VOORBURG GROUP ON SERVICE STATISTICS

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Globalisation of Service enterprises - a survey

Session 7

Abstract

In 1996 Statistics Denmark carried through a survey on Globalisation in Danish enterprises. The paper presents the model that were used to create the survey frame and to get the hard data such as employment, account figures and turnover from the statistical registers on the enterprises that answered the questionnaire. Also some results from the survey is presented.

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0. Preface

The purpose of this document is to present the Danish survey on globalisation which were carried out early 1996. The issue of globalisation lies on the periphery of what the Division for Service sector statistics at Statistics Denmark normally does carry out, but never the less it made it possible for us to develop a model of how to make intensive use of Statistics Denmark's registers on business statistics for the purpose of mailed questionnaires and telephone interviewing.

The resulting database, Globalisation, has been used for several small and large research projects during the last year. One of the latest projects is carried out by one of the authors of this document who will present some of the results derived from the database.

A version of the questionnaire in English is included as annex B to this paper.

1. The survey - a presentation[1]

The idea of a survey on the behaviour and motives of Danish enterprises concerning globalisation were launched by the Ministry of Business and Industry late in 1995. The survey was carried through by Statistics Denmark in co-operation with the ministry and a private consultancy firm. The purpose of the survey was not only to map the foreign direct investments (FDI) that Danish enterprises do abroad but also to map the kind of networking that they participate in and the barriers they face in the globalisation process.

From the beginning it was a demand from the ministry that enterprises from the service sector[2] should be represented in the survey. In 1986 a similar survey on globalisation were carried out on a private basis, but this survey only investigated enterprises in the manufacturing industries and not the construction and service sectors.

1.1 Globalisation and registers

In short terms globalisation could be regarded as a step further than internationalisation as the globalisation process among other issues concentrates on the foreign investment activities by the companies. By establishing subsidiaries producing goods and services in other countries than their home country, companies become operators in other national economies than that of their home country and national economies then become more and more interlinked in a global economic network. This process has become feasible for at least three reasons. Firstly, the movement of factors of productions over national borders has improved, due to cheaper transport, lower trade barriers and a more homogeneous world-wide demand. Secondly, the technological development especially in the field of IT has been significant. Thirdly, a new series of markets in Asia and Eastern Europe has emerged.

In brief, globalisation results in structural changes for both enterprises and nations, and gives rise to new relationships and dependencies. The structural changes can take place either at the regional or the global level.

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[1] The first part of this room document builds heavily on an article by Peter Bøegh Nielsen and Jan Plovsing: "Concepts used in Statistical Business Registers in View of Globalisation and the Information society" which soon is to be published in International Statistical Review. The article is based on a paper presented to the 82nd DGINS conference in Vienna.

[2] The service sector includes construction.

A central point in the discussion on globalisation is the question on ownership of the business units, but no systematic information on foreign ownership can be found in the register of the tax and customs authorities which is the main source of updating the information at the central business register held at Statistics Denmark.

The Danish Central Bank obtains data on foreign direct investments in Denmark in terms of both stocks and flows as well as data on foreign owned enterprises. Even though the registration follows the same numbers as in the registration in connection to the tax authorities it is possible for the companies to use several registrations numbers in dealing with the Danish tax authorities. This means that although a company has a registration at the Danish Central Bank on its FDI it is possible that the number used here not can be refound in e.g. the enterprise statistics register at Statistics Denmark.

Still, one of the advantages of letting Statistics Denmark carry out surveys as this is that it is possible to reduce the burden imposed on the respondents by getting data on e.g. employment and accounts from the relevant registers at Statistics Denmark and then having the respondents concentrate on answering the soft or qualitative questions connected to the survey. This way you get access to register-based data that are comparable to the official and published statistics. In fact this model has been used in other surveys as well, e.g. a survey on Danish enterprises use of organisational changes and the employees' qualifications in co-operation with researchers at Aalborg University.

1.2 The model

As figure 1 suggests, several registers at Statistics Denmark were used, three of them being essential in constructing the survey frame:

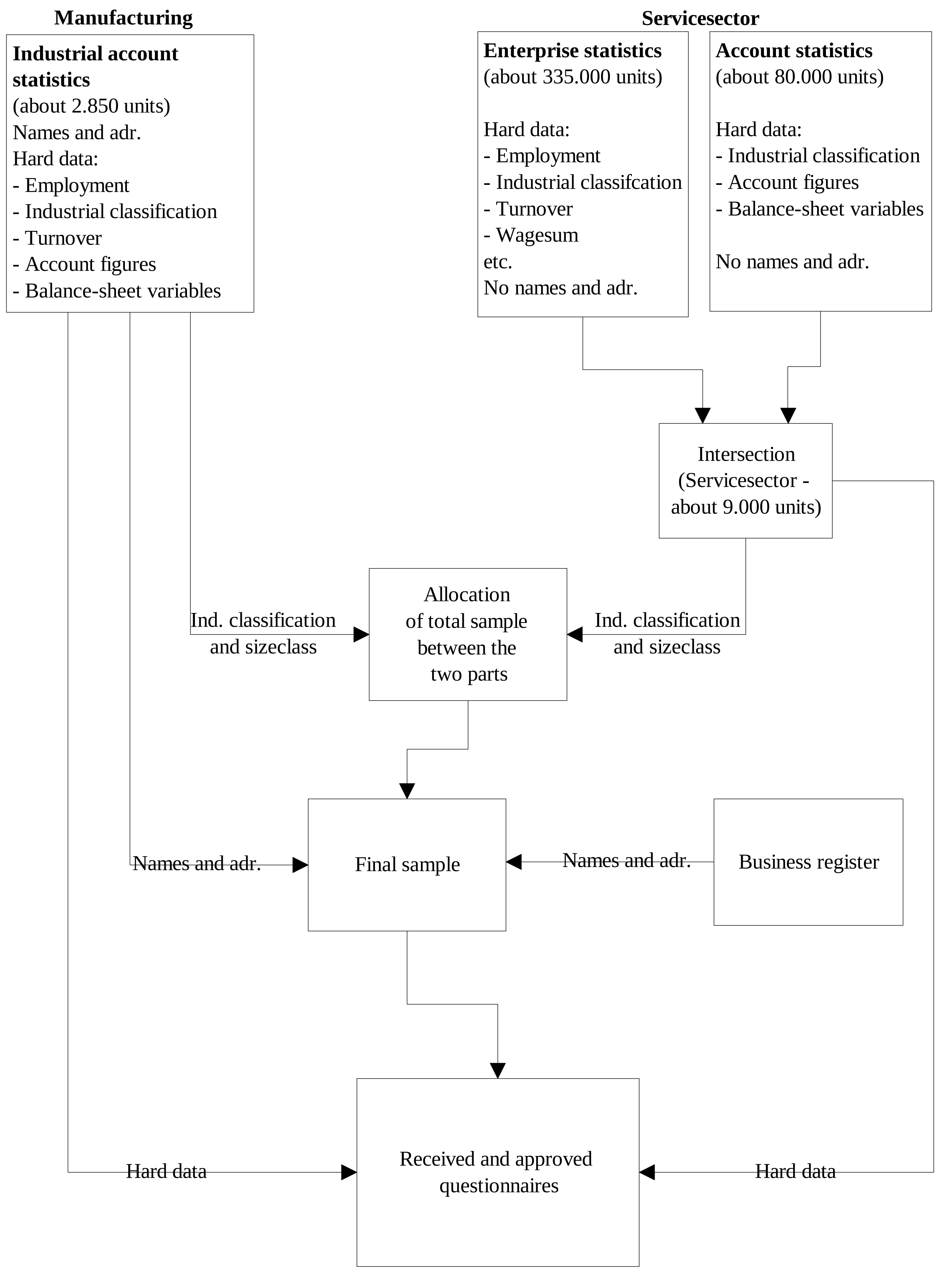
1. For the manufacturing industry the Account statistics register on the manufacturing sector was used. This statistics is an annual statistics based on questionnaires rather than an administrative register. It only covers enterprises with 20+ persons employed. The 1993 version were available at the time of launching the survey.
2. The integrated enterprise statistics covers all industries and comprises information on employment, accounts and economic issues and is based solely on registers. The available version was the 1992 version.
3. The register-based Account statistics is based on an administrative register located at the Danish tax-authorities. This register contains some basic account variables such as net-turnover, costs and labour costs, buying of goods and services for the production and buying of goods and services for resale. The register also contains some main variables on the balance-sheet, which makes it possible to calculate some of the most common key-figures.

