is experienced employees who already have a career. These employees do not possess the same kind of loyalty as those, who grew up in the company. And they are not necessarily attracted by the career possibilities within the company. At the same time core Globe employees are regularly tempted by offers from head-hunters. One of the respondents received 2 - 3 offers a week!

Thus, Globe faces the challenge of bridging between the "old type" of internally trained employees, who are used to certain benefits and incentives, and the "new" type of employees with a totally different approach, and different needs.

Webfirm faces the completely opposite type of challenge. Webfirm clearly goes for the new type of employee. The office setting, the Friday night parties, the weekends, all appeal to certain types of young, dynamic, trendy people, who want to be where the action is. At the same time Webfirm seem to be in a state where tighter organisational structures are called for. There seems to be a need for optimising the resource allocation, a need for more professional recruiting methods, and for more organised training activities. An economic controller has recently been hired to straighten out administrative procedures.

Thus Webfirm is indeed moving into a phase of organisational consolidation, which inevitably will lead to more bureaucratisation. The challenge of Webfirm is to culturally keep the innovative and creative environment, and at the same time organisationally to move on to a more "mature state".

All three companies face severe recruitment problems. They all get many applicants, but they also have to reject a great deal. The highly qualified applicants are hard to get hold of: "you have to be really quick to get the qualified applicants. It may be a question of hours before the competitors grab them" as one of the Human Resource Managers puts it.

According to the respondents, the recruitment problems are due to lack of qualifications and/or experience. But this is probably only one part of the story.

Thus, Webfirm may contribute to their recruitment problems by the very same features that attract so many (apparently unqualified) applicants: The young, trendy culture itself may limit the pool of applicants considerably. It is hard to picture a middle-aged family man, not to mention a working mother, fitting into this setting. In times of labour shortage, this rather one-sided cultural environment may be a short-sighted strategy, contributing to the problem of long working hours.

Another part of the recruitment problem may be strengthened by the fact, that neither Webfirm nor Datacon train their employees themselves. At least not when it comes to IT qualifications. Datacon is of course too small to engage in comprehensive training. But Webfirm should be able to provide substantial training - if not on a local level, then at least on a global level. But this kind of investment does not seem to be company policy. For instance, in the usability department of Webfirm the profile of the ideal candidate is a Masters in arts or humanities combined with exhaustive knowledge of the Internet. This is indeed a rare combination, but allegedly there is no time to engage in this type of training. In the long run, the recruitment problems would probably be less acute, had the company decided to provide the necessary Internet training of promising candidates.

Probably as an exception to the rule, Globe do provide extensive training in all levels. Yet, as mentioned earlier even Globe has begun to deviate from decades of company policy and is hiring-in the IT qualifications needed.

3.2.2. Work organisation and working time

All the respondents emphasise the work organisation as a major advantage of the job. The job is flexible, with a high degree of autonomy and continuous professional development. "It does not feel like work at all" as one of the respondents put it. No doubt, all of the respondents are deeply devoted to their job. They truly appreciate the liberty and autonomy of the job, and the many opportunities of learning and innovation. Most of them possess an awareness of belonging to the new economy, a feeling of "making history", which certainly seems to contribute to the job satisfaction.

They also all work far more than 37 hours a week. An average of 50 - 60 hours a week is far from uncommon. When asked about the long working hours, the employee respondents stress that they actually do not mind working a lot. They point out that the working hours in it self is not a problem. It is other types of pressure that account for the (few) disadvantages of the job, like the pressure of major responsibilities or not getting the right support from superiors or the lack of clear priorities from superiors. As one of the respondents put it: "I do not feel, that it is the working hours, that are important, rather it is how I utilise my time. Only if you do not get the support you need from your superiors, then you begin to think about all the hours you work, and how they do not respect you anyway".

The interesting part is that at the same time the *manager* respondents consider the long working hours to be an important issue that should be dealt with. Thus it is characteristic, that the manager of the employee cited above explicitly mentioned, that " he (the employee respondent) needs a break, because he has worked far too many hours for the last couple of years".

