

**REPORT ON THE IMPLEMENTATION OF THE
MODEL SURVEY OF COMPUTER SERVICES**

VOORBURG GROUP CONFERENCE

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STATISTICS CANADA

INTRODUCTION

1. This paper describes the stage reached by Statistics Canada in the implementation of the computer services model survey and presents the results obtained.

2. Nine of the eleven modules of the model survey are, at this time, partly or completely implemented. The data are collected through the following three surveys:

Annual Survey of Software Development and Computer Services
Research and Development in Canadian Industry
International Transactions in Services

3. The Annual Survey of Software Development and Computer Services collects data relating to the following modules:

Module 1 - Revenues from the provision of goods and services
Module 2 - Goods and services used in the operations
Module 3 - Purchase of goods and services for resale
Module 6 - Exports
Module 8 - Supplementary questions regarding packaged software products revenues
Module 9 - Employment

4. The Research and Development in Canadian Industry Survey collects data relating to module 11 - Software Research and Development.

5. The International Transaction in Services survey collects data relating to module 6 - Exports and module 7 - Imports.

6. Statistics Canada does not collect data for module 5 - Supplementary questions regarding the basis of accounting. Rather, respondents are asked to report revenues on the accrual basis of accounting.

7. Module 4 - Inventories and module 10 - Fixed assets, additions and disposals are not yet implemented for the computer services industry.

8. The results for each implemented module are presented and discussed in the following pages.

RESULTS - MODULE 1. REVENUES FROM THE SALE OF GOODS AND SERVICES

The total estimated revenues generated by the computer services industry in 1989 were **\$ 5.5 billion**. The industry consisted of **9,690** organizations. The surveyed organizations (**596**) have generated **64%** of those revenues and operating revenues accounted for **97.7%** of total revenues. The distribution of operating revenues by type of service (based on the **596** survey records) is as follows:

1.1 REVENUES FROM THE PROVISION OF COMPUTER SERVICES

a. Packaged software products (of own design)	10.5 %
a) Systems and user tools software	NC ¹
b) Application software	NC
B. Professional computer services	
a) Consultancy services related to the installation of hardware	1.4%
b) Systems and technical consulting services	4.8%
c) Custom software development services	10.0%
d) Systems analysis and programming services	5.0%
e) Computer facilities management services	5.1%
f) Systems maintenance services	NC
g) Other professional computer services	8.7%
C. Computer processing services	
a) Data processing and tabulation services	7.7%
b) Data entry services	1.8%
c) Other computer processing services	6.5%
D. Data base services (Electronic information services)	2.2%
E. Computer repair and maintenance services	5.0%
F. Other computer services	NC

1.2. REVENUES FROM THE SALE OF COMPUTER RELATED GOODS AND SERVICES

G. Packaged software (resold)	4.4%
H. Computer hardware sales (resold)	9.9%
I. Computer services (resold)	NC
J. Computer hardware leasing and/or rental services	6.2%
K. Network services	3.2%
L. Computer related training services	1.5%

1.3. REVENUES FROM OTHER SOURCES

M. Royalties and patent fees received	NC
N. Services to related parties not included above (research and development charges, management fees etc.)	1.9%
O. Other goods and services	4.3%
P. Operating subsidies	NC

GRAND TOTAL - OPERATING REVENUES (A to P)	100%
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¹ not collected

COMMENTS - MODULE 1

Data are collected for 18 of the 25 categories proposed in the model survey. There are no major difficulties in the collection of this information; most difficulties encountered in the early stages of the survey (redesigned in 1986) have since been resolved through discussions with respondents.