In the first round, all the manufacturing industries were selected but it was decided that in some of the smaller size classes a random sample was to be taken.

In order to try to concentrate the survey on enterprises that were thought to be in an internationalisation or globalisation process e.g. by engagement in FDI, and in our efforts to reduce the respondent burden even if this was a voluntary survey, we had to identify branches and size classes where this was the case.

This was however, not possible due to the missing information on this subject in our business register at the time of the survey. Instead we chose to exclude the branches and size classes that was known (by experience) to be oriented towards the home market.

Figure 1: The construction of the survey framework



In that process the following branches belonging to the service sector were left out:

- Lawyers
- Accounting and bookkeeping
- Agricultural advisors
- Architects, including garden- and landscape architects

- Registered land surveyors
- Provisions control
- Provision of temporary workers
- Cleaning, including chimney cleaning, disinfection, specialised cleaning and window cleaning
- Photographers
- Music booking-bureau's

Furthermore it was assumed that smaller (less than 20 employees) wholesale enterprises, hotels and restaurants and retail trade enterprises carried out limited international activities and therefore was left out.

In total, the survey frame was reduced by about 1.570 enterprises.

1.3 The final design

In the final design of the survey frame it was decided that the sample size should be 3.000 enterprises and that all enterprises with 100+ employees should be in the sample and finally that the rest of the enterprises, that is in

- manufacturing; enterprises with 20+ persons employed and
- service; enterprises with 10+ employees (with the exceptions mentioned above)
- should be allocated by a weight[3] and selected by random sample.

Finally the names and addresses were collected from the Business register at Statistics Denmark and from the register of Account statistics of the manufacturing sector. With at few corrections (e.g. enterprises closed after the sampling), the questionnaire were mailed to 1.675 enterprises in manufacturing and 1.281 enterprises in the construction and service sector in the beginning of January 1996.

1.4 Response rates

Table 1 below shows a summary of the response rates. Enterprises with 100+ employees had a response rate above the overall response rate. The same holds for construction and the trade and Horeca group. Especially in the transport and communication group 20-49 employees the response rate is low.

Table 1: Response rates (in percent)

	Size classes				
Percentages	10 - 19	20 - 49	50 - 99	100+	Total
Manufacturing	.	39	46	49	44
Construction	.	52	45	49	49
Trade and Horeca	43	45	46	48	47
Transport and communication	44	30	60	43	42
Business services	46	47	43	42	46
Total	46	42	46	48	45

Source: Survey on globalisation (the database), Statistics Denmark 1996

[3] The weights were 55% manufacturing and 45% Service

2. Results

2.1 Manufacturing and service in the global market

In the following enterprises from the manufacturing and service sectors will be compared. Enterprises included from the survey are those, which were engaged in international activities in 1995. The participating enterprises included are 640 manufacturing enterprises and 303 service enterprises. The purpose is to show whether there is a significant difference between the ways the manufacturing and service sectors act in the global market.

Table 2 Production, turnover, employment and business relations, 1995.

	Sector	
	Manufacturing	**Service**
Distribution of production and turnover (Q8):		
Denmark		
Production	81,1%	80,2%
Turnover	31,0%	60,6%
Western Europe		
Production	13,3%	13,3%
Turnover	44,4%	19,3%
Other markets		
Production	5,6%	6,6%
Turnover	24,6%	20,0%
No. of countries to which the enterprises have export, mean (Q7)	17	10
Total foreign employment (Q4)	23687	39818
No. of foreign employees per firm, mean (Q4)	45	166
Percentage of foreign employment (Q4)	16,7%	36,8%
The foreign employment's functional distribution on (Q4):		
Production	59,0%	37,9%
Administration	10,2%	12,4%
Marketing	18,2%	37,7%
R & D	2,1%	8,0%
Other functions	10,5%	4,1%
No. of countries in which the enterprises have business relations, mean (Q7)	2	6

Source: Survey on globalisation, Statistics Denmark 1996

Table 2 shows which markets the Danish manufacturing and service enterprises produce and sell, the number of countries to which the enterprises have exported, their foreign employment in actual numbers and in percentage of the total number of employees, the foreign employment's functional distribution on production, administration, marketing, R & D and other functions and number the of countries in which the enterprises have business relations with.

First for all, the table shows, even though at least twenty per cent of the service production is exported, that service enterprises to a much larger extent than manufacturing enterprises sell their products at the same market in which the products are produced. It is surprising that such a large proportion of the service sector's products is exported, because some service activities are not exportable and because factors such as personal relations, common language, closeness to customers and understanding of culture/customs must be expected to be more important when selling service products rather than manufacturing products. A possible explanation could be that around fifty percent of the considered enterprises in the service sector are in trade and business service such as consulting enterprises. Furthermore, the service sector exports to just 10 countries, whereas the manufacturing sector exports to 17 countries. However, the mean foreign turnover of the service sector is 34% higher than that of the manufacturing sector.

The service sector also aims at high foreign employment compared to the manufacturing sector, both in number and mean per enterprise. As the functional distribution of employment shows, manufacturing enterprises employ almost 60% in production, whereas employment in service enterprises is more evenly distributed among the five functions. Part of the reason is that manufacturing companies usually need to have a larger proportion of the employees in production, but the numbers indicate that service enterprises establish a “whole” firm at the places where they operate.

In short, the above indicates that service production to a large extent is located where it is sold as well as the proportion of foreign employment is larger than for manufacturing enterprises. The survey also shows that the service sector in general exports to fewer countries and puts greater emphasis on business relations. All in all this could indicate that the service sector generally uses a focus strategy and the manufacturing sector uses a diversification strategy, because the service sector’s effort is more intensive with regards to locate employment at foreign markets and the sector’s export is in general concentrated on fewer markets compared to the manufacturing sector.

The next step in the description will be to look at the motives as well as barriers for internationalisation. These factors can to some extent explain why the sectors act as they do.

Table 3a: Motives for internationalisation, 1995.

Motives for internationalisation which have great or some importance (Q23):	Sector Manufacturing	Service
Outside enquires	70,9%	69,4%
Small home market	81,4%	69,9%
A great deal of competition on home market	51,4%	49,0%
Desire for increased growth	92,3%	89,8%
Desire to boost earnings	93,4%	89,3%
Desire to ensure the enterprise's future	94,2%	90,3%
Internationalisation has become easier as a result of IT	55,7%	60,2%
The enterprise specialised and therefore needs a larger market	65,1%	48,5%
Public co-financing/risk coverage	27,6%	25,2%
Product/service requiring many markets	52,0%	41,3%
Cost savings	70,2%	55,3%
Access and proximity to customers/market	72,6%	58,7%
Proximity to innovative industrial environment	37,9%	30,6%
Access to technical/research skills	37,3%	41,3%
Access to commercial skills	43,3%	35,9%
Other factors	15,0%	14,1%

Source: Survey on globalisation, Statistics Denmark 1996

The overall picture in table 3a indicates that except for the motive Access to technical/research skills the listed motives mean more to the manufacturing sector than to the service sector. Increased growth and earnings and Security for the enterprise in the future is of great and equal importance to the two sectors. This would also be expected even if the enterprises did not have international activities.