In one of the other companies, the manager respondent stated, that he has made an effort to bring down his own working hours, and that he constantly reminds his employees to "get a life". But it was his impression that he succeeded better in actually bringing down his working time, than did the employees.

Why would the employers be more worried about the working hours than the employees? Several explanations may apply.

One could be, that the employers may be aware of the political correctness of worrying about the working hours of the employees, especially when a researcher is asking. The working hours may not be as big an issue in everyday life, as the manager representatives indicate. But this is probably far from the only reason.

Employers may genuinely worry about their employees getting burnt-out. And then they tend to focus on working hours as a relatively simple and measurable tool. But to the employees the danger of getting burnt-out is a question of work organisation and support, rather than a question of how many hours they work. To them, dissatisfaction in the job is related to unclear lines of command, unclear priorities, counter directions and lack of support. To managers, these issues are far more complicated to deal with, and then it is easier to bring up "working hours" as the issue per se.

Well, if the employees do not mind the long working hours, is it not a problem, then?

It should be noted that the majority of the respondents are young men (and a few women) with no family. In those few cases, where the respondents did have children, they were men, who had wives being the main caretaker at home. Thus, they did underline the flexibility of the job, which made it possible to go home in the afternoon and take care of the children, and then work a couple of hours in the evening, when the children were asleep. But on the other hand they acknowledged that their wives have the main responsibility for taking care of the home and the children.

When talking with the young, unmarried respondents about the potential work family balance in the future, most of them are aware, that when having a family the priorities change, and they would have to work lesser hours. But the question of reconciling work and family is a hypothetical question, with no practical implications for most of the employees.

The fact that the IT service sector consists of young men, to whom the time bind of practical and emotional care of children remains quite theoretical, might indeed contribute to the long working hours in the business. As long as the employees themselves have no incentives to bring down the working time, then no change will probably occur. At the same time, women with family responsibilities may be prevented from seeking jobs in this business.

4. Conclusions

4.1 Any major changes?

It is indeed difficult to talk about major changes in a business characterised by being constantly changing. How can one identify "major changes" in a company that has increased its number of employees by 66.667 percent over a period of five years, as is the case of Web-firm?

In such cases it may be even more interesting to focus on what has *not* changed. Thus it is noticeable, that none of the case companies has engaged in applying new forms of employment. They do not seem interested in altering the traditional form of full time permanent staff. Freelancers are only used in emergency cases. The employment contracts seem quite "normal" as well as regards working time and working conditions.

It is also noticeable, that the giant within the business, Globe, has actually begun to adjust its recruitment policies in order to get the required qualifications faster. But so far this probably qualifies as a minor adjustment.

The question of major changes may be rephrased into *does the IT sector represent something new?*

Certainly one could state that the IT sector represents new forms of work organisation. The high degree of autonomy, the flat hierarchies, the professional development, the nursing of the employees, all these are certainly features of the "work organisation of the future". Yet, the fact that highly skilled professionals, such as IT consultants, enjoy high degrees of freedom in their jobs and do have challenging work tasks really has no news value. This goes for practically all types of professionals, journalists, engineers, and researchers for that matter. The flexible and autonomous type of work organisation goes with the high skilled, professional jobs.

What really differentiates the "new economy" from other professional service economies probably is not the work organisation or the organisational structures as such, but the *speed*. No doubt this is a fast economy. The pace as regards innovation, merging, organisational development, recruitment etc is beyond imagination. Whether the speed derives from the competition, the fast pace of product innovation, the customers' demands or the culture is hard to say. Probably it is a mix of all these factors.

Certainly speed itself puts strong pressures on the working conditions and the working hours. But basically, the managerial challenges in the IT-sector do not differ much from those in other knowledge intensive and innovative businesses.

4.2. Service concepts

The case studies indicate, that the service concept within IT services consists of (at least) four components: The organisation of the service provided, the nature of the customer segment, the degree of interaction with the customer and the size of the information gap.

