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Description of National Innovation Surveys Carried Out, or Foreseen, in 1997-99 in OECD Non-CIS-2 Participants and NESTI Observer Countries

Geneviève Muzart

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DESCRIPTION OF NATIONAL INNOVATION SURVEYS CARRIED OUT, OR FORESEEN, IN 1997-99 IN OECD NON-CIS-2 PARTICIPANTS AND NESTI OBSERVER COUNTRIES

by Geneviève Muzart*

Following the revision of the *Oslo Manual* (1997) and the preparation of the second Community Innovation Survey (CIS-2), a number of OECD and NESTI observer countries have carried out (or are preparing) new innovation surveys. According to national policy needs, these new national innovation surveys may or may not fully follow the *Oslo Manual* methodology and/or the proposed CIS-2 questionnaire prepared by EUROSTAT in co-operation with national experts and the OECD.

The following document is intended to provide the main characteristics of national innovation surveys carried out (or intended to be carried out) in 1997-99 in OECD non-CIS-2 participants and NESTI observer countries. After a summary description of all national innovation surveys (including CIS-2 participants), more detailed information is presented by country for non-CIS-2 participants. This basic information will be helpful in evaluating the extent to which internationally comparable information could be expected from this new round of innovation surveys, from which countries and in which time frame.

Faisant suite à la révision du *Manuel d'Oslo* (1997) et à la préparation de la seconde enquête communautaire sur l'innovation (ECI-2), un certain nombre de pays de l'OCDE et de pays observateurs au groupe ENIST ont mené une nouvelle enquête sur l'innovation (ou sont en train de la préparer). En fonction des besoins de la politique nationale, cette nouvelle enquête peut être ou non tout à fait conforme à la méthodologie du *Manuel d'Oslo* et/ou au questionnaire proposé pour l'ECI-2 mis au point par EUROSTAT en coopération avec les experts nationaux et l'OCDE.

Ce papier a pour objectif de recenser les principales caractéristiques des enquêtes nationales sur l'innovation menées (ou à venir) au cours des années 1997-99 dans les pays de l'OCDE ne participant pas à l'ECI-2 ainsi que dans les pays observateurs au groupe des ENIST. Après un résumé des principales caractéristiques de l'ensemble des enquêtes nationales (y compris ECI-2), une description plus détaillée par pays est présentée pour les enquêtes des pays ne faisant pas partie de l'ECI-2. Ces informations de base devraient permettre d'évaluer quelles catégories de données comparables pourraient ainsi devenir disponibles à partir des résultats de ces enquêtes, pour quels pays et vers quelle date.

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* Economic Analysis and Statistics Division, Directorate for Science, Technology and Industry/Division des analyses économiques et des statistiques, Direction de la science, de la technologie et de l'industrie.

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GENERAL DESCRIPTION OF 1997-99 NATIONAL INNOVATION SURVEYS

I. Purpose of the exercise

Innovation is seen to play a central role within the knowledge-based economy and this has led to greater policy attention being paid to the processes of technological innovation and diffusion by firms. Innovation surveys have been developed in response to the need for reliable and systematic data for the design, monitoring and evaluation of policies aimed at promoting technological innovation. They are an attempt to collect firm-level data on input to and output from innovation which are comparable across countries and over time. Most are based on the *Oslo Manual*[1] methodology.

Innovation surveys have developed very rapidly over the last ten years, thanks to European Commission support for the measurement of innovation and the work of Eurostat in setting up and managing the Community Innovation Survey – CIS.

After a general description of the *Oslo Manual*, the reader will find an overview of the main characteristics of national innovation surveys carried out, or foreseen, in 1997-99 in all OECD and NESTI observer countries, followed by an evaluation of the comparability of national innovation questionnaires and the CIS-2 proposed harmonised questionnaire for non-CIS-2 participants.

II. The *Oslo Manual*

The *Oslo Manual* covers innovation in the business enterprise sector only (manufacturing and services). It deals with innovation at the level of the firm, and considers changes which involve a significant degree of novelty for the firm. It concentrates on **technologically** new or improved **products (**goods and services) and **processes** (TPP) (the novelty or the improvement being based on "objective performance characteristics"), excluding changes in products which provide largely subjective improved customer satisfaction based on personal taste and aesthetic judgement, or derived from following fashions, or brought about largely by marketing. Technologically new or improved products and processes may include those organisational changes necessary for the implementation of the product or process innovation, but do not include purely organisational changes (even it is recognised that purely organisational innovation is widespread and may result in significant improvements in firm performance) since there has been relatively little practical experience on this topic.

Definitions and conventions are proposed in the manual as well as suggestions and recommendations for national and international innovation surveys on measuring different aspects of the innovation process (notably relating to factors influencing TPP innovation, the impact of innovations on the performance of the enterprise) and for the measurement of expenditure on innovation activities. Classifications for use in studies of industrial innovation are recommended or proposed, and guidelines for the harmonisation of innovation survey procedures are given.

1. OECD/EC/Eurostat, *Proposed Guidelines for Collecting and Interpreting Technological Innovation Data – Oslo Manual*, second edition, OECD, Paris, 1997.

III. CIS-2 and 1997-99 national innovation surveys

3.1. CIS-2

Following the revision of the *Oslo Manual*, CIS-2 was prepared by the European Commission. A set of detailed practical guidelines for survey procedures (*on sampling, non-response analysis, processing of data, etc.*) as well as a second harmonised questionnaire were prepared by Eurostat in co-operation with national experts and the OECD, and were proposed as a basis for the second round of innovation surveys at the beginning of 1997.

3.2. National innovation surveys

Countries	• 26 OECD and NESTI observer countries (including ten non-CIS countries) have carried out new innovation surveys during 1997 or 1998. • Two Member countries will do so during 1999 (Greece and Hungary). • Main absentees are the United States and Japan. Both of these countries conducted surveys based on the first edition of the *Oslo Manual* during 1992-93. The United States will be conducting a survey of innovation activities in information technologies, which may take some questions of the CIS.
Industrial activities covered	Three out four countries have carried out innovation surveys on both manufacturing and services.

All the problems have not yet been solved but, compared to previous national innovation surveys, progress has been made in many areas.

Methodology	According to national policy needs, these new national innovation surveys may or may not fully follow the *Oslo Manual* methodology and/or the proposed CIS-2 questionnaire. Summary descriptions of national innovation surveys presented in this document are intended to provide an overview of their overall comparability.
Reference period	The **period covered** by the national surveys remains problematic as it continues to differ across countries. In most countries, the time period is 1994-96, but for two countries (Korea and Italy for the service sector) it was 1993-95, for six countries it was 1995-97 (three CIS: Iceland, Norway, Portugal; and three non-CIS: the Czech Republic, the Slovak Republic and Turkey).
Sample size	• In nearly all countries, the size of the samples were enlarged, which will improve their representativeness. • Many countries, notably eleven CIS countries, have conducted a census of all firms with 100 (or 200) employees or more.

Cut-off points

- The limits for the inclusion of firms according to size are more homogenous among CIS countries (**10 employees** for services and **20** for manufacturing, as recommended), with few exceptions (Germany and Iceland, where the limit is enterprises with five employees; there is no limit in Spain).
- This is less true for other countries: the limits vary from **1 employee** for Australia and Canada, to **5 or 10** for most of other countries, and **50** for Mexico and Russia.
- In consequence, problems of international comparability of results may arise, particularly for small firms.

Response rates

Response rates improved considerably in many countries:

- More than 70% in nearly half of the countries,
- 50-65% in eight other countries,
- But still less than 35% in four countries.

Nevertheless, response rates to difficult questions are often very much lower than the overall response rates to the surveys.

Availability of results

- Results of national innovation surveys are available in almost all countries which carried out their innovation surveys in 1997 or 1998. They will be made available during 1999 in Greece, Hungary and Iceland.
- A number of countries have made available national results at an aggregated level only in national publications and analysis.
- Eurostat plans to publish CIS-2 main results during the first quarter of 1999 (depending on the transmission of data from CIS-2 participating countries to Eurostat).
- On the question of access to detailed results, there remains a problem of confidentiality which needs to be solved on a country-by-country basis.

Table 1 (on the following pages) provides a summary description of national innovation surveys carried out, or foreseen, in 1997-99 in OECD countries, broken down between countries not included in CIS-2, and CIS-2 countries.