Whether there has been a Foreign approach or not, and the Limited size of the home market are also of almost equal importance to both sectors, and provide no information about the difference between the sectors. The motives; Internationalisation has become easier due to IT and Access and closeness to customer/market are of greatest importance to the service sector when the service sector is viewed in isolation, but these two motives also score high in manufacturing.

Table 3b: Barriers for internationalisation, 1995.

Barriers for internationalisation (Q24):	Manufacturing	Service
Trade barriers	62,3%	41,7%
Insufficient knowledge and information on foreign markets	61,0%	67,5%
Infrastructure	54,8%	44,2%
Danish tax and depreciation regulations	44,3%	32,0%
Lack of risk capital	42,4%	40,3%
Lack of qualified workers	54,4%	62,1%
Management structure	46,7%	47,6%
Language/cultural barriers	62,3%	59,2%
Product adaptation	66,8%	57,3%
Other barriers	18,8%	18,4%

Source: Survey on globalisation, Statistics Denmark 1996

When it comes to barriers the pattern is almost the same, cf. table 3b. All the listed barriers score high in manufacturing but two barriers score higher in the service sector; Lack of knowledge and information about foreign markets and Lack of qualified employees. Trade barriers as well as Danish tax and depreciation regulations are the issues where there are the strongest differences in opinions between the sectors and the manufacturing sector sees them as most important. A possible explanation could be that the service sector exports less and produces more at foreign markets than the manufacturing sector does and thereby the service sector will not respectively experiences Trade barriers and Danish tax and depreciation regulations to the same extent as the manufacturing sector does.

2.2 Business relations

An other of the qualitative factors connected to globalisation is business relations with foreign companies, which will be looked at in the following table 4.

The table shows, that business relations with private companies are the far most used partners, then research companies and last public companies for both sectors. But as table 2 showed, the service sector puts greater emphasis on business relations. In table 3 it is seen that for all three co-operation partners the most common types of business relations are informal and formal with more than one partner.

Table 4: Foreign business relations, 1995 (Q19).

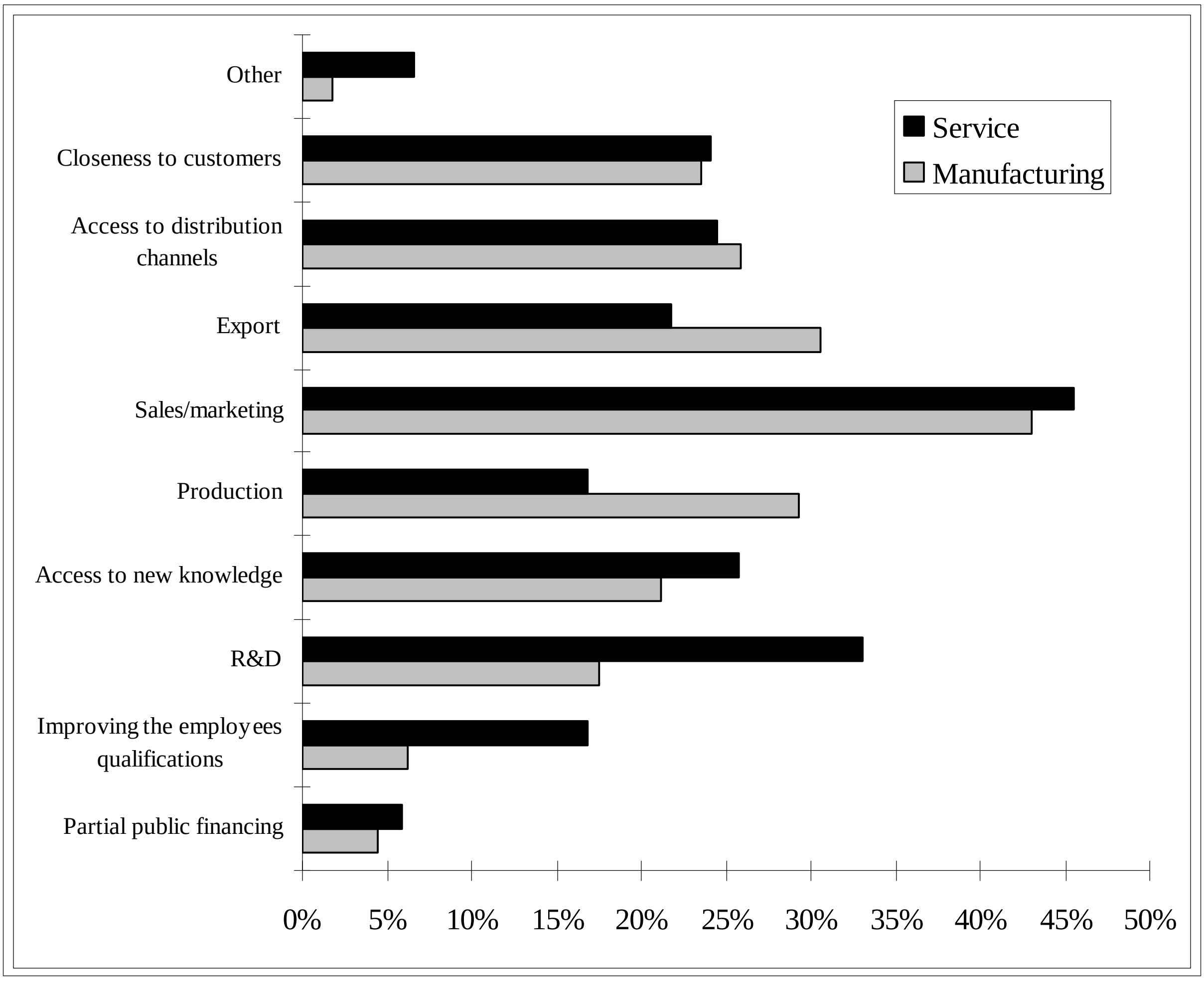
	Private Companies		**Research Companies**		**Public Companies**	
	Manufacturing	Services	Manufacturing	Services	Manufacturing	Services
Informal w. one partner	13%	11%	20%	9%	13%	10%
Informal w. more partners	33%	37%	40%	59%	35%	57%
Formal w. one partner	20%	23%	14%	9%	13%	10%
Formal w. more partners	34%	30%	26%	24%	39%	23%
Total no. of business relations	141	122	35	34	23	30

Source: Survey on globalisation, Statistics Denmark 1996

The explanation for this situation could be that the strategies of enterprises are going toward a strengthening of their supply chain, which means they usually have more than one partner as well as the product produced are more specialised, as seen in table 3a.

Figure 2 shows what purpose the enterprises have with the foreign business relations. For service enterprises Improving the employees qualifications, Sales/marketing, R&D and Access to new knowledge is relatively important compared to the manufacturing sector. Apart from Sales/marketing it seems as the service enterprises are trying to strengthen the basic knowledge competence's of the enterprise through a international network.

Figure 2: Purpose of foreign business relations, 1995 (Q21).



Source: Survey on globalisation, Statistics Denmark 1996

MINISTRY OF TRADE
AND INDUSTRY

DANMARKS STATISTIK

Serial number: ________

Questionnaire on the internationalisation of Danish enterprises

January 1996

Questionnaire on the internationalisation of Danish enterprises

I. General

The questions in this section refer to various general factors such as ownership of the enterprise, turnover and employment. If the enterprise is a Danish parent company with various subsidiary firms in Denmark and/or abroad, the answers should refer to the group as a whole. If the enterprise is a subsidiary company of a foreign group, the answers should refer to the Danish firm(s) alone.

Question 1: Ownership of the enterprise

Is the enterprise wholly or partly foreign-owned? (Mark the appropriate box with a cross).

