THE CPC AND COMPUTER SERVICES IN FINLAND

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The late 1980s were a period of rapid growth in the Finnish economy. Demand for computer services exceeded supply, pushing up the profit margins and increasing the turnover levels of computer service companies.

For the past two years, however, the demand for computer services has been sluggish because of the deep economic recession. The number of bankruptcies more than doubled from 1990 to 1991. Thus, the fierce competition for market shares has pushed down profit margins and increased unemployment. The situation has also led to a reorganization of computer service companies and of the whole computer service industry.

FINNISH COMPUTER SERVICE COMPANIES

There were 1,300 computer service companies in Finland in 1990. Over 70 per cent of them were small enterprises with less than five employees. The forty biggest companies accounted for more than half the total turnover. Thus, the data on the distribution of revenues rely to a large extent on the answers of large enterprises.

The level of turnover was FIM 6,3 billion in 1990 and is estimated to have fallen somewhat during 1991.

The cost structure (as a percentage of turnover) of Finnish computer service companies in 1990 was as follows:

Personnel costs	49.1%
Materials and supplies	14.4%
Rents and leases	8.6%
Other costs	17.3%
Operating margin	10.6%

A Finnish computer service enterprise is often a unit of a large company in which the production of computer services is concentrated. This means that it mainly produces computer services for the parent company, which operates in a different branch of economic activity.

Another special feature of the Finnish computer service market is that many companies are linked together by shared ownership; for instance, they belong to the same group of companies.

THE PILOT SURVEY

Earlier this year, Statistics Finland conducted a pilot survey of computer service enterprises with reference to the year 1991. Provision of computer services (ISIC 72) was the primary activity of the respondents. The main purpose of the survey was to test the Central Product Classification (CPC) on a small scale, taking into account the proposals that Statistics Canada put forward at the fifth Voorburg Group meeting in 1990. Only the first of the modules of the Canadian model was tested in the Finnish pilot survey. However, some comments will be made on the other modules on the basis of other studies carried out in this field.

The questionnaire was designed in collaboration with the Finnish Computing Service Association. In addition, some companies were visited for further comments.

The questionnaire was sent to all companies with a personnel in excess of 50 and to a sample of enterprises with 20-49 employees, totalling 68 companies. Of the responses, 44 were accepted, accounting for about 50 per cent (FIM 3,0 billion) of total turnover.

The pilot survey was conducted in conjunction with the annual enterprise survey. The enterprises seem to have had no major problems in responding to the survey. The ability and time needed to answer the questions depended heavily on the state of the company's internal accountancy.

We received no direct comments on the product classification. However, many respondents were unable properly to subdivide a proportion of the services they provided. Approx. 3 per cent of revenues on average derived from miscellaneous services the companies could not appropriately classify. Answers were usually accepted as reported by the respondents, even in cases where the figures were said to include elements of some of the company's other services.

In the questionnaire, all the product classes that were thought to create problems were provided with additional explanatory notes.

MODULE I

Section I: COMPUTER SERVICES

CPC 841 Packaged software of own design

- Systems and user tool software

- Application software

No major problems were observed with respect to CPC 841. The distinction between application software and custom software development was unclear to some respondents.

Application software accounted for 6 per cent of total revenues. The corresponding figure for systems and user tool software was only 1 per cent even though nine companies reported that they provided this service. The service was mainly expected to be in the hands of computer hardware manufacturers, i.e. companies outside the scope of this survey.

CPC 842 Professional computer services

- Consultancy related to installation of hardware

One respondent reported hardware consultancy together with systems and technical consulting. Consulting or training is often an integral part of a product class, making it difficult to consider it separately.

- Systems and technical consulting

- Custom software development

About 70 per cent of the respondents provided custom software development services, which was the most common type of service provided. However, custom software development accounted for only 15 per cent of total revenues.

Some companies were unable to make a distinction between custom software development and systems maintenance.

- Programming services

The distinction between custom software development and programming services seemed to create no problems. The explanatory notes stressed that, unlike custom software development services, programming services are generally invoiced on a time basis.

- Computer facilities management

This class accounted for only 1.6 per cent of total revenues. There probably was some confusion between facilities management and data processing and tabulation services.

- Systems maintenance

A typical service provided as a secondary activity. Provided quite frequently (by 57 per cent of the companies), but not an important source of revenues (4.1 per cent).

- Other professional computer services

Separate information was not asked about this class. Because of the many 'other' production classes, this class was included into CPC 849, Other computer services.

CPC 843 Computer processing services

- Data processing and tabulation services

Data processing and tabulation services seem to be the most important production class in Finland, accounting for 28 per cent of revenues. This is strictly in line with the results of the previous Finnish pilot test concerning the year 1989.

The revenues from data processing and tabulation fell, however, far short of the 44 per cent New Zealand[1] reported in its pilot survey. On the other hand, Canadian companies received 10 per cent of their revenues from these services[1].

There are probably several reasons for these national differences.

* The levels and structures of computer services differ, as do the numbers of companies studied.

* Explanatory notes are essential here. Data processing and tabulation services seem to be a 'general-purpose' class in which the respondent readily places revenues from services similar to data processing and tabulation services, such as facilities management services and data entry services.

Statistics Canada reported similar experiences. Data processing and tabulation services may be exceptionally difficult to subdivide into smaller elements.

- Data entry services

Data entry services accounted for about 0.5 per cent of total revenues. A proportion of data entry services are likely to have been included among data processing services.

- Other computer processing services

This class had no significance in the survey.

CPC 844 Data base services

These services are mainly provided by a single company as a secondary activity. Only two companies reported that they provided these services.

CPC 845 Computer repair and maintenance

Computer repair and maintenance accounted for about 4 per cent of total revenues, more than half of which was generated by a single large computer import company[2]. The same company also accounts for a large proportion of computers and software resold (section 2).