Table 1. Overview of national innovation surveys

Country	General comparability with CIS-2[2]	Kind of survey	ross sample size &/or % of total population	Cut-off point	Reference period
Australia	☺/😐	Mandatory sample survey	*Manuf*.: 6 000 *Constr*.: 600 *Serv*: 2 600	*Manuf*.: 1 emp. *Mining*.: 20 *Other* : variable	1.7.94 to 30.6.97
Canada	😐	Mandatory sample survey	*Serv*: 6 150	1 employee	1994-96 or 1996
Czech Republic	☺	Mandatory sample survey	1 100 (30 %)	100 employees	1995-97 or 1997
Hungary	☺	Voluntary pilot survey	*Serv*: 1 000	10 employees	1998
Korea	1st: 😐 2nd: ☺	Voluntary Census>300 emp.s ample<300 emp.	1st: 5 981 2nd: ?	1st: 10 empl. 2nd: ?	1993-95 or 1995 1996-97 or 1997
Japan	Since the innovation survey carried out in 1994,				
Mexico	☺	Voluntary sample survey (interview)	1 527: *Man*=1322; *Serv*=205	50 employees	1994-96 or 1996
New Zealand	Since the innovation survey carried out in 1994,				
Poland	😐	Mandatory survey census >19/49 20/50>sample>5 (see Remarks)	8962 units	*Manufact.*: 5 *Mining*: 50 *Utilities*: 20	1994-96 or 1996
Russia	😐	Mandatory census	25 000	50 employees	1993-95 or 1995 1994-96 or 1996 1995-97 or 1997
Slovak Republic	😐	Voluntary pilot survey	25	Mainly big enterprises	1994-97 or 1997
Switzerland	😐	Voluntary sample survey	*Manuf*.: 2 600 *Constr*.: 600 *Serv*: 2 200	5 employees	1994-96 or 1995
Turkey	☺/😐	Mandatory sample survey	*Manuf*.: 4 305 *Serv*: 1 224	10 employees	1995-97 or 1997
United States	Will be conducting a survey of innovation				

2. For more details see pp. 10-13 and descriptions by country.

in non-CIS countries

Coverage[3]	Response rate	Availability of data	Remarks	Country
Manufacturing: 15-36 *Services*: 65-67, 642, 72 *Agriculture*: 1, 2, 5 *Mining*: 10-14	95%	End June 1998	Questionnaire mailed in August 1997	**Australia**
Services: 6420, 9213, 6519, 6601, 7123, 7140, 7210-7230, 7310, 7320, 7421, 7422	88 %	March 1998, & over 1998 and 1999	Survey of *Manufacturing* planned in 1999	**Canada**
Manufacturing: 15-37 *Mining*: 10-14 *Utilities*: 40, 41 *Construction*: 45	around 60%		The survey is in process and will be closed in October 1998	**Czech Republic**
Manufacturing: - *Services*: 50-99	25 % mini. Expected	Dec. 1999	The survey will be launched end-March 1999.	**Hungary**
Manufacturing: 15-37 *Services*: -	1st: 64.5 % 2nd: ?	1st: Sept.97 2nd: ?	Two surveys were conducted: 1st:based on the *Oslo Manual-1992* 2nd:based on the *Oslo Manual-1997*	**Korea**
no new innovation survey has been planned in Japan.				**Japan**
Manufacturing: 15- 37 *Services*: 642, 65-67, 72	87%	Late Sept. 1997		**Mexico**
no new innovation survey has been planned in New Zealand.				**New Zealand**
Manufacturing: 15-37 *Mining*: 10-14 *Utilities*: 40, 41	80%	Sept. 1997	Census for entrep. over 49 empl. for *Mining & Manuf.* and over 19 empl. for *Utilities*, sample surv. of entrep. 6-49 empl. for *Manuf.*	**Poland**
Manufacturing: 15-37 *Electricity*: 4010	100%	Autumn 1998 for the 1995-97 survey	Three innovation surveys have been carried out, on 1995, 1996 and 1997 respectively	**Russia**
Manufacturing: 19, 21, 23-27, 29, 31, 32, 34, 35.	84 %	Sept. 1998	Survey launched in May 1998. Rather a testing of the questionnaire	**Slovak Republic**
Manufacturing: 15-37 *Services:* private only *Construction*: 45	*Man*.: 34 % *Const*.: 35 % *Serv*.: 32 %	May 1998		**Switzerland**
Manufacturing: 15-37 *Services*: 642, 65-67, 72,	*Man*.: 49 % *Serv*.: 40 %	May 1999	Survey launched in May 1998	**Turkey**
activities and information technologies.				**United States**

3. Based on ISIC Rev. 3 or NACE Rev. 1 codes.

Table 1. Overview of national innovation surveys taking part

Country	General comparability with CIS-2	Kind of survey	Gross sample size No. of entreprises	Cut-off point	Reference period
Austria	☺	Volun. Sample surv. (census > 100 emp.)	*Man*.: 2596 *Serv*.: 1003	10 empl.	1994-96 or 1996
Belgium	☺	Volun. Sample surv. (census > 100 emp.)	*Man*.: 2170 *Serv*.: 1394	*Man*.: 20 empl. *Serv*.: 10 empl.	1994-96 or 1996
Denmark	☺	Voluntary sample survey	*Man*.: 1530 *Serv*.: 1073	10 empl.	1994-96 or 1996
Finland	☺	Voluntary sample survey (census > 100 emp.)	*Man*.: 1687 *Serv*.: 964 *Other*: 500	10 empl.	1994-96 or 1996
France	☺	Mand. Sample surv. (census>*M* 100 emp.) (census>*S* 200 emp.)	*Man*.: 6500 *Serv*.: 4000 *Other*: 1600	*Man*.: 20 empl. *Serv*.: 10 empl.	1994-96 or 1996
Germany	☺	Voluntary sample survey	*Man*.: 7529 *Serv*.: 5951	5 empl.	1994-96 or 1996
Greece	☺	Voluntary survey	*Man*.: 5000 *Serv*.: 1000		1995-97 or 1997
Iceland	☺	Voluntary sample survey	*Man*.: 400 *Serv*.: 300	5 employees	1995-97 or 1997
Ireland	☺	Voluntary sample survey	*Man*.: 1872 *Serv*.: 967	*Man*.: 20 empl. *Serv*.: 10 empl.	1994-96 or 1996
Italy	☺/😐	Mandatory sample survey (census > 200 emp.)	*Man*. 10562 *Serv*.: 6005	20 empl.	1993-95 or 1995
Luxembourg	☺	Voluntary survey *Manufact*.: census *Services*: sample	*Man*.: 319 *Serv*.: 238	10 empl.	1994-96 or 1996
Netherlands	☺	Voluntary survey Census>50 empl. sample<50 empl.	*Man*.: 4616 *Serv*.: 3590 Other: 5200	*Man*.: 10 or 20 empl. *Serv*.: 10 empl.	1994-96 or 1996
Norway	☺	Mand. Sample surv. (census > 100 emp.)	*Man*.: 2600 *Serv*.: 1102	10 empl.	1995-97 or 1997
Portugal	☺	sample survey (census > 200 emp.)	*Man*.: 1531 *Serv*.: 2469	*Man*.: 20 empl. *Serv*.: 10 empl.	1995-97 or 1997
Spain	☺/😐	Mandatory sample survey (census > 200 emp.)	*Man*.: 10453 *Serv*.: -	1 empl.	1994-96 or 1996
Sweden	☺	Voluntary sample survey (census > 250 emp.)	*Man*.: 1040 *Serv*.: 1108	10 empl.	1994-96 or 1996
United Kingdom	☺	Voluntary sample survey	*Man*.: 3778 *Serv*.: 2114	*Man*.: 10 or 20 *Serv*.: 10 empl.	1994-96 or 1996

in the CIS-2 exercise (EU member countries plus Iceland and Norway)

Coverage[4]	Response rate	Availability of data	Remarks	Country
"CIS-2"	*an*.: 41 % *erv*.: 39 %	April 1998		**Austria**
"CIS-2"	*an*.: 64 % *erv*.: 65 %	November 1998		**Belgium**
"CIS-2"	*an*.: 27 % *erv*.: 28 %	November 1998		**Denmark**
"CIS-2"	*an*.: 72 % *erv*.: 71 %	April 1998		**Finland**
"CIS-2" less Serv. 51, 65-67 plus Other	*an*.: 85 % *erv*.: 85 %	November 1998		**France**
"CIS-2"	*an*.: 26 % *erv*.: 22 %	August 1998	Problems of response rate and quality of responses to difficult questions	**Germany**
"CIS-2"	*an*.: *erv*.:		Survey will be launched in November 1998.	**Greece**
Manufact.: 01-45 *Serv*.: 60-64 & 70-74	60% accepted	February 1999	Survey launched in June 1998.	**Iceland**
"CIS-2"	*an*.: 24 % *erv*.: 29 %	June 1998		**Ireland**
Market Serv.: 50-52, 55, 60-67, 70-74	*an*.: 49 % Aug. 1998) *erv*.: 56 %	*Man*.: December 1998 *Serv.:* June 1997	*Man*.: Survey closed Sept. 1998 *Serv.:* Few differences in questions & sampling	**Italy**
"CIS-2"	*an*.: 60 % *erv*.: 81 %	July 1998	Some problems with response rate and quality of response for difficult questions	**Luxembourg**
"CIS-2" plus Other	*an*.: 71 % *erv*.: 74 %	October 1998		**Netherlands**
"CIS-2" plus Other	*an*.} over *erv*.} 90 %	November 1998		**Norway**
"CIS-2"	*50 %* (Sept. 1998)	November 1998	Survey will be closed in October 1998	**Portugal**
Man.: 15-37 *Serv*.: -	*an*.: 78 % *erv*.: -	May 1998	Survey based on a preliminary version of CIS-2 questionnaire	**Spain**
"CIS-2" plus Other	*verall*: 74 % *an*.: 75 % *erv*.: 72 %	June 1998		**Sweden**
"CIS-2" plus Other	*an*.: 42 % *erv*.: 36 %	December 1998		**United Kingdom**

4 "CIS-2" = Manufacturing 15-37; Electricity, Gas and Water supply 40-41; Services 51,60-62, 642, 65-67, 72, 742.