Items not collected

a) ~~Systems and user tools software and Application software~~ - We currently collect this information (split) for "total packaged software revenue", that is, software of own design (A) and resold software (G). This aggregate is broken down as follows: **51.3%** system software and **48.7%** application software. Packaged software of own design accounts for **70.6%** of total packaged software revenue in this industry. Compliance to the model survey would require a survey redesign.

b) ~~Systems maintenance services~~ - These services are rarely provided as a separate service in Canada. They are typically an integral part of software sales (A & G), computer facilities management contracts (B e) or computer repair and maintenance contracts (E).

c) ~~Other computer services~~ - Thought to be small; the relatively small size of the residual category tends to confirm this assumption.

d) ~~Computer services resold~~ - Thought to be small; the relatively small size of the residual category tends to confirm this assumption.

e) ~~Royalties and patent fees received~~ - Treated as a method of payment for software products. It is therefore covered in software related categories. Compliance to the model survey would require a redesign of the survey.

f) ~~Operating subsidies~~ - Not an important issue in Canada for this industry.

RESULTS - MODULE 2. GOODS AND SERVICES USED IN THE OPERATIONS

The total estimated expenses incurred by the computer services industry in 1989 were **\$5.2 billion**. The surveyed organizations accounted for **56%** of those expenses and operating expenses accounted for **96.3 %** of total expenses.

The distribution of operating expenses (based on 596 reports) is as follows:

A. Wages, salaries and employee benefits	
a) Wages and salaries	45.8%
b) Employee benefits	3.4%
B. Business services	
a) Computer services for own use (CPC 84)	2.5%
b) Professional services - legal, auditing, management consulting, etc. (CPC 86)	1.8%
c) Advertising and sales promotion (CPC 871) *	3.9%
d) Insurance (CPC 812)	0.2%
C. Rental and leasing of machinery (CPC 83) **	3.8%
D. Telecommunication services (CPC 752)	5.3%
E. Materials and supplies for own use	4.1%
a) Operating supplies	NC
b) Office and other supplies	NC
F. Occupancy costs ***	5.9%
a) Rental and leasing of land and buildings (CPC 82)	NC
b) Utilities (CPC 17)	NC
G. Property and other non-commodity indirect taxes	NC
a) Property and school taxes	
b) Permits, licenses and other non-commodity indirect taxes	
H. Royalties and patent fees paid	NC
I. Services from related parties (not included above)	3.4%
J. Depreciation ****	8.0%
K. Other operating, administrative and general expenses	11.9%
GRAND TOTAL - OPERATING EXPENSES	100.0%

Notes:

- * Advertising and sales promotion includes travel and entertainment expenses.
- ** Rental of machinery and equipment covers computer and related equipment only.
- *** Occupancy costs covers depreciation of buildings and leasehold improvement, business, property and school taxes, permits and licences.
- **** Depreciation does not include building depreciation (see occupancy costs).

COMMENTS - MODULE 2

Compliance with the model survey and National Accounts concepts will require a redesign of this section of our survey, especially for variables related to depreciation and non-commodity indirect taxes. It may also be worthwhile to investigate the content of the residual category given its relatively large weight.

Our experience is that respondents show some reluctance to provide this data, mainly because it results in disclosure of profit margins. We have also observed that the industry's cost structure remains fairly stable; there may therefore be a strategic advantage in collecting this information occasionally, for example every 3 or 5 years, rather than annually.

RESULTS - MODULE 3. PURCHASE OF GOODS AND SERVICES FOR RESALE

Data for these variables are available for the surveyed population only. The distribution of the purchase of goods and services for resale is as follows:

A. Computer hardware.	66%
B. Packaged software products	10%
C. Computer services (subcontracting)	NC
D. Other goods and services	24%

COMMENTS - MODULE 3

These data have been especially helpful to classify organizations to the proper industry, that is, to properly distinguish organizations that belong in trade from those that belong to the computer services industry. There have been no particular problems in collecting this data.

RESULTS - MODULE 6. EXPORTS

The total exports of the computer services industry are estimated at **\$ 438 million**, or **7.9%** of the industry's total revenues. The surveyed organizations which provided full details of the breakdown of exports account for more than half of these exports; the break down shown below is based on the exports of these organizations. This detail was collected for the first time in 1989.