Yes ❑ No ❑ No information ❑

Is the enterprise part of a group? (Mark the appropriate box with a cross)

Yes ❑ No ❑ No information ❑

Question 2: The enterprise's international activities

Does the enterprise have any kind of international activity (exports, foreign investments, cooperation links)? (Mark the appropriate box with a cross).

Yes ❑ No ❑(Move on to question 22) No information ❑

Question 3: Turnover of the enterprise

Please estimate the enterprise's total turnover in 1995 and in 2000, divided into domestic turnover (excluding exports) and foreign turnover (including exports, turnover of foreign subsidiaries, royalties, fees etc. from abroad) in 1995 kroner.

	Domestic turnover (DKR million approx.)	**Foreign turnover** (DKR million approx.)
1995	________________	________________
2000	________________	________________

Question 4: Employment in the enterprise

a) How many man-years were worked in the enterprise in 1995, divided into the following activities (estimate the number of man-years)?

	Approx. number of man-years: Enterprises in Denmark	Enterprises in other countries
• Production	________	________
• Administration	________	________
• Marketing	________	________
• Research and development	________	________
• Other	________	________
• Total	________	________

b) What percentage of the total number of man-years worked in the enterprise in Denmark is estimated to have been spent on foreign activities in 1995?__________

Question 5. Sub-contracting

a) Was the enterprise primarily a sub-contractor within its most important product/service field in 1995? (Mark the appropriate box with a cross).

Yes ❑ No ❑ No information ❑

b) Is the enterprise expected to be primarily a sub-contractor within its most important product/service field in 2000? (Mark the appropriate box with a cross).

Yes ❑ No ❑ No information ❑

c) Was the enterprise involved in any form of development cooperation with its main customers in 1995? (Mark the appropriate box with a cross).

Yes ❑ No ❑ No information ❑

d) Is the enterprise expected to be involved in any form of development cooperation with its main customers in 2000? (Mark the appropriate box with a cross).

Yes ❑ No ❑ No information ❑

II. International sales

The questions in this section refer to the enterprise's international sales, more particularly whether it has foreign subsidiaries etc. If the enterprise is a Danish parent company with various subsidiary firms in Denmark and/or abroad, the answers should refer to the group as a whole. If the enterprise is a subsidiary company of a foreign group, the answers should refer to the Danish firm(s) alone.

Question 6: Foreign turnover from international activities

Estimate the breakdown of the enterprise's foreign turnover from the activities listed below for 1995 and 2000 (in 1995 kroner).

	1995 (DKR million approx.)	2000 (DKR million approx.)
• Foreign sales via Danish agents	________	________
• Foreign sales direct to customers or via foreign agents	________	________
• Foreign sales via own companies abroad	________	________
• Own production companies abroad	________	________
• Licensing agreements	________	________
• Co-production/joint ventures	________	________
• Total	________	________

Question 7: International activities divided by number of countries

Estimate the number of countries (excluding Denmark) in which the enterprise carried out the international activities listed below in 1995, and expects to carry out such activities in 2000.

	1995* (approx. number of countries)	2000* (approx. number of countries)
• Exports	________	________
• Foreign sales companies	________	________
• Foreign production companies	________	________
• Foreign cooperation	________	________

**A given country may be included in more than one category.*

Question 8: The enterprise's production and sales on various markets

Estimate the enterprise's production and sales in 1995 and in 2000 in Denmark, in Western Europe and on other markets (in 1995 kroner).

1995	**Production** (DKR million approx.)	**Sales** (DKR million approx.)
• Denmark	______	______
• Western Europe	______	______
• Other markets	______	______

2000	**Production** (DKR million approx.)	**Sales** (DKR million approx.)
• Denmark	______	______
• Western Europe	______	______
• Other markets	______	______

Question 9: Investments abroad

During the past five years, has the enterprise been involved in any of the forms of investment listed below outside Denmark and does it expect to be involved in new investments abroad during the next five years? (Mark the appropriate box(es) with a cross).

	Past five years	New activities next five years
Purchase/takeover of existing enterprises	☐	☐
Start-ups	☐	☐
Joint ventures with foreign enterprise	☐	☐

If not, move on to question 11.

Question 10. Purpose of the Danish enterprise's investments abroad

What is/will be the purpose of the Danish enterprise's investments abroad? (Mark the appropriate box(es) with a cross).

- Desire for increased growth in due course ☐
- Desire for a wider range of activities in the enterprise ☐
- Cost savings in due course ☐
- Access to customers/markets ☐
- Access to new technical skills ☐
- Access to additional products/services ☐
- Access to service functions ☐
- Access to sales/distribution chain ☐
- Other ☐

Question 11. Foreign enterprises' investments in Denmark

Have any foreign enterprises undertaken any of the following forms of investment in the enterprise in the past five years, and are any expected to undertake new investments during the next five years? (Mark the appropriate box(es) with a cross).

	Past five years	New activities next five years
• Purchase/takeover of whole enterprise	❑	❑
• Purchase/takeover of enterprise's	❑	❑
Danish subsidiary/subsidiaries	❑	❑
• Purchase/takeover of enterprise's	❑	❑
foreign subsidiary/subsidiaries	❑	❑
• Joint ventures with enterprise	❑	❑

III. International competition

The questions in this section refer to the enterprise's international competitors, especially with respect to any subsidiaries. If the enterprise is a Danish parent company with various subsidiaries in Denmark and/or abroad, the answers should refer to the group as a whole. If the enterprise is a subsidiary company of a foreign group, the answers should refer to the Danish firm(s) alone.

Question 12. International competition

How would you describe the enterprise's competition abroad in 1995 and likely competition in 2000? (Mark the appropriate box with a cross).

Competition in 1995:

A few main competitors (up to 3) ❑ Many competitors (4 or more) ❑

Competition expected in 2000:

A few main competitors (up to 3) ❑ Many competitors (4 or more) ❑

Question 13. The enterprise's main competitors

From which countries do you think the enterprise's most important competitors came in 1995 and will come in 2000? (Mark a maximum of 3 boxes in each column).

	1995	2000
Denmark	❑	❑
Sweden	❑	❑
Norway	❑	❑
Finland	❑	❑
Germany	❑	❑
United Kingdom	❑	❑
Other countries in Western Europe	❑	❑
Poland	❑	❑
Hungary	❑	❑
Czech Republic	❑	❑
Other countries in Eastern Europe	❑	❑
USA	❑	❑
Canada	❑	❑
Latin American countries	❑	❑
Middle Eastern countries	❑	❑
Japan	❑	❑
China	❑	❑
South-East Asian countries	❑	❑
Australia	❑	❑
Other countries	❑	❑
Many small competitors from various countries	❑	❑
Many small competitors from one single country	❑	❑

Question 14: The enterprise's main foreign competitor

How would you describe the enterprise's most important foreign competitor in 1995 and 2000? (Mark the appropriate box(es) with a cross).

	1995	2000
- Local enterprise abroad	❑	❑
- Multinational enterprise	❑	❑
- Enterprise wholly or partly in public ownership	❑	❑

Question 15: The enterprise's most important foreign customers

How would you describe the enterprise's most important foreign customers in 1995 and 2000? (Mark the appropriate box(es) with a cross).

	1995	2000
Multinational production enterprises	❑	❑
Foreign local production enterprises	❑	❑
Distribution enterprises abroad	❑	❑
Retail enterprises	❑	❑
Enterprises wholly or partly publicly owned	❑	❑
Households	❑	❑

IV. Cooperation

The questions in this section refer to the enterprise's cooperation with other enterprises/institutions, in particular from the point of view of firms situated in Denmark.

Question 16. Cooperation within Denmark in 1995

Was the enterprise involved in any kind of cooperation with other Danish enterprises/institutions in 1995? (Mark the appropriate box with a cross).