The managerial challenges, the work organisation and maybe also working time patterns will probably differ according to different compositions of these four components.

The service provided may be based on primarily *project organisation* or *primarily posting of consultants*. The latter means, that the consultant to a large extent works on the working conditions of the client. If the employees of the client all leave at four o'clock, the consultant may be inclined to do so as well. Furthermore the posting type of organisation makes it easier to monitor working time, especially when overtime has to be paid for by the client. As for the project based organisation it is more complicated, as it involves several persons across departments and with different educational backgrounds, and interdependent work processes. Thus, the project organisation is much harder to monitor, and the high degree of interdependence gives rise to both potential wasted time and overtime.

Another component of the service concept is the *nature of the customer segment*. The culture of the customer segment is to a certain extent mirrored in the culture of the service provider, as is the case with the different cells in Webfirm. Thus part of the service concept is the ability to read the culture of the customer, and not solely the business needs.

A third component may be the *degree of interaction with the customer*. Some types of services are characterised by an intensive interaction with the customer in the phase of defining the project, while after the contract has been signed there is practically no interaction before the project has finished. In other cases the interaction with the client goes on in all phases of the project. The degree of interaction is probably higher with innovative and idiosyncratic services than with more standardised services. A general rule seem to be: the more interaction with the client, the greater the risk of changing expectations, new demands and other expansions and complications of the project.

Finally, the *size of the information gap* is a component of the service concept. A large information gap requires that the service providers possess extensive pedagogical skills, not only in order to sell ideas, but just as much in order to adjust and specify the expectations about the service quality. If the information gap is small, then it is easier to agree on the quality of the service provided.

4.3. Factors driving long working hours

Since all the respondents in all three companies work a lot, one can hardly claim, that a certain service concept or a certain work organisation enhances overtime more than another type. Whether it is a small company or a big one, whether the service provided is idiosyncratic or not, whether the work organisation is project based or not, the working time remains about the same – that is about 50 hours a week.

Nevertheless, the interviews do indicate that certain features may contribute to making working time *less controllable*.

Probably the most effective means for controlling working hours is having children, AND at the same time to be the main caretaker at home. In general women work far less hours than men do. In fact the ones working the most, are highly educated fathers with small children and exciting jobs. (Csonka, 2000) The fact that the IT sector mainly consists of highly educated

men with exciting jobs undoubtedly is a driving force behind the long working hours in the sector. This is indeed a vicious circle. Women with caretaker responsibilities are prevented from working in the IT sector, and as long as there are so few women with children in the IT services, there are no incentives to bring the working time down.

The recruitment problem may also contribute to the long working hours. There is simply more work to be done, than employees to do it!

However, the case studies do indicate, that some internal organisational features may influence the long working hours as well.

Working on a project base, instead of being posted at the client all the time (or most of the time) seems to have some influence on the working time. Those placed at the clients are more likely to follow the working hours of the client. Overtime has to be agreed on by the client, who has to pay a considerable overtime fee. When working project based the working time seem more uncontrollable. More people are involved, more processes have to be co-ordinated etc.

The "estimating and planning ability" also seems crucial to the working time. The better the company is at estimating the time requirements of each task, the less overtime is necessary. Unclear resource allocation and lines of command may very well push the working time up as well, since a lot of resources are spent discussing who has the right to do what, when etc. In this context the type of service may have some bearing on the working time. Creating new solutions all over for each new client may be harder to estimate time- and budgetwise, than more standard types of services. Furthermore the ability to communicate with, and especially to "say no" to clients may also be important.

Having said all that, it should not be ignored that the employees do not consider working time to be a problem in its own right. It is the pressure of responsibility, the contradictory guidelines etc that constitute the main problems seen from the employees' point of view. This is not to say that the long working hours does not constitute a problem. But to say that the question of working time organisation is closely related to the work organisation and in a broader sense the service concept, and that bringing down working time does involve deeper organisational interventions.

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