IV. The harmonised questionnaire[5] for CIS-2 and national non-CIS-2 innovation questionnaires

Section I - General information on the enterprise

Part of a group, Significant changes, Number of employees, Turnover, Exports, etc.	This set of questions about the enterprise is often not fully included in the national questionnaires as the population for the innovation survey is based on business registers, thus making possible links with other industrial survey results.

Section II - Scope and impact of technological innovation and innovation activity of the enterprise

Results of innovation activities	Section II begins with **filter questions** to discriminate between non-innovators and innovators. Sub-questions are addressed to innovators to discriminate between creative innovators, which developed product or process innovations by themselves, from imitators, which innovate by adopting new technology developed elsewhere and thus act on the diffusion side of the innovation process. Comparable questions have been included in almost all national questionnaires, except in Russia; sub-questions are less often included.
Impact of innovation activity	This question on **output of innovation activities** is addressed to the manufacturing sector only, and is in the form of *percentages of sales from innovative products*. A comparable question has been included in almost all national questionnaires, except in Australia.
Resources devoted to innovation	**Inputs to innovation** are asked in the form of a YES/NO question with a quantitative evaluation in the case of positive answers. a) By *type of innovation activity* b) on *R&D personnel* c) and a YES/NO question only on *Engagement in R&D* There are often low response rates to the quantitative evaluation of resources devoted to innovation activities.
Government support	This YES/NO question was not retained in Canada and Poland.
Patenting	This YES/NO question was not retained in Korea and Russia.

5. For details, see Annex 1 – CIS-2 Questionnaires for Manufacturing (M) and for Services (S).

Section III - factors influencing innovation activity

The indicators collected are either: *i)* ranked factors on an ordinal scale, running from 1 = not important to 3 = very important, plus a position 0 for not relevant; *ii)* or binary YES/NO data, requiring the respondent to tick the relevant factors.

Objectives of innovation And **Sources of information for innovation**	These first two questions are of the first type (*ranking the importance of factors*). They have been included in all national surveys and, in the majority of cases, are fully comparable**.**
Innovation co-operation	This is a binary-type question, also included in all national surveys and in the majority of cases fully comparable**.**
Factors hampering innovation	This last question is also of the binary type. In most cases, a fairly comparable question has been included in national questionnaires.

Table 2 (on the following pages) provides an overview of comparability[6] between CIS-2 questions[7] and questions included in national innovation questionnaires of countries not included in CIS-2.

More detailed specifications of national innovation surveys carried out in OECD non-CIS countries are then given.

This basic information would help to evaluate how far internationally comparable information could be expected from this new round of innovation surveys, from which country and by when.

6. For CIS countries, please consult Eurostat documentation.

7. For details, see Annex 1 – CIS-2 Questionnaires for Manufacturing (M) and for Services (S).

Table 2. Overview of comparability[8] with CIS-2 questions[9] (non-CIS-2 participants)

	FULLY comparable	FAIRLY comparable	NO comparable question
General information about the enterprise	CZE, HUN, KOR2, MEX	AUS, CAN, KOR1, POL, CHE, RUS, TUR	
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovation activities			
1) Between 1994-96, has your enterprise introduced onto the market any technologically new or improved products?	AUS, CZE, HUN, KOR2, MEX	CAN, KOR1, POL, CHE, TUR	RUS
2 Between 1994-96 has your enterprise introduced any technologically new or improved processes?	AUS, CZE, HUN, KOR2, MEX	CAN, KOR1, POL, CHE, TUR	RUS
3 Between 1994-96, did your enterprise have unsuccessful or not yet completed projects to develop or introduce technologically new or improved products or processes?	AUS, CAN, CZE, HUN, KOR2, MEX, TUR	KOR1	POL, CHE, RUS
Impact of innovation activity			
4. Turnover in 1996 due to technologically new or improved products to your enterprise	AN, CZE, HUN, KOR1&2, MEX CHE, RUS, TUR	POL	AUS
5. Turnover in 1996 due to technologically new or improved products also new to your enterprise's market	CZE, HUN, KOR1&2, MEX	CHE	AUS, CAN, POL, RUS, TUR
Resources devoted to innovation activities			
6. Resources devoted to innovation activities in 1996			
a) Did your enterprise engage in the following innovation activities in 1996? *if yes, please estimate expenditure involved*	AUS, CZE, HUN, KOR2, MEX, RUS, TUR	CAN, KOR1, POL, CHE	

8. For CIS countries, please consult Eurostat documentation.

9. For details, see Annex 1 - CIS-2 Questionnaires for Manufacturing (M) and for Services (S).

Table 2. Overview of comparability[10] with CIS-2 questions[11] (non-CIS-2 participants) *(cont'd)*

	FULLY comparable	**FAIRLY comparable**	**NO comparable question**
b) R&D personnel within the enterprise in 1996 (in FTE)	HUN, KOR2, MEX, CZE, CHE	KOR1	AUS, CAN, POL, RUS, TUR
c) Did your enterprise engage in R&D between 1994 and 1996?	AUS, CZE, HUN, MEX, RUS, TUR	CAN, KOR1&2, POL, CHE	
Government support *7. Did your enterprise receive any government support (money allocation) for innovation activities in 1996? (loans including a subsidy element, grants)?*	HUN, KOR1&2, MEX, CZE, RUS, TUR	AUS, CHE	CAN, POL
Patents *8. Did your enterprise apply for at least one patent between 1994 and 1996 in any country?*	AUS, CAN, CZE, HUN, KOR2, MEX, CHE, TUR	POL,	KOR1, RUS
Factors influencing innovation activity 9. Objectives of innovation between 1994 and 1996	AUS, CAN, CZE, HUN, KOR1&2, MEX, CHE, RUS, TUR	POL	
10. Sources of information for innovation between 1994 and 1996	AUS, CZE, HUN, KOR1&2, MEX, TUR	CAN, POL, CHE, RUS	
11. Innovation co-operation between 1994 and 1996 *Did your enterprise have any co-operation arrangements on innovation activities with other enterprises or institutions in 1994-1996?*	AUS, CAN, CZE, HUN, KOR1&2, MEX, CHE, TUR	POL, RUS	
12. Factors hampering innovation *a) Has at least one innovation project in 1994-1996 been: seriously delayed, abolished, not even started*	AUS, CZE, HUN, MEX	CAN, KOR1, CHE	KOR2, POL, RUS, TUR
b) If yes on at least one question, tick the relevant factors in the respective columns	CZE, HUN, KOR2, MEX, TUR	AUS, CAN, KOR1, POL, CHE, RUS	

10. For CIS countries, please consult Eurostat documentation.

11. For details, see Annex 1 - CIS-2 Questionnaires for Manufacturing (M) and for Services (S).

AUSTRALIA

1. Agency

Australian Bureau of Statistics – ABS

2. Population, coverage and implementation

2.1. Industrial sectors covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes)

Manufacturing:	ISIC Rev. 3, 15 to 36
Services:	*Telecommunications & information technology:* ISIC Rev. 3, 642, 72
	Finance & insurance: ISIC Rev. 3, 65-67
Other (specify):	*Agriculture, etc.:* ISIC Rev. 3, 1, 2, 5
	Mining: ISIC Rev. 3, 10 to 14

2.2. The survey

Kind of survey:	Sample mandatory survey.
Statistical unit:	Management unit, the enterprise.
Cut-off-point:	*Manufacturing*: 1 employee ; Other: variable, for example *Mining*: 20 employees.
Total number of firms in the industrial sectors covered:	*Manufacturing*: 55 000 ; *Services: ..? Agriculture, etc.*: ..? *Mining*: *..?*
Gross sample size:	*Manufacturing*: 6 000 (of the estimated 55 000 manufacturing businesses) ; *Mining*: 300 ; *Agriculture*: 2 500 ; *IT*: 1 500.
Sample description:	Stratified random sample by industry, size and location.
Survey method:	Postal survey.
Follow up:	Two mail reminders followed by phone calls.
Combination with other survey:	Yes.
If so, which?	Manufacturing technology.
Response rate(s):	95%.
Treatment of non-responses:	Mean imputation.