Yes ❑ No ❑(Move on to question 20) No information ❑

Cooperation within Denmark in 1995:
(Mark the appropriate box(es) with a cross).

	Cooperation partners		
Types of cooperation	Private enterprises	Public enterprises	Research institutions
• Occasional cooperation with one partner			
• Occasional cooperation with more than one partner			
• Regular cooperation with one partner			
• Regular cooperation with more than one partner			
• None			

Question 17. Cooperation within Denmark in 2000

Does the enterprise expect to be involved in any form of new cooperation with other Danish enterprises/institutions between now and 2000? (Mark the appropriate box with a cross).

Yes ❑ No ❑(Move on to question 20) No information ❑

Cooperation within Denmark in 2000:
(Mark the appropriate box(es) with a cross).

	Cooperation partners		
Types of cooperation	Private enterprises	Public enterprises	Research institutions
• Occasional cooperation with one partner	❑	❑	❑
• Occasional cooperation with more than one partner	❑	❑	❑
• Regular cooperation with one partner	❑	❑	❑
• Regular cooperation with more than one partner	❑	❑	❑
• None	❑	❑	❑

Question.18. Purpose of cooperation within Denmark

What is/will be the purpose of cooperation within Denmark?
(Mark the appropriate box(es) with a cross).

- Public cofinancing ❑
- Adding to the qualifications of the workforce ❑
- Research and development ❑
- Access to further know-how ❑
- Production ❑
- Sales/marketing ❑
- Exports ❑
- Access to distribution chains ❑
- Proximity to customers ❑
- Other ❑

Question 19. Cooperation with foreign enterprises in 1995

Was the enterprise involved in any form of cooperation with foreign enterprises/institutions in 1995? (Mark the appropriate box with a cross).

Yes ❑ No ❑(Move on to question 20) No information ❑

Cooperation with foreign firms in 1995:
(Mark the appropriate box(es) with a cross).

	Cooperation partners		
Types of cooperation	Private enterprises	Public enterprises	Research institutions
• Occasional cooperation with one partner	❑	❑	❑
• Occasional cooperation with more than one partner	❑	❑	❑
• Regular cooperation with one partner	❑	❑	❑
• Regular cooperation with more than one partner	❑	❑	❑
• None	❑	❑	❑

Question 20. Cooperation with foreign enterprises in 2000

Does the enterprise expect to be involved in any form of cooperation with other Danish enterprises/institutions in 2000? (Mark the appropriate box with a cross).

Yes ❑ No ❑(Move on to question 21) No information ❑

Cooperation with foreign enterprises in 2000:
(Mark the appropriate box(es) with a cross).

	Cooperation partners		
Types of cooperation	Private enterprises	Public enterprises	Research institutions
• Occasional cooperation with one partner	❑	❑	❑
• Occasional cooperation with more than one partner	❑	❑	❑
• Regular cooperation with one partner	❑	❑	❑
• Regular cooperation with more than one partner	❑	❑	❑
• None	❑	❑	❑

Question 21. Purpose of foreign cooperation

What is/will be the purpose of cooperation with foreign enterprises/institutions? (Mark the appropriate box(es) with a cross).

- Public cofinancing ❑
- Adding to the qualifications of the workforce ❑
- Access to know-how ❑
- Research and development ❑
- Production ❑
- Sales/marketing ❑
- Exports ❑
- Access to distribution chains ❑
- Proximity to customers ❑
- Other ❑

V. Barriers

The questions in this section refer to any barriers to the internationalisation of the enterprise, more particularly from the point of view of firms situated in Denmark.

Question 22. Wishes as regards internationalisation

Does the enterprise wish to become international, or more so, in the future? (Mark the appropriate box(es) with a cross).

Yes ❑ No ❑ Don't know ❑

If not, the reason is that (Mark the appropriate box(es) with a cross):

- the enterprise is the right size at present ❑
- the barriers to increased internationalisation are too great ❑
- other ❑

If the enterprise does not wish to become (more) international, move on to question 29.

Question 23. Reasons for internationalisation

Which of the factors below is of importance for the internationalisation of the enterprise (exports, foreign investments, cooperation)?
(Mark only one box on each line).

	Of great importance	Of some importance	Of no importance
• Outside enquiries	❑	❑	❑
• Small home market	❑	❑	❑
• A great deal of competition on the home market	❑	❑	❑
• Desire for increased growth	❑	❑	❑
• Desire to boost earnings	❑	❑	❑
• Desire to ensure the enterprise's future	❑	❑	❑
• Internationalisation has become easier as a result of information technology	❑	❑	❑
• The enterprise has specialised and therefore needs a larger market (e.g. niche product)	❑	❑	❑
• Public cofinancing, risk coverage	❑	❑	❑
• Product/service requiring many markets (e.g. product easily copied)	❑	❑	❑
• Cost savings	❑	❑	❑
• Access and proximity to customers/market	❑	❑	❑
• Proximity to innovative industrial environment	❑	❑	❑
• Access to technical/research skills	❑	❑	❑
• Access to commercial skills	❑	❑	❑
• Other factors	❑	❑	❑

Question 24. Barriers to internationalisation

Are any of the factors listed below seen as barriers to the internationalisation of the enterprise? (Mark only one box on each line).

Barriers	Of great importance	Of some importance	Of no importance
• Trade barriers (e.g. customs, technical obstacles to trade)	❑	❑	❑
• Insufficient knowledge of and information on foreign markets	❑	❑	❑
• Infrastructure (e.g. communications, transport/distribution channels)	❑	❑	❑
• Danish tax and depreciation regulations	❑	❑	❑
• Lack of risk capital	❑	❑	❑
• Lack of qualified workers	❑	❑	❑
• Management structure	❑	❑	❑
• Language/cultural barriers	❑	❑	❑
• Product adaptation (e.g. technical sales work, cost barriers)	❑	❑	❑
• Other barriers	❑	❑	❑

Question 25. Importance of barriers

How important would it be for the following three international activities of the enterprise that the practical barriers (cf. question 24) should be overcome?
(Mark the appropriate box(es) with a cross.)

	Very important	Fairly important	Unimportant
• Exports	❑	❑	❑
• Foreign investments	❑	❑	❑
• Foreign cooperation	❑	❑	❑

Question 26. Potential

If the practical barriers which the enterprise faces today were overcome (cf. question 24), how much larger could the enterprise's foreign turnover be in 2000 (estimated figure, in 1995 kroner)?

Estimated extra turnover in 2000 (cf. question 3) Approx. DKR _________ million.

VI Trade and industry policy

The questions in this section refer to the importance of Danish trade and industry policy for the internationalisation of the enterprise, i.e. policy seen from the point of view of firms situated in Denmark.

Question 27. Trade and industry policy initiatives

How important are the enterprise policy initiatives listed below considered to be for the further internationalisation of the enterprise? (Mark one box on each line).

	Very important	Fairly important	Unimportant
• Action against technical barriers to trade	❑	❑	❑
• Information and services relating to foreign markets (e.g. trade information, export grants)	❑	❑	❑
• Access to information data bases (on foreign markets, e.g. wage levels, structure of trade and industry)	❑	❑	❑
• Support for export drives	❑	❑	❑
• Access to export credits and export financing	❑	❑	❑
• Loan for risk investments (e.g. from Vækstfonden*)	❑	❑	❑
• Support for joint ventures with foreign enterprises	❑	❑	❑
• Support for participation in international research projects (e.g. EU and EUREKA)	❑	❑	❑
• Target-orientated offer of further training (e.g. in technology, languages and international cooperation)	❑	❑	❑
• Promotion of cooperation with Danish and foreign enterprises	❑	❑	❑
• Initiatives to attract foreign investments in Denmark	❑	❑	❑

[* = Growth Fund]

Question 28. Alternative trade and industry policy initiatives

Will the enterprise be able to become (more) international more quickly if trade and industry policy initiatives other than the existing ones are implemented? (Mark with a cross)

Yes ☐ No ☐

If so, which ones?