A large proportion of computer repair and maintenance services is normally provided by the big computer import companies not considered in this survey.

CPC 849 Other computer services

Less than 3 per cent of total revenues are generated by this class.

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1) Sixth Meeting of the Voorburg Group, Helsinki 1991

2) The company is classified as a computer service company (ISIC 72) because of its high value added proportion in computer repair and maintenance.

Section 2: COMPUTER RELATED GOODS AND SERVICES

- Packaged software resold
- Computer hardware resold

It is common for computer service companies to be engaged in the sale of hardware and software products in addition to the provision of services. These system integrators account for a sizable proportion of revenues. No major problems were observable in the answers on system integrators (in contrast to the experience of New Zealand, for example).

Computer software resold (3.1 per cent) and hardware resold (16.1 per cent) taken together accounted for about one-fifth of total revenues. Additionally, the companies were asked to provide information on their commissions (%) in order to estimate the level of net revenues. Unfortunately, as many companies did not answer the question, there are no reliable data available on this point.

Problems also appeared with respect to sales tax in that some companies reported gross sales including sales tax. This problem should be solved quite easily by better explanatory notes.

In addition, a few companies reported revenues from computer equipment sales under 'Other revenues' (section 3).

- Computer services resold
- Hardware lease and rental
- Network services
- Computer related training

These four categories seem to be of minor importance. The companies experienced no problems in answering questions on them.

It is probable that only a proportion of computer training services is included here because training and consulting are also provided as an integral part of other production classes (see e.g. section 1, CPC 842).

Section 3: REVENUES FROM OTHER SOURCES

Revenues from other sources were insignificant, accounting for 0.7 per cent of the total. Questions were asked about four subclasses according to the Canadian model survey:

- Royalties and patent fees received
- Services to related parties not mentioned above
- Other goods and services
- Operating subsidies.

Only the sales of other goods and services seem to have some importance. Therefore, detailed questions about these services seem irrelevant, at least in Finland.

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MODULES 2-5 AND 10

In 1991, Statistics Finland launched an annual survey concerning income statement and balance sheet data in selected branches of business service, including computer services. The data requested in modules 2-5 and 10 are basically the same. However, the present Finnish data are not detailed enough to meet the requirements of these modules.

As concerns module 3, the bulk of the expenses on materials and supplies (14.4 per cent of turnover) is accounted for by computer hardware and software acquired for reselling. For large companies with more than 100 employees the proportion is about one-fifth of turnover.

MODULES 6 AND 7

The Finnish economy seems to be a very closed one as far as computer services are concerned. The survey launched two years ago revealed moderate imports and exports of computer services.

The greater part computer services trade is conducted by companies engaged in other branches of industry, such as large manufacturing and wholesale companies. To obtain the correct value of imported and exported services, other branches of industry should also be studied in detail.

MODULES 8, 9 AND 11

As concerns module 9, employment numbers are available only at the aggregate level. The male-female distribution can be obtained from other sources.

Information is not available according to module 8, Supplementary questions regarding packaged software revenues, or 11, Software research and development.

CONCLUDING REMARKS

The results of the pilot survey were mainly positive. Essential to a successful survey is a well-designed questionnaire with adequate explanatory notes for minimizing interpretation problems.

The survey did not reveal very many problems of classification or, more precisely, problems of the ability of companies to give adequate answers. Furthermore, the 'system integrator' problem was not observed to the same extent as New Zealand or Canada had reported. In module 1, the main area needing further specification in our experience is CPC 843, Computer processing services.

As the amount of information on domestic computer service markets grows, the focus will to an increasing extent be on international comparisons. This calls for a strict international uniformity of the enterprise populations studied. Computer services are provided as a secondary activity in many other industries, and the classification and incidence of borderline cases may vary from country to country.

In a small country like Finland, the results may be very sensitive to the definition of the target population. For example, the biggest Finnish computer company (excluded here) is a borderline case which sells both computer hardware and computer services, mainly repair and maintenance services. As the unit of study is an enterprise, a decision to

include this company into the population or to exclude it produces quite different figures.

To form a complete picture of the provision of computer services, other economic sectors should also be studied, with special reference to large manufacturing and trading companies. As the next step of further development, suitable price and volume estimates should be devised which could be linked to the National Accounts.

APPENDIX 1

BREAKDOWN OF REVENUES OF COMPUTER SERVICE COMPANIES 1991

1.1 COMPUTER SERVICES	# of companies	revenues %
Packaged software products (of own design) - CPC 841		
- System and user tool software	9	1,1
- Application software	20	6,4
Professional computer services CPC 842		
- Consultancy related to the installation of hardware	10	0,4
- Systems and technical consulting	21	2,1
- Custom software development	31	14,8
- Programming services	24	10
- Computer facilities management services	8	1,6
- Systems maintenance	25	4,1
- Other professional services	-	-
Computer processing services CPC 843		
- Data processing and tabulation services	23	28,2
- Data entry services	6	0,5
- Other computer processing services	3	0,1
Data base services CPC 844	2	1,6
Computer repair and maintenance services CPC 845	13	3,7
Other computer services CPC 849	11	2,6
1.2 COMPUTER RELATED GOODS AND SERVICES		
- Packaged software resold	21	3,1
- Computer hardware resold	25	16,1
- Computer services resold	6	0,1
- Hardware leases and rental	11	0,3
- Network services	11	1,6
- Computer related training	19	0,9
1.3 REVENUES FROM OTHER SOURCES		
- Royalties and patent fees received	2	0
- Services to related parties not included above	4	0
- Other goods and services	8	0,6
- Operating subsidies	2	0
TOTAL	44	100