COMPUTER SERVICES

A. Packaged software products (of own design) *	46.3%
B. Professional computer services	24.5%
C. Computer processing services	1.3%
D. Data base services (Electronic information services)	NC
E. Computer repair and maintenance services	NC
F. Other computer services	NC
TOTAL COMPUTER SERVICES	72.1%

COMPUTER RELATED GOODS AND SERVICES

G. Packaged software (resold) *	NC
H. Computer hardware (resold)	7.8%
I. Computer hardware rental and/or leasing services	NC
J. Services to related parties not included above	15.0%
K. Other goods and services	5.0%
TOTAL COMPUTER RELATED GOODS AND SERVICES	27.8%

Note * Category A includes category G

COMMENTS - MODULE 6

The categories for which data have been collected are those thought to be most significant in the Canadian context. A breakdown of professional computer services into custom software services and other computer professional services is also collected (9.9% and 14.6% of total exports).

RESULTS - MODULE 7. IMPORTS

Statistics Canada produces an estimate of total imports of computer services by all importers. In 1989, these imports amounted to **\$333 million**.

RESULTS - MODULE 8. SUPPLEMENTARY QUESTIONS REGARDING PACKAGED SOFTWARE PRODUCTS REVENUES

Data for the variables of this module are available for the surveyed organizations only. The data for part A of the module are expressed as a % of the total revenues earned from the sale of packaged software, whether of own design or resold. The data for part B are expressed as a % of the total revenues earned from the sale of any type of software, that is packaged (of own design or resold) or custom designed.

A. Packaged software developed by

a) the organization covered by this report	71.2%
b) a domestic third party	2.9%
c) a foreign third party	9.6%
d) a domestic related party	3.8%
e) a foreign related party	12.5%

B. Proportion of revenues derived from the sale of

a) mini and mainframe software	64.4%
b) microcomputer software	30.5%
c) communication and other software not specific to a) or b)	5.1%

RESULTS - MODULE 9. EMPLOYMENT

Estimates for most of the individual variables of this module are available from two sources. However the cross classification scheme proposed in the model survey has not yet been implemented.

Annual Survey of Software Development and Computer Services

The total estimated number of paid employees in the industry is **61,149**. The surveyed organizations account for **56%** of that total. The vast majority of workers (**93%**) in this industry are employed on a full time basis.

Census of population

Almost half (**48.9%**) of those employed in this industry are in a computing related occupation (as defined in the model survey). **60.3%** of paid employees are males, **39.7%** are females. A greater proportion of self employed are males (**78.7%**).

RESULTS - MODULE 11. SOFTWARE RESEARCH AND DEVELOPMENT

Our survey of Research and Development in Canadian Industry collects a range of variables related to R & D in general, and software R & D. Among these variables, the following are of particular interest in relation to the model survey:

Research and Development expenditures	# of R&D performers	000, 000 \$
Total R & D expenditures by the computer services industry	409	254
Software R & D expenditures by the computer services industry	353	194

DISTRIBUTION OF SOFTWARE R & D EXPENDITURES BY THE COMPUTER SERVICES INDUSTRY

Total current expenditures			Total capital exp	Total
Wages & salaries	Other	Total		
63.8%	25.9%	89.7%	10.3%	100%

Notes

- Based on a subset of responses (259 R&D performers).
- Wages and salaries includes fringe benefits.
- Other current costs includes contracts required to carry out R&D but excludes contracts for R&D work itself.
- Break down of capital expenditure collected but confidential.

SIGNIFICANT SOFTWARE R & D EXPENDITURES PERFORMED IN OTHER SELECTED INDUSTRIES

Industries	# of R&D performers	000 000 \$
Telecommunication and other electronic equipment manufacturing (CSIC 335, part of ISIC 3190, 3210, 3220)	94	425
Architectural, engineering and other technical and scientific services (CSIC 752, ISIC 73 and 742)	53	215
Office, store and other business machine manufacturing (CSIC 336, mainly ISIC 3000)	244	79