____

____

____

Question 29. More detailed interview

- Would the enterprise be prepared to take part in a more detailed interview on the internationalisation of the enterprise conducted by Mandag Morgen on behalf of Danmarks Statistik and the Ministry of Trade and Industry? (Mark with a cross).

Yes ☐ No ☐

Question 30. Report

Would you like to be sent a copy of the completed report?

Yes No

Additional information

Contact person in the enterprise *Telephone number*

How long did it take to complete the questionnaire?

Hours *Minutes*

VOORBURG GROUP ON SERVICE STATISTICS

Twelfth Meeting

Copenhagen, 15-19 September 1997

Thoughts about a Strategy for Service Sector Statistics

Session 7

Abstract

The services sectors in Denmark are for the basic variables (as employment, turnover, gross value added) covered by the general register-based statistics produced by Statistics Denmark. This paper argues that the fulfillment of the user needs demands information beyond these general statistics. The paper focus on 8 elements to be included in a future strategy for service sector statistics. The proposed strategy is based on a customer and output orientation.

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Karsten Stetkær (Statistics Denmark)

1. Introduction

One of the main features of the economic development in Denmark and also in the other Member States of the European Union in the last twenty-five years has been the growing importance of the services sector. This can be illustrated by the development of employment and gross value added in market services compared to the overall economy.

In 1970 employment in market services comprised nearly 35% in Denmark, slightly exceeding the average of approximately 1/3 of total employment for the countries which today constitute the European Union, cf. table 1.1. Since then, employment in market services have risen in all Member States, and in 1993 employment in market services constituted more than 40% of total employment in all Member States except 3, one of them being Denmark.

Table 1.1. Share of market services in total economy by no. of persons employed, 1970-93

Country	1970	1980	1985	1990	1993
B	36.5	42.1	45.3	47.9	48.7[1]
DK	34.5	34.1	34.1	35.6	36.2
D	30.4	34.1	35.8	37.9	40.6
E	n/a	37.4	36.3	38.4	40.8
F	30.2	35.2	37.2	40.5	40.9
Irl	n/a	n/a	32.2	32.1	n/a
I	29.0	34.0	40.2	42.3	43.5
L[3]	35.7	43.7	48.5	51.9	54.2[1]
NL	41.5	47.3	50.7	53.3	55.5
P	n/a	23.8	24.9	28.0	27.3[1]
UK	36.8	41.8	46.4	51.0	57.1
A	n/a	n/a	36.6	39.5	41.2
FIN	n/a	32.1	33.4	36.1	35.7
S	42.1[2]	45.5[2]	48.51[2]	51.6	55.1

1. 1992
2. National data.
3. Number of employees.

Source: Eurostat, National Accounts

Also when measured by gross value added at factor costs, market services' share of total economy has increased rapidly. Actually, market services is more important in the total economy considering value added instead of employment. Measured by share of total gross value added, Denmark had the second largest market services sector in 1970 of the 15 countries. But Denmark experienced the smallest growth of all countries in the period, and the share of market services in the total economy in 1993 in Denmark was smaller than in most other countries, cf. table 1.2.

Table 1.2. Share of market services in total economy by gross value added (factor costs), 1970-93

Country	1970	1980	1985	1990	1993
B	43.0	47.3	50.7	53.7	56.1
DK	43.8	42.9	44.6	46.4	46.8
D	35.6	41.9	44.8	46.6	50.1[1]
GR	39.0	37.8	37.3	39.6	44.8
E	37.5	42.3	44.0	44.6	48.8
F	40.4	44.2	46.4	49.7	50.8[1]
Irl	35.4	37.6	38.0	41.8	42.4
I	40.1	44.1	48.2	50.5	52.8
L[3]	33.4	46.6	57.7	54.6	59.9[2]
NL	43.5	48.8	50.4	55.2	58.2
P	n/a	38.8	40.0	41.2	n/a
UK	40.9	41.4	43.6	49.8	53.8
A	n/a	n/a	n/a	n/a	n/a
FIN	n/a	35.2	37.0	39.3	42.5
S	45.4	50.5	52.1	54.6	60.0

1. Gross value added at market prices
2. Estimated from national data
3. National data

Source: Eurostat, National Accounts

The reason for this relatively small sector of market services in Denmark is the relative large public sector in our country. The public sector constituted in the beginning of the 1970'es approximately 18% of the total employment, growing to 33% in 1993.

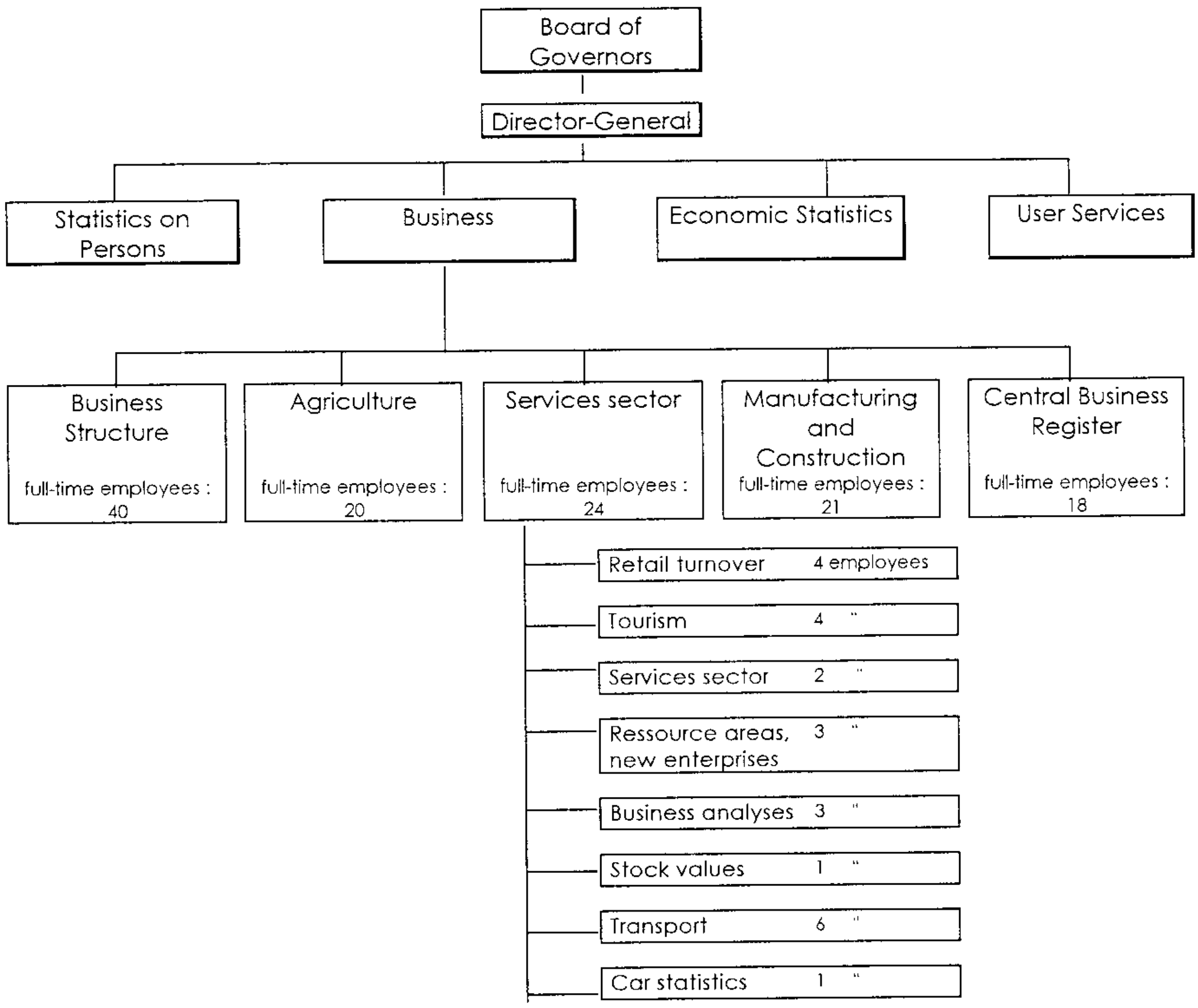
It can be concluded, that the market services is the most important sector in the Danish and the European economy, and thus we are all in the statistical offices faced with the challenge of how to cover statistically this continously growing services sector.