3. Questionnaire(s)

3.1. Definitions used

Basically, *Oslo Manual 1997* definitions.

3.2. Reference period

1 July 1994 to 30 June 1997.

3.3. Comparability with CIS-2 questions

	Fully	Fairly	None or not at all
General information about the enterprise		😐	
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*	☺		
• *Question 2.(M)*	☺		
• *Question 3.(M) / 2.(S)*	☺		
Impact of innovation activity for manufacturing only:			
• *Question 4.(M)*			☹
• *Question 5.(M)*			☹
Resources devoted to innovation activity:			
• *Question 6.(M) / 3.(S)*			
a) By innovation activity	☺		
b) R&D personnel			☹
c) Engagement in R&D	☺		
Government support:			
• *Question 7.(M) / 4.(S)*		😐	
Patents:			
• *Question 8.(M) / 5.(S)*	☺		
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M) / 6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M) / 7.(S)*	☺		
Innovation co-operation:			
• *Question 11.(M) / 8.(S)*	☺		
Factors hampering innovation:			
• *Question 12.(M) / 9.(S)*			
a) Project delayed? Abolished? Not started?	☺		
b) Hampering factors		😐	

3.4. Additional question(s) in the national innovation survey

The following items are included in the survey:

- Organisational/managerial innovation.
- Abandoned innovations.
- Business strategies.
- Impacts on business activities.
- Innovation capabilities.
- Source of funds.
- Case study.
- Use of advanced technologies.

4. Timing

Start mailing the questionnaire:	Mid-August 1997
Finish collecting the data by (due date):	End September 1997
Availability of results:	
a) First results:	April/May 1998
b) Final results:	End June 1998

5. Remarks

The experience gained with this second IS will be used to develop some aspects of the *Oslo Manual*.

6. Contact person(s) for information on innovation survey

Name: Mr. Bill Pattinson or Mr. John Ovington

Address: Australian Bureau of Statistics
PO Box 10
BELCONNEN
ACT2616 CANBERRA
Australia

Phone: +06-25 25 019 Fax: +06-25 27 004 E-mail: bill.pattinson@abs.gov.au
+06-25 25 189 john.ovington@abs.gov.au

7. Publications, papers

"Innovation in Australia", from Bill Pattinson, ABS, paper presented at the OECD Workshop on "New Science and Technology Indicators for the Knowledge-based Economy: Development Issues", Canberra, 26-28 November 1998.

CANADA

1. Agency

Statistics Canada.

2. Population, coverage and implementation

2.1. Industrial sectors covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes)

Manufacturing:	Survey of manufacturing planned in 1999.
Services:	Telecommunications, selected finance and insurance, and selected business services (software developers and computer service providers, consulting engineering and scientific and technical services); the approximate corresponding ISIC codes are 6420, 9213, 6519, 6601, 7123, 7140, 7210 to 7230, 7310, 7320, 7421, 7422.

2.2. The survey

Kind of survey:	Mandatory sample survey; census for some industries.
Statistical unit:	Company or enterprise; in some industries, establishment.
Cut-off-point:	One employee.
Total number of firms in the industrial sectors covered:	*Services:* 22 500
Gross sample size:	6 150
Sample description:	*Origin and coverage of the frame*: *Sampling method used*: Stratified by revenue and by five geographic regions; take-all for large firms and take-some for smaller firms with the constraint that all R&D performers which applied for tax incentive are selected.
Survey method:	Mostly postal survey, partly phone interviews.
Follow up:	Firms not responding by the deadline were reminded three times; special arrangements were made to collect data from very large enterprises.
Combination with other survey:	No.
Response rate(s):	88%
Response analysis:	
Treatment of non-responses:	Non-responses will be imputed.

3. Questionnaire(s)

3.1. Definitions used

Oslo Manual definitions, minor divergences to adapt to the Canadian Services' context.

3.2. Reference period

1994-96 or 1996.

3.3. Comparability with the CIS-2 questionnaire

	Fully	Fairly	None or not at all
General information about the enterprise		😐	
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*		😐	
• *Question 2.(M)*		😐	
• *Question 3.(M)/2.(S)*	☺		
Impact of innovation activity:			
• *Question 4.(M)*	☺		
• *Question 5.(M)*			☹
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity		😐	
b) R&D personnel			☹
c) Engagement in R&D		😐	
Government support:			
• *Question 7.(M)/4.(S)*			☹
Patents:			
• *Question 8.(M)/5.(S)*	☺		
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*		😐	
Innovation co-operation:			
• *Question 11.(M)/8.(S)*	☺		
Factors hampering innovation:			
• *Question 12.(M)/9.(S)*			
a) Project delayed? Abolished? Not started?		😐	
b) Hampering factors		😐	

3.4. Additional question(s) in the national innovation survey

The following items are included in the survey (Numbers in parentheses refer to the question number in the national innovation survey):

- Use of Internet (1.9-12).
- Organisational changes (2A, 23).
- Frequency with which new products replace old products (2B, 27a).
- Frequency with which innovation is introduced (2B, 30).
- Relationship between innovation and selected technologies (2D, 33).
- Time elapsed between the start of activity and commercialisation of innovation (2G, 39).
- Impact of innovation on exports (2B, 29).
- Employment (2G, 44).
- Skills (2G, 45).

4. Timing

Start mailing the questionnaire:	February 1997
Finish collecting the data by (due date):	End May 1997
Availability of results:	
a) First results:	Released March 1998
b) Final results:	Will be released in segments over 1998 and 1999

5. Contact person(s) for information on innovation survey

Name: Daood Hamdani

Address: Chief, Science and Technology Redesign Project
Statistics Canada
R.H. Coats Building, 7-A
Ottawa K1A OT6
Canada

Phone: +1-613-951 3490 Fax: +1-613-951 9920 E-mail: hamddao@statcan.ca

6. Publications, papers

- "Survey of Innovation: Collection Procedure Manual".
- "Survey of Innovation: Answer Key".
- "Innovation in Dynamic service Industries", Statistics Canada, December 1998, Catalogue No. 88-516-XIE.

CZECH REPUBLIC

1. Agency

Czech Statistical Office – CSÚ.

2. Population, coverage and implementation

2.1. Industrial sectors covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes)

Manufacturing:	ISIC Rev. 3, 15 to 37
Services:	--
Mining:	ISIC Rev. 3, 10 to14
Electricity:	ISIC Rev. 3, 4010
Construction:	ISIC Rev. 3, 45

2.2. The survey

Kind of survey:	Mandatory sample survey.
Statistical unit:	The enterprise.
Cut-off-point:	100 employees.
Total number of firms in the industrial sectors covered:	*Manufacturing: ? Mining:* ? *Electricity: ? Construction: ?*
Gross sample size:	1 100 enterprises were surveyed.
Sample description:	30% of enterprises with 100 or more employees. Enterprises with government support were selected.
Survey method:	Postal survey.
Follow up:	
Combination with other survey:	No.
Response rate(s):	Around 60% by end September 1998.
Treatment of non-responses:	No.

3. Questionnaire(s)

3.1. Definitions used

No divergence from the *Oslo Manual* definitions.

3.2. Reference period

1995-97 or 1997.

3.3. Comparability with the CIS-2 questionnaire

	Fully	Fairly	None or not at all
General information about the enterprise	☺		
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovation activities:			
• *Question 1.*	☺		
• *Question 2.(M)*	☺		
• *Question 3.(M)/2.(S)*	☺		
Impact of innovation activity:			
• *Question 4.(M)*	☺		
• *Question 5.(M)*	☺		
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity	☺		
b) R&D personnel	☺		
c) Engagement in R&D	☺		
Government support:			
• *Question 7.(M)/4.(S)*	☺		
Patents: • *Question 8.(M)/5.(S)*	☺		
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*	☺		
Innovation co-operation:			
• *Question 11.(M)/8.(S)*	☺		
Factors hampering innovation:			
• *Question 12.(M)/9.(S)*			
a) Project delayed? Abolished? Not started?	☺		
b) Hampering factors	☺		

3.4. Additional question(s) in the national innovation survey

In accordance with the *Oslo Manual 1992*.

4. Timing

Start mailing the questionnaire:	July 1998
Finish collecting the data by (due date):	Around November 1998
Availability of results:	
a) First results:	
b) Final results:	

5. Contact person(s) for information on innovation survey

Name: Helena GLATZOVÁ

Address: Czech Statistical Office
Sokolovská 142
18604 PRAHA 8
Czech Republic

Phone: + 422-66 04 21 26/23 49 Fax: + 422-86 22 18 E-mail: glatzova@gw.czso.cz

6. Publications, papers

HUNGARY

1. Agency

Innovation Research Centre (IKU), Budapest.

2. Population, coverage and implementation

2.1 Sectors of industrial activities covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes)

Services:	50-99
Financial intermediation (banks, exchange, insurance)	65-67
Wholesale and retail trade (excluding motor vehicle repair)	50-52
Communications	64
Computer and related activities	72
Research and development	73
Engineering and other technical activities(excluding architectural activities)	742

2.2 The survey

Kind of survey:	Voluntary pilot survey.
Statistical unit:	
Cut-off-point:	10
Total number of firms in the industrial sectors covered	*Services*: differs by sectors of services.
Gross sample size:	1 000
Sample description:	*Origin and coverage of the frame*:
	Sampling method used:
Survey method:	Postal survey.
Follow up:	Face-to-face interviews and phone calls.
Combination with other survey:	No.
(If so, which?):	
Response rate(s):	Minimum 25%.
Response analysis:	To be decided.
Treatment of non responses:	--

3. Questionnaire(s)

3.1. Definitions used

As in the *Oslo Manual*.

3.2. Reference period

1998.

3.3. Comparability with the CIS-2 questionnaire

	Fully	Fairly	None or not at all
General information about the enterprise	☺		
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*	☺		
• *Question 2.(M)*	☺		
• *Question 3.(M)/2.(S)*	☺		
Impact of innovation activity:			
• *Question 4.(M)*	☺		
• *Question 5.(M)*	☺		
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity	☺		
b) R&D personnel	☺		
c) Engagement in R&D	☺		
Government support:			
• *Question 7.(M)/4.(S)*	☺		
Patents:			
• *Question 8.(M)/5.(S)*	☺		
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*	☺		
Innovation co-operation:			
• *Question 11.(M)/8.(S)*	☺		
Factors hampering innovation:			
• *Question 12.(M)/9.(S)*			
a) Project delayed? Abolished? Not started?	☺		
b) Hampering factors	☺		

3.4. Additional question(s) in the national innovation survey

Other questions of national policy interest will be included.

4. Timing

Start mailing the questionnaire:	30 March 1999
Finish collecting the data by (due date):	15 June1999
Availability of results:	
a) First results:	31 October 1999
b) Final results:	31 December 1999

5. Remarks

Some additional questions will be included. A decision to carry out an innovation survey of the Hungarian manufacturing sector is subordinated to the need to obtain financial support. The wording of the questions differs by services sectors (adapting to the logic of Hungarian language and accumulated knowledge of targeted people).

6. Contact person(s) for information on innovation survey

Name: Dr. Annamária Inzelt

Address: IKU, Innovation Research Centre
Múzeum u. 17
H-1088 BUDAPEST
Hungary

Phone: (36-1) 318 5674 Fax: (36-1) 338 2438 E-mail: ainzelt@iku.omikk.hu

7. Publications, papers

Interim reports, final report.

KOREA

1. Agency

Science and Technology Policy Institute – STEPI.

2. Population, coverage and implementation

2.1. Industrial sectors covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes)

Manufacturing:	ISIC Rev. 3, 15 to 37
Services:	--

2.2. The survey

Kind of survey:	Voluntary survey. Census for firms with 300 employees and over, sample survey for firms with less 300 employees.
Statistical unit:	The enterprise.
Cut-off-point:	10 employees.
Total number of firms in the industrial sectors covered:	*Manufacturing: 31 771*
Gross sample size:	5 981
Sample description:	The whole population of firms with 300 employees and over, sample survey for firms with under 300 employees (25 085 firms) using Neyman optimal allocation method.
Survey method:	Postal survey.
Follow up:	Telephone calls.
Combination with other survey:	No.
Response rate(s):	64.5%
Treatment of non-responses:	None.

3. Questionnaire(s)

3.1. Definitions used

According to the first edition of the *Oslo Manual* for the first survey, and according to the revised *Oslo Manual* for the second one.

3.2. Reference period

First national innovation survey: 1993-95 or 1995 ;
Second national innovation survey: 1996-97 or 1997.

3.3. Comparability with the CIS-2 questionnaire

3.3.1. First national innovation survey

	Fully	Fairly	None or not at all
General information about the enterprise		😐	
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*		😐	
• *Question 2.(M)*		😐	
• *Question 3.(M)/2.(S)*		😐	
Impact of innovation activity:			
• *Question 4.(M)*	☺		
• *Question 5.(M)*	☺		
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity		😐	
b) R&D personnel		😐	
c) Engagement in R&D		😐	
Government support:			
• *Question 7.(M)/4.(S)*	☺		
Patents:			
• *Question 8.(M)/5.(S)*			☹
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*	☺		
Innovation co-operation:			
• *Question 11.(M)/8.(S)*	☺		
Factors hampering innovation:			
• *Question 12.(M)/9.(S)*			
a) Project delayed? Abolished? Not started?		😐	
b) Hampering factors		😐	

3.3.2. Second national innovation survey

	Fully	Fairly	None or not at all
General information about the enterprise	☺		
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*	☺		
• *Question 2.(M)*	☺		
• *Question 3.(M)/2.(S)*	☺		
Impact of innovation activity:			
• *Question 4.(M)*	☺		
• *Question 5.(M)*	☺		
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity	☺		
b) R&D personnel	☺		
c) Engagement in R&D		😐	
Government support:			
• *Question 7.(M)/4.(S)*	☺		
Patents:			
• *Question 8.(M)/5.(S)*	☺		
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*	☺		
Innovation co-operation:			
• *Question 11.(M)/8.(S)*	☺		
Factors hampering innovation:			
• *Question 12.(M)/9.(S)*			
a) Project delayed? Abolished? Not started?			☹
b) Hampering factors	☺		

3.4. Additional question(s) in the national innovation survey

4. Timing

4.1. First innovation survey

Start mailing the questionnaire:	July 1996
Finish collecting the data by (due date):	May 1997
Availability of results:	
a) First results:	End July 1997
b) Final results:	End September 1997

4.1. Second innovation survey

Start mailing the questionnaire:	May 1998
Finish collecting the data by (due date):	
Availability of results:	
a) First results:	
b) Final results:	

5. Remarks

The first Korean innovation survey is based on the first edition of the *Oslo Manual (1992).*
The second Korean innovation survey is based on the revised *Oslo Manual (1997).*

6. Contact person(s) for information on innovation survey

Name: Dr. Jing Gyu Jang or Dr. Yong Soo Kwon

Address: STEPI
P.O. Box 255 – Cheongryang
SEOUL 130-650
Korea

Phone: (82-2) 250 3032
Fax: (82-2) 253 8678 / 8671
E-mail: jgjang@ stepimail.stepi.re.kr

Phone: (82-2) 250 3045
Fax: (82-2) 253 8678
E-mail: yskwon@stepimail.stepi.re.kr

7. Publications, papers

"Outline of the Korean National Innovation Survey", paper circulated for information at the NESTI meeting, OECD, Paris, 15-16 June 1998.

MEXICO

1. Agency

Consejo Nacional de Ciencia y Tecnología – CONACYT.

2. Population, coverage and implementation

2.1. Industrial sectors covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes)

Manufacturing: ISIC Rev. 3, 15 to 37

Services: ISIC Rev. 3, 642, 65 to 67, 72

2.2 The survey

Kind of survey: Voluntary sample survey.

Statistical unit: The enterprise.

Cut-off-point: 50 employees.

Total number of firms in the industrial sectors covered: *Manufacturing: ? Services: ?*

Gross sample size: 1 527 enterprises: *Manufacturing: 1 322; Services: 205*.

Sample description: Sampling stratified by industrial sector and number of employees; 300 of the 500 most important companies were considered, and the more innovative manufacturing activities were selected using as a criteria the greater spending on R&D together with the importance of the value of their production in the total. The sample stratification was as follows:

Size	Percentage	Number of firms
50-100	41%	542
101-250	32%	426
over 250	27%	354
All	100%	1 322

Survey method: Direct interviews.

Follow up:

Combination with other survey: No.

Response rate(s): 87%

Treatment of non responses: No.

3. Questionnaire(s)

3.1. Definitions used

As in the *Oslo Manual*.

3.2. Reference period

1994-96 or 1996.

3.3. Comparability with the CIS-2 questionnaire

	Fully	Fairly	None or not at all
General information about the enterprise	☺		
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*	☺		
• *Question 2.(M)*	☺		
• *Question 3.(M)/2.(S)*	☺		
Impact of innovation activity:			
• *Question 5.(M)*	☺		
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity	☺		
b) R&D personnel	☺		
c) Engagement in R&D	☺		
Government support:			
• *Question 7.(M)/4.(S)*	☺		
Patents:			
• *Question 8.(M)/5.(S)*	☺		
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*	☺		
Innovation co-operation:			
• *Question 11.(M)/8.(S)*	☺		
Factors hampering innovation:			
• *Question 12.(M)/9.(S)*			
a) Project delayed? Abolished? Not started?	☺		
b) Hampering factors	☺		

3.4. Additional question(s) in the national innovation survey

Under "General information about the enterprise", the three main products and the market share of the main product are asked for. A description of the main innovation of the firm is asked for on an additional sheet.