2. The organisation and coverage of statistics on the services sector in Denmark

At the organisational level, Statistics Denmark has anwered on the challenge by establishing a separate division for service statistics as part of the organisational changes in September 1995. The division covers all market services statistics except for financial services. The division altogether employs 27 persons in September 1997, equivalent to 20% of the persons employed in the Directorate for enterprise statistics, cf. table 2.1 for a description of the resources used for different services sector statistics.

The importance of the services sector is also recognised in the strategic planning of Statistics Denmark, as the development of statistics on the service industries is mentioned as one of the five areas of priority. At a first glimpse, it could be argued that this recognition of importance of the services sector

Table 2.1. Organization Chart 1996



is not reflected in the resources allocated for the production of service statistics. But it is important to keep in mind the central role and use of administrative data in Statistics Denmark.

Since the beginning of the 70'es a rising number of business statistics has been produced by utilizing administrative sources. These statistics have been characterized by the large sectoral coverage as all - or nearly all - activities have been covered and the statistics have been published both on an annual and quarterly basis, regarding statistics on turnover and employment. An important element in the Danish business statistics is the Statistical Business Register which has been operating since 1975 and has a total sectoral coverage and also covering all enterprises except minor enterprises with an annual turnover of less than DKK 20 000.

In the second half of the 1980'es the register-based statistics have been enlarged with a general accounts statistics based on the annual tax information from the enterprises. The statistics covers a range a accounting variables such as gross value added and fixed assets. Statistics Denmark has also developed a statistics on new enterprises solely based on registers, ie VAT statistics, business employment statistics and the Business Register.

The general register-based statistics are produced at the Division for Business Structure and therefore not part of the work produced by the 27 persons in the Division of Service Statistics. For special analysis requested by external users as ministeries, research institutions we in the Division for Service Statistics use these statistical registers in different ways, for instance at a more detailed level or in horisontal or vertical integrations with other registers, cf. the conclusion for examples.

Thus it can be concluded that the register-based statistics cover a large number of the basic and most important economic and employment variables, and the sectoral coverage of these register based statistics also includes the services sector.

3. Elements to a strategy for service sector statistics

As a starting point it must be concluded that Statistics Denmark possesses a number of general register-based statistics enabling us to meet the must important needs and requirements of the internal users (National accounts) and external users (ministeries, researchers, etc.) None the less, it is our clear opinion -and experience- that the available statistical data mainly fulfill the needs for macro economic analysis, and *not* the needs for micro analysis frequently put forward by the branch organisations, the industries themselves and the ministeries, for which a further development of the statistics on the services sector is still needed.

Even if the development of the services sector statistics is one of the priority areas in Statistics Denmark, till now no strategy as such has been formulated. The underlying idea behind the proposed elements to a strategy for service sector statistics is to focus on customer and output orientation. By this is meant that focus should be on the user needs of the industry itself (the enterprises and the branch organisations) and on the needs for business policy makers more than an orientation towards the needs of the national accounts. In the following we shall argue for the most needed elements in a future statistical coverage of the services sector.

1. Sectoral coverage and priorities. The traditional services industries as distributive trade, hotels and restaurants or transport are covered by statistics on the physical output as no.of nights spent or ton kilometers. The problem of poor statistical coverage is especially relevant for the business services which does not belong to the traditionel services activities. The business services consists of activities which are relatively new in their nature and thus not covered by the statistical production of the national statistical institutes. A very useful approach towards a priority of the branches is the grouping of service activities presented by Statistics Canada[1] - even if it is not going to be discussed in this paper.

2. Product information. It is not sufficient information to know the total turnover of for instance the it-services, which we can get from the VAT statistics. In order to understand the development of the branch it is necessary to collect information about the detailed breakdown of the turnover of the it services. How large is the services part compared to the selling of goods as hardware? Which part of the turnover of the branch derives from the selling of services as education and how large a part from the selling of software? We have started to develop such statistics on the business services and we have found problems in using the existing tool for the breakdown of turnover, ie the CPA classification.

3. Supply and demand interaction. For the understanding of the development of the services sector the measuring of the outsourcing process is of importance. The statistics covering the services sector have been focuseds on the supply side but we need more information about the demand for services by the enterprises or households and how this demand influences the development of the services sector. To which extent are transport activities carried out as internal services and what is the reasoning for doing this? The outsourcing of it services is important for understanding the development of the computer services - does the recent development in software change this outsourcing process?

4. The information (technology) activities. These activities are fast growing and complex in their components. We see this as the most urgent challenge for Statistics Denmark to start a methodological work on how and what to measure regarding it activities. As mentioned above the use of it technology on the demand side is of very high priority. Statistics on the information technology activities -or even broader the information society- may not necessarily mean the collection of new characteristica. Of course the it services are in the center of the information society together with telecommunications, audiovisuals and it-manufacturers.

The two factors which characterise the information society, the "horizontal" aspect and the rapid pace of change, give rise to various new user requirements. Economic activities have to be defined differently for the purposes of business policy analyses, for example, from the way in which they have been defined in present classifications of industries/branches. Users obviously need to regroup existing industries into new, cohesive areas of activity. This is perhaps most clearly seen in connection with the information technology branches, which cover a broad spectrum of activities from manufacturing to telecommunications, computer services and the audiovisual sector.

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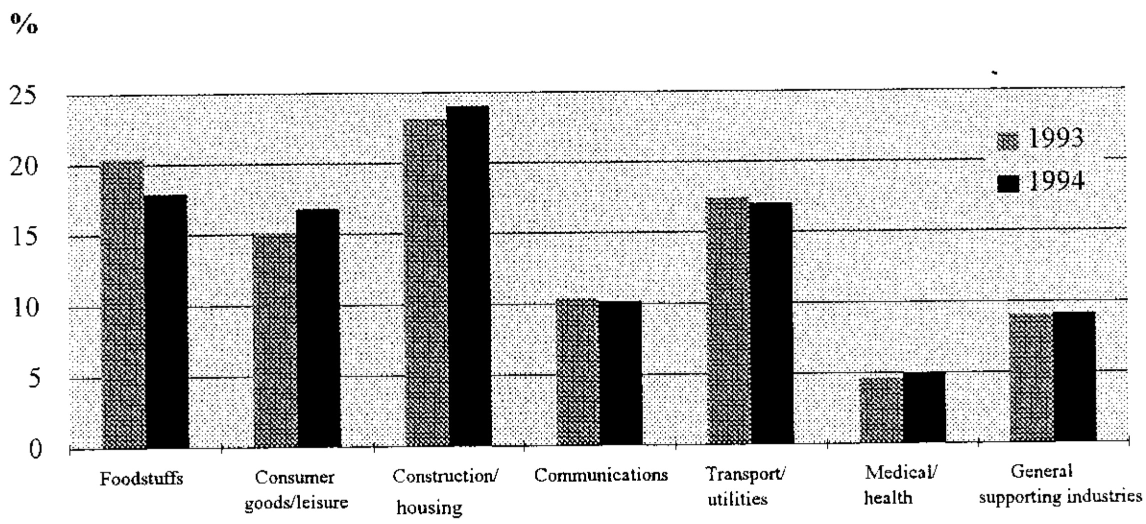
[1] Statistics Canada: Strategy for the Collection of Services Statistics, 1993

The North American Industrial Classification System (NAICS)[2], is one such attempt to *regroup* the basic classifications of industries. The NAICS has defined an information sector which is different from the other two sectors, the goods-producing and the service-producing. The proposed information sector groups together three types of enterprise: 1) those engaged in producing, manipulating and distributing information and cultural products, 2) those that provide the means to transmit or distribute these products as well as data or communications and 3) those that process data or transactions.