4. Timing

Start mailing the questionnaire:	Mid-June 1997
Finish collecting the data by (due date):	Mid-August 1997
Availability of results:	
a) First results:	Late August 1997
b) Final results:	Late September 1997

5. Remarks

After testing both questionnaires with a pilot survey, the final version has been established and a full survey launched.

As stated in a preliminary report by CONACYT: "The results were weighted to replicate the original distribution of the included activity classes, but the effects of the sample design persist and it also explains the high rate of innovative behaviour in the interviewed companies. Therefore, the results correspond to the companies included in the sample."

6. Contact person(s) for information on innovation survey

Name: Mr. Ruben Ventura / Ms. Beatriz Romo de Vivar

Address: CONACYT
Av. Constituyentes No. 1046, 3er piso
Col. Lomas Altas
Del. M. Hidalgo
C.P. 11950 MÉXICO, D.F.
Mexico

Phone: (525) 327.7400 Fax: (525) 327-7593 E-mail: bromov@buzon.main.conacyt.mx

7. Publications, papers

"Mexico: Report of National Survey on Innovation in Manufacturing Sector, 1997" (preliminary version), paper presented at the NESTI meeting, OECD, Paris, 15-16 June 1998.

POLAND

1. Agency

Central Statistical Office.

2. Population, coverage and implementation

2.1 Industrial sectors covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes)

Manufacturing:	ISIC Rev. 3 or NACE Rev. 1, 15 to 37
Services:	--
Other (specify):	*Mining*: ISIC Rev. 3, 10 to 14 *Utilities*: ISIC Rev. 3, 40, 41

2.2 The survey

Kind of survey:	Mandatory surveys. Census for enterprises of 20/50 or more employees; sample survey for enterprises of 6-19/49 employees (see sample survey description below).
Statistical unit:	The enterprise.
Cut-off-point:	*Manufacturing:* Five employees; *Mining*: 50 employees; *Utilities*: 20 employees.
Total number of firms in the industrial sectors covered:	*Manufacturing: ? Services: ? Mining*: ? *Utilities*: ?
Gross sample size:	8 962 units.
Sample description:	*Origin & coverage of the frame*: *Sampling method used*: *Manufacturing*: all enterprises with 50 employees or more plus a sample of enterprises with six to 50 employees; *Mining*: all enterprises with 50 employees or more; *Utilities:* all enterprises with 20 employees or more.
Survey method:	Postal survey.
Follow up:	Phone reminders.
Combination with other survey:	No.
Response rate(s):	80%
Response analysis:	
Treatment of non responses:	

3. Questionnaire(s)

3.1. Definitions used

No divergence from the *Oslo Manual* definitions (lack of selected examples of innovation and other changes not regarded as innovation).

3.2. Reference period

1994-96 or 1996.

3.3. Comparability with the CIS-2 questionnaire

	Fully	Fairly	None or not at all
General information about the enterprise		😐	
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*		😐	
• *Question 2.(M)*		😐	
• *Question 3.(M)/2.(S)*			☹
Impact of innovation activity:			
• *Question 4.(M)*		😐	
• *Question 5.(M)*			☹
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity		😐	
b) R&D personnel			☹
c) Engagement in R&D		😐	
Government support:			
• *Question 7.(M)/4.(S)*			☹
Patents:			
• *Question 8.(M)/5.(S)*		😐	
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*		😐	
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*		😐	
Innovation co-operation:			
• *Question 11.(M)/8.(S)*		😐	
Factors hampering innovation:			
• *Question 12.(M)/9.(S)*			
a) Project delayed? Abolished? Not started?			☹
b) Hampering factors		😐	

3.4. Additional question(s) in the national innovation survey

Questions on the following matters have been added:

- Acquisition/transfer of technology.
- Implementation of a quality standard ISO 9000.
- Means of automation.
- Use of foreign technological developments (licences, franchising, etc.).
- Methods for maintaining and increasing competitiveness of product innovations during 1994-96 (patents, secrecy, etc.).
- Exports of new and improved products.

4. Timing

Start mailing the questionnaire:	December 1996
Finish collecting the data by (due date):	February 1997
Availability of results:	
a) First results:	June 1997
b) Final results:	September 1997

5. Remarks

General information on the enterprise (number of employees, sales, exports, etc.) is derived from other sources, including the statistical business register of the country.

6. Contact person(s) for information on innovation survey

1. Name: Ms. Elzbieta Dmowska

   Phone: (+48-22) 608 37 22 Fax: (+48-22) 608 38 82 E-mail: E.Dmowska@stat.gov.pl

2. Name: Ms. Grazyna Niedbalska

   Phone: (+48-22) 608 3739 Fax: (+48-22) 608 38 82 E-mail: G.Niedbalska@stat.gov.pl

Address: GUS – Central Statistical Office of Poland
Al. Niepodleglosci 208
00-925 WARSAW
Poland

7. Publications, papers

- "Raport o stanie nauki i techniki w Polsce" – *Report on Science and Technology in Poland*, GUS, Warszawa (in preparation).
- "Dzialalnosc innowacyjna przedsiebiorstw przemyslowych w latach 1994-1996" – *Innovation Activities of Polish Industrial Enterprises in the Years 1994-1996*, GUS, Warszawa, 1998.
- "Polish Innovation Surveys – The Present Situation", analysis of results and plans for the future. Paper presented at the NATO Advanced Research Workshop 'Quantitative Studies for S&T Policy in Transition Economies', 23-25 October 1997, Moscow, Russia, Session V: Innovation Surveys.

RUSSIA

1. Agency

Centre for Science Research and Statistics.

2. Population, coverage and implementation

2.1 Industrial sectors covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes):

Manufacturing:	Yes.
Services:	--
Other (specify):	Electricity (ISIC Rev. 3, 4010)

2.2 The survey

Kind of survey:	Census. Mandatory survey.
Statistical unit:	The enterprise.
Cut-off-point:	50 employees.
Total number of firms in the industrial sectors covered:	*Manufacturing* + Electricity*:* 25 000 enterprises?
Gross sample size:	25 000 enterprises.
Sample description:	*Origin and coverage of the frame*: Industrial census.
Survey method:	Postal survey.
Follow up:	
Combination with other survey:	No.
Response rate(s):	*Manufacturing*: 100%.

3. Questionnaire(s)

There are no major differences in national questionnaires used according to the industrial sector (manufacturing or utilities) surveyed.

3.1. Definitions used

No divergence from the *Oslo Manual* definitions.

3.2. Reference period

Three annual innovation surveys have been carried out for the years 1993-95 or 1995, 1994-96 or 1996 and 1995-97 or 1997.

3.3. Comparability with the CIS-2 questionnaire

	Fully	Fairly	None or not at all
General information about the enterprise		😐	
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*			☹
• *Question 2.(M)*			☹
• *Question 3.(M)/2.(S)*			☹
Impact of innovation activity:			
• *Question 4.(M)*	☺		
• *Question 5.(M)*			☹
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity	☺		
b) R&D personnel			☹
c) Engagement in R&D	☺		
Government support:			
• *Question 7.(M)/4.(S)*	☺		
Patents:			
• *Question 8.(M)/5.(S)*			☹
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*		😐	
Innovation co-operation:			
• *Question 11.(M)/8.(S)*		😐	
Factors hampering innovation:			
• *Question 12.(M)/9.(S)*			
a) Project delayed? Abolished? Not started?			☹
b) Hampering factors		😐	

3.4. Additional question(s) in the national innovation survey

The following items are included in the survey:

- Innovation expenditure by type of innovation (product *versus* process).
- Breakdown of current and capital costs.
- Technology exchange.

4. Timing

Start mailing the questionnaire:	April 1998 for the 1995-97 survey
Finish collecting the data by (due date):	Summer 1998 for the 1995-97 survey
Availability of results:	
a) First results:	Autumn 1998 for the 1995-97 survey
b) Final results:	

5. Contact person(s) for information on innovation survey

Name: Leonid Gokhberg

Address: 11, Tverskaya Str.
MOSCOW 103905
Russia

Phone: +(7-095)229 1662 Fax: +(7-095)924 2828 E-mail: gokhberg@minstp.ru

6. Publications, papers

"Technological Innovation in Russia", CSRS, Moscow, 1998.

SLOVAK REPUBLIC

Please note that the information below relates only to the testing of the innovation questionnaire which was carried out during May and September 1998.

There will be a regular innovation survey (in 2000) for 1999, which will cover approximately 500 selected organisations.

1. Agency

Statistical Office of the Slovak Republic (SOSR).

2. Population, coverage and implementation

2.1. Industrial sectors covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes)

Manufacturing:	The following industries of ISIC Rev. 3 were surveyed: 19, 21, 23, 24, 25, 26, 27, 29, 31, 32, 34, 35.
Services:	--
Other (specify):	--

2.2. The survey

Kind of survey:	Pilot survey (test of the innovation questionnaire).
Statistical unit:	The enterprise.
Cut-off-point:	?
Total number of firms in the industrial sectors covered:	*Manufacturing: ?*
Gross sample size:	25 enterprises.
Sample description:	*Origin and coverage of the frame*: *Sampling method used*: mainly big enterprises according to gross production and/or value added.
Survey method:	Postal survey and personal contacts to ensure the highest reliability of the data obtained.
Follow up:	-
Combination with other survey: If so, which?	No.
Response rate(s):	21 completed questionnaires were returned, *i.e.* the response rate was 84%.
Response analysis:	--
Treatment of non responses:	--

3. Questionnaire(s)

3.1. Definitions used

According to the revised *Oslo Manual* definitions.

3.2. Reference period

1994-97 or 1997.

3.3. Comparability with the CIS-2 questionnaire

The Slovak innovation questionnaire is fully compatible with the CIS-1 questionnaire and only partially compatible with the CIS-2 questionnaire for the contents and fairly compatible for the structure of the questionnaire.

	Fully	Fairly	None or not at all
General information about the enterprise	☺		
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*		😐	
• *Question 2.(M)*		😐	
• *Question 3.(M)/2.(S)*		😐	
Impact of innovation activity:			
• *Question 4.(M)*	☺		
• *Question 5.(M)*			☹
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity		😐	
b) R&D personnel			☹
c) Engagement in R&D	☺		
Government support:			
• *Question 7.(M)/4.(S)*			☹
Patents:			
• *Question 8.(M)/5.(S)*			☹
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*		😐	
Innovation co-operation:			
• *Question 11.(M)/8.(S)*			☹
Factors hampering innovation:			
• *Question 12.(M)/9.(S)*			
a) Project delayed? Abolished? Not started?			☹
b) Hampering factors		😐	

3.4. Additional question(s) in the national innovation survey

Questions about "acquisition/transfer of technology", "maintaining competitiveness of products and processes", "R&D activity", "R&D co-operation" and "share of innovative products in total export sales" are included, in more or less the same format as in the CIS-1 questionnaire.

4. Timing

Start mailing the questionnaire:	May 1998
Finish collecting the data by (due date):	
Availability of results:	
a) First results:	September 1998
b) Final results:	

5. Remarks

The sample size is too small to expect reliable conclusions, this pilot survey is not a real innovation survey and will serve to test the questionnaire. This was also the reason why the SOSR decided not to publish the results. On the other hand, all comments and proposals from respondents were taken into account and the questionnaire was consequently modified. The innovation questionnaire has been adopted by the Statistical Council and included in the Programme of State Statistical Surveys for 1999.

6. Contact person(s) for information on innovation survey

Name: Mr. Frantisek Bernadic

Address: Statistical Office of the Slovak Republic
Dúbravská cesta 3
84221 BRATISLAVA
Slovak Republic

Phone: +42-1-7-5937 9240 Fax: +42-1-7-5479 1463 E-mail: bernadic@infostat.sk

Name: Ms Edita Novotna

Address: Statistical Office of the Slovak Republic
Mileticova 3
84267 BRATISLAVA
Slovak Republic

Phone: +42 1 7 6925 0248 Fax: +42 1 7 6436 8426 E-mail: novotna@statistics.sk

7. Publications, papers

SWITZERLAND

1. Agency

The survey and related research was financed by the "Office fédéral du développement économique et de l'emploi" (Federal Office for Economic Development and Employment) and carried out by agency "Konjunkturforschungsstelle KOF/ETH" in Zurich.

2. Population, coverage and implementation

2.1. Industrial sectors covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes)

Manufacturing:	ISIC Rev. 3, 15-37
Services:	Private services only
Other:	*Construction*: ISIC Rev. 3, 45

2.2. The survey

Kind of survey:	Voluntary sample survey.
Statistical unit:	Enterprise.
Cut-off-point:	Five employees.
Total number of firms in the industrial sectors covered:	*Manufacturing:* 14 254*; Construction* 12 198*; Services:* 33 195.
Gross sample size:	*Manufacturing*: 2 600 ; *Construction*: 600 ; *Services*: 2 200.
Sample description:	*Origin and coverage of the frame*:
	Sampling method used: A statistical procedure was used for sampling according to size class and industrial sector. *Manufacturing*: census for large firms, 71% of medium-sized firms and 12% of small firms ; *Services*: census for large firms, 17% of medium-sized firms and 4% of small firms.
Survey method:	Postal survey.
Follow up:	Reminder by phone with the aim of obtaining a response structure as close as possible to that of the sample.
Combination with other survey:	Yes.
If so, which?	Survey on Diffusion of Advanced Manufacturing Technologies and of Microelectronics.
Response rate(s):	*Manufacturing*: 34%; *Construction*: 35%; *Services*: 32%.
Response analysis:	Weighting of responses in accordance with sample structure.
Treatment of non-responses:	Not possible for financial reasons.

3. Questionnaire(s)

3.1. Definitions used

No divergence from the *Oslo Manual* definitions, but no distinction is made between a "technologically new product" and a "technologically improved product".

3.2. Reference period

1994-96 or 1995.

3.3. Comparability with the CIS-2 questionnaire

	Fully	Fairly	None or not at all
General information about the enterprise		😐	
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*		😐	
• *Question 2.(M)*		😐	
• *Question 3.(M)/2.(S)*			☹
Impact of innovation activity:			
• *Question 4.(M)*	☺		
• *Question 5.(M)*		😐	
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity		😐	
b) R&D personnel	☺		
c) Engagement in R&D		😐	
Government support:			
• *Question 7.(M)/4.(S)*			☹
Patents:			
• *Question 8.(M)/5.(S)*	☺		
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*	☺		
Innovation co-operation:			
• *Question 11.(M)/8.(S)*		😐	
Factors hampering innovation:			
• *Question 12.(M)/9.(S*			
a) Project delayed? Abolished? Not started?		😐	
b) Hampering factors		😐	

3.4. Additional question(s) in the national innovation survey

General firm characteristics (material input and labour compensation as share of sales; five skill categories as percentage of employees; type of product and production technique used); market conditions (number of main competitors in the product market; intensity of price and non-price competition in the product market; innovation activities; qualitative information (importance of product/process innovations from a technical/economic point of view; expenditures on research, development, engineering/design, follow-up investment; R&D activities abroad); effectiveness of various appropriability instruments; technological potential.

4. Timing

Start mailing the questionnaire:	End August 1996
Finish collecting the data by (due date):	End 1996
Availability of results:	
a) First results:	May 1997
b) Final results:	May 1998 for analysis (econometric estimates, cluster analysis, etc.)

5. Contact person(s) for information on innovation survey

Name: Dr. Jiri Elias

Address: Office fédéral du développement économique et de l'emploi
Bundesgasse, 8
CH-3003 BERN

Phone: 0041/31 322 21 53 Fax: 0041/31 324 96 15 E-mail: Jiri.Elias@bwa.admin.ch

and

Name: Dr. Spyros Arvanitis and Dr. Heinz Hollenstein

Address: KOF/ETHZ
ETH Zentrum
CH-8092 ZURICH

Phone: 0041/1 632 4239 Fax: 0041/1 632 1218 E-mail: hollenstein@kof.reok.ethz.ch
arvanitis@kof.reok.ethz.ch

7. Publications, papers

- Arvanitis, S., Donzè, L., Hollenstein, H. and S. Lenz (1998a), "Innovationstätigkeit in der Schweizer Wirtschaft, Teil I: Industrie, Studienreihe Strukturberichterstattung", hrsg. vom Bundesamt für Wirtschaft und Arbeit, Bern (with an extensive summary in French).
- Arvanitis, S., Donzè, L., Hollenstein, H. and S. Lenz (1998b), "Innovationstätigkeit in der Schweizer Wirtschaft, Teil II: Bau- und Dienstleistungssektor, Studienreihe Strukturbericht-erstattung", hrsg. vom Bundesamt für Wirtschaft und Arbeit, Bern (with an extensive summary in French).
- Arvanitis, S. and H. Hollenstein (1997a), "Innovative Activity and Firm Characteristics: An Exploration of Clustering at Firm Level in Swiss Manufacturing", paper presented at the OECD Workshop on Cluster Analysis and Cluster-based Policies, Amsterdam, October 10-11.

- Arvanitis, S. and H. Hollenstein (1997b), "Appropriability, Technological Knowledge and Firm Performance: An Empirical Analysis with Swiss Cross-section Firm Data", paper presented at the 23rd Ciret Conference, Helsinki, 30 July-2 August.
- Donzé, L. and Lenz, S. (1997), "Indicators and Determinants of Innovative Activity in the Service Sector: A First Empirical Analysis with Survey Data", paper presented at the 23rd Ciret Conference, Helsinki, 30 July-2 August.

TURKEY

1. Agency

State Institute of Statistics

2. Population, coverage and implementation

2.1. Industrial sectors covered by the national innovation survey (based on ISIC Rev. 3 or NACE Rev. 1 codes)

Manufacturing:	ISIC Rev. 3: 15 to 37
Services:	ISIC Rev. 3: 642, 65, 66, 67, 72

2.2. The survey

Kind of survey:	Mandatory sample survey.
Statistical unit:	Establishment.
Cut-off-point:	10 employees.
Total number of firms in the industrial sectors covered:	*Manufacturing: 8 967 Services: ?*
Gross sample size:	*Manufacturing:* 4 305 establishments; *Services:* 1 224 establishments.
Sample description:	*Origin and coverage of the frame*: statistical business register. *Sampling method used*: Stratified random sample by number of employee and industry (ISIC Rev3).
Survey method:	Postal survey.
Follow up:	Fax reminders and phone calls.
Combination with other survey:	No.
Response rate(s):	*Manufacturing*: 49%; *Services*: 40%.
Response analysis:	
Treatment of non responses:	*Manufacturing*: non-response analysis has been done for 10% of all non-responding firms via phone; *Services*: no non-response analysis.

3. Questionnaire(s)

3.1. Definitions used

According to the *Oslo Manual* definitions.

3.2. Reference period

1995-1997 or 1997

3.3. Comparability with the CIS-2 questionnaire

	Fully	Fairly	None or not at all
General information about the enterprise		😐	
Scope and impact of technological innovation and innovation activity of the enterprise			
Innovative activities:			
• *Question 1.*		😐	
• *Question 2.(M)*		😐	
• *Question 3.(M)/2.(S)*	☺		
Impact of innovation activity:			
• *Question 4.(M)*	☺		
• *Question 5.(M)*			☹
Resources devoted to innovation activity:			
• *Question 6.(M)/3.(S)*			
a) By innovation activity	☺		
b) R&D personnel			☹
c) Engagement in R&D	☺		
Government support:			
• *Question 7.(M)/4.(S)*	☺		
Patents:			
• *Question 8.(M)/5.(S)*	☺		
Factors influencing innovation activity			
Objectives of innovation:			
• *Question 9.(M)/6.(S)*	☺		
Sources of information for innovation:			
• *Question 10.(M)/7.(S)*	☺		
Innovation co-operation:			
• *Question 11.(M)/8.(S)*	☺		
Factors hampering innovation:			
• *Question 12.(M)/9.(S)*			
a) Project delayed? Abolished? Not started?			☹
b) Hampering factors	☺		

3.4. Additional question(s) in the national innovation survey

The following items are included in the survey (numbers in parentheses refer to the question number in the national innovation survey):

- Use of Internet (5 to 7).
- Factors which have changed the establishment (20).
- Work being done by engineers in the establishment (21).

4. Timing

Start mailing the questionnaire:	May 1998
Finish collecting the data by (due date):	August 1998
Availability of results:	
a) First results:	October 1998
b) Final results:	May 1999

5. Contact person(s) for information on innovation survey

Name: Ms. Hande Keser

Address: State Institute of Statistics
Necatibey Caddesi 114
06100 ANKARA
Turkey

Phone: (90-312)419 1671 Fax: (90-312)417 4225 E-mail: hande.keser@die.gov.tr

6. Publications, papers

Draft questionnaire for manufacturing industry.

ANNEX 1 - CIS-2 QUESTIONNAIRES



Eurostat/A4

MANUFACTURING SECTOR

The second Community Innovation Survey

Core questionnaire
5 March 1997

General information about the enterprise

Name of enterprise _____

Address (NUTS 2 code[12]) _____

Main activity (NACE Rev. 1, 4-digits code[13]) _____

Is your enterprise (tick the most appropriate alternative)

Independent ? [ ]
Part of an enterprise group ? [ ]

If your enterprise belongs to an enterprise group, what is the country[14] of head office ? _____

Did any of the following significant changes (affecting turnover at least 10%) **occur to your enterprise between 1994 and 1996?**

	Yes	No
Your enterprise was established	[ ]	[ ]
Turnover increased due to merger with another enterprise or part of it	[ ]	[ ]
Turnover decreased due to sale or closure of part of the enterprise	[ ]	[ ]

Please give the following basic general information on your enterprise (only domestic units should be included)

Number of employees end 1996 (or other relevant reporting time) _____
change 1994-96 _____ %

Turnover 1996 _____
change 1994-96 _____ %

Exports 1996 _____
change 1994-96 _____ %

Name of respondent _____
Job title _____
Phone _____ **Fax** _____ **E-mail** _____

12. NUTS 2 code has to be supplied to Eurostat.

13. NACE Rev 1, 4-digit code has to be supplied to Eurostat.

14. Country code according to ISO standard has to be supplied to Eurostat.

Scope and impact of technological innovation and innovation activity of the enterprise

Technological innovations comprise implemented technologically new products and processes and significant technological improvements in products and processes. An innovation has been **implemented,** if it has been introduced on the market (product innovation) or used within a production process (process innovation). The product or process should be new (or significantly improved) to the enterprise (it does not necessarily have to be new to the enterprise's market).

Technological innovation requires an objective improvement in the performance of a product or in the way in which it is produced or delivered. The following changes **are not technological innovations:**

- *improvements of products that make them more attractive to the purchasers without changing their "technological" characteristics*
- *minor technological changes of products and processes or changes which does not have the sufficient degree of novelty*
- *changes of products and processes, where the novelty does not concern the use or objective performance characteristics of the products or the way they are produced or delivered but rather their aesthetic or subjective qualities*

(see page 8 for some further examples of innovations and changes not counted as innovations)

Innovation activities are all those steps necessary to develop and implement technologically new or improved products or processes.

1. Between 1994-96, has your enterprise introduced onto the market any technologically new or improved products?[15]

A technologically new product is a product whose technological characteristics or intended uses differ significantly from those of previously produced products. Such innovations can involve radically new technologies, can be based on combining existing technologies in new uses, or can be derived from the use of new knowledge.

A technologically improved product is an existing product whose performance has been significantly enhanced or upgraded. A simple product may be improved (in terms of better performance or lower cost) through use of higher-performance components or materials, or a complex product which consists of a number of integrated technical subsystems may be improved by partial changes to one of the subsystems.

Yes [ ] No [ ]

If yes, who developed these products? (tick appropriate alternatives for different products)

Mainly other enterprises or institutes	[ ]
Your enterprise and other enterprises or institutes	[ ]
Mainly your enterprise	[ ]

15. It is recommended that national surveys include a request to describe the most important technologically new or improved product or process.

2. Between 1994-96 has your enterprise introduced any technologically new or improved processes[16]?

Technological process innovation is the adoption of technologically new or significantly improved production methods, including methods of product delivery. These methods may involve changes in equipment, or production organisation, or a combination of these changes, and may be derived from the use of new knowledge. The methods may be intended to produce or deliver technologically new or improved products, which cannot be produced or delivered using conventional production methods, or essentially to increase the production or delivery efficiency of existing products.

Yes [ ] No [ ]

If yes, who developed these processes? (tick appropriate alternatives for different processes)

Mainly other enterprises or institutes	[ ]
Your enterprise and other enterprises or institutes	[ ]
Mainly your enterprise	[ ]

3. Between 1994-96, did your enterprise have unsuccessful or not yet completed projects to develop or introduce technologically new or improved products or processes?

Yes [ ] No [ ]

If questions 1-3 above have all been answered with no, please still answer question 12 at the end of the questionnaire.

4. Turnover in 1996 due to technologically new or improved products to your enterprise (see definitions for question 1, page 3)

Please estimate how your turnover in 1996 was distributed between

Technologically new products introduced between 1994 and 1996	_____*%*
Technologically improved products introduced between 1994 and 1996	_____*%*
Unchanged or only marginally modified products between 1994 and 1996, other turnover	_____*%*
Total turnover in 1996	100 *%*

5. Turnover in 1996 due to technologically new or improved products also new to your enterprise's market

Some of the technologically new or improved products included in the previous question might be new not only for your enterprise but also to your enterprise's market

Between 1994 and 1996, did your enterprise introduce technologically new or improved products new not only to your enterprise but also to your enterprise's market?

Yes [ ] No [ ]

If yes, please estimate the share of turnover due to these products in 1996 _____ *%*

6. Resources devoted