In Denmark, as a result of urgent user requirements, work has been done on identifying clusters of connected branches. The work was carried through in close cooperation between Statistics Denmark and the Ministery of Business and Industry. It was a regrouping of all activity classes into six connected areas, known as *resource areas*, and a residual "horizontal" area consisting of general supporting industries. The seven areas are further broken down into 72 sub-areas, all defined on the basis of the NACE Rev. 1 classes at the 4-digit level. The groups concerned are the following:

1. Foodstuffs, 2. Consumer goods/leisure, 3. Construction/housing, 4. Communications, 5. Transport/utilities, 6. Medical/health and 7. General supporting industries.

Figure 1. Value added in private urban trade, 1993-94, divided by resource area



The resource area *"Communications"* covers the industries which supply communication services, both service industries - such as the media, postal services, telecommunications and computer software and printing and communications equipment, including computers. This resource area is thus crucial to the information society and most of the industries are found in the NAICS information sector. However, it also includes production industries which as suppliers operate on the same basic conditions as the information technology industries.

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[2] NAICS: Agrement no. 18 US Federal Register Vol. 61 No. 103, pp. 26603 ff, 1996

Statistics Denmark has begun a "sorting out exercise" to work out a delimitation by industry of the information technology field, which is different from the communications resource area primarily in relation to its focus on the information *technology* aspect, i.e. it ignores the more traditional information-supplying industries such as printing (NACE 222), postal activities (NACE 6411) and advertising and market research bureaux (NACE 7440).

The delimitation does not altogether coincide with the North American definition of the information sector, since this definition also includes the goods-producing and certain distributive industries as part of the IT complex. Whereas the NAICS attaches greater importance to the production of information and its transformation into a good, the two Danish delimitations are based on the demand element (resource areas) and the technology aspect (information technology area).

Box 1

1. Development, production and distribution of basic elements, consisting of :

Software components	NACE part of 72.20
Cables etc.	NACE 31.3
Electronic components	NACE 31.1, 31.2, 31.4, 32.10
Other basic elements	NACE not yet decided

2. Development, production and distribution of parts and equipment, consisting of:

Applications software	NACE part of 72.20
Hardware-specific applications software	NACE part of 72.20
Computer hardware	NACE 30.01, 30.02, 51.64
Other professional electronic equipment	NACE 31.62,part of 32.20, part of 33.10, 33.20, 33.30, 33.40
Consumer electronics	NACE part of 32.20, 32.30, part of 33.10
Telecommunications equipment	NACE part of 32.20, part of 32.30

3. Development, production and distribution of systems and services, consisting of:

Professional services linked to applications software and computer hardware	NACE 72.10, part of 72.20, 72.50
Professional services linked to hardware-specific software and other electronic hardware	NACE 72.10, part of 72.20, 72.50
Telecommunications transmission services	NACE 64.20,
VANS and VAS	NACE 72.60

The above mentioned elements are all totally related to or have their starting point in the services activities. Further I would like to mention some elements which are of relevance for all activities, but is especially important for the services sector.

4. Conclusion

In this paper we have put forward a number of proposals to be included in the future strategy for services sector statistics in Denmark. In the introduction of these elements we underlined the importance of being user oriented in our statistical production. In the Unit for Service Statistics we are trying to adapt to this attitude as much as possible. This is partly reflected in the relatively large amount of income from service activities, about 5 mio. DKK in 1997, and partly reflected in a number of ad hoc surveys and analysis in which we have participated in the last couple of years. we would like to mention:

1) The development of statistics on new enterprises and entrepreneurs[3]
2) The development of a micro database containing growth enterprises[4]
3) Survey on globalisation, "*From internationalisation to Globalisation*"[5]
4) Survey on innovation and skills
5) The elaboration of statistics on clusters, ie the so-called *resource areas*
6) Detailed analysis of the retail trade in Denmark[6]
7) Detailed analysis of cleaning activities, the socalled "*home services scheme enterprises*"

All these activities have been carried out in co-operation with and financed by users. They reflect some of the urgent and important needs of the users for statistics on the services sector. The experiences learned from these projects are reflected in the elements listed above for the future strategy for service sector statistics in Denmark.

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[3] See Peter Bøegh Nielsen, Kjartan Bjørnsson and Søren leth-Sørensen: Economic and Social Performance of New Enterprises and and Entrepreneurs in the Service Sector in Papers and Final Report, Voorburg Group 10th Meeting on Service Statistics, Voorburg 1995, pp 185-202.

[4] See Kjartan Bjørnsson, Helle Månsson and Peter Bøegh Nielsen: The Use of Register-based Statistics in Micro-Analysis. Employment Qualifications and Growth Enterprises in the Services Sector. Paper to be presented at the Voorburg Group Meeting in Copenhagen 1997

[5] See Mette Müller Jensen and Jesper Michelsen: Globalisation of Service Enterprises. Paper to be presented at the Voorburg Group Meeting in Copenhagen 1997

[6] See Kjartan Bjørnsson, Helle Månsson and Peter Bøegh Nielsen: The Use of Register-based Statistics in Micro-Analysis. Employment Qualifications and Growth Enterprises in the Services Sector. Paper to be presented at the Voorburg Group Meeting in Copenhagen 1997

5. Dynamics of the sector. By this indicator we do not only mean the traditional indicators as growth in share of gross value added or employment but special emphasis should be put on the enterprise demographic data as births, deaths or growth of the individual enterprises over a time period. An illustration of the dynamics of the services sector is the sector's share of annual real births of enterprises in Denmark which is 85% - constituting by far the largest share of all sectors in the Danish economy.

6. Employment. In understanding the job creation process we can not only rely on statistical information on number of persons employed. We need much more detailed information on the qualifications of the employment as proposed in the enlarged employment module. We are fortunate in Denmark to have most of the proposed information in our register-based statistics. But as the education/learning of the employees more and more get the character of a continously on-going process the information in the registers about the formal level of qualifications is not sufficient. It is necessary to collect information on training activities in order to supplement the information on the qualifications of the labour force.

As mentioned above the information technology is also extremely important for the way in which we organise enterprises and production. Information technology makes the process of work a mobile process and breaks the physical links between employees and their place of work. The increasing importance of teleworking needs to be reflected in our statistical programme.

At last we would like to mention two elements which are of a more generel character and now primarily related to the services activities.

7. Globalisation. As the national economies are undergoing a rapid process of globalisation in these years, it is of high priority to cover this issue, also for the services sector, which for a number of activities as it-services are highly globalised. Under this heading we put information about traditonal variables as exports and imports, but especially information about nationality of ownership and cross border relations. Especially the last item seems to be of increasing importance in the form of joint ventures, license agreements or other forms of close co-operation across the national borders.

8. Innovation. In many of the activities within the services sector, especially within the knowledge based activities as it-services or engineering services, but also within the transport activities, an intensive innovation process is ongoing. As a consequence of this process the services sector is now included in the new Community Innovation Survey to be carried out during winter 1997/98. The results and methodological experiences from this survey should be awaited before new actions are taken in this field. But we think that this element also is part of a strategy for statistics on the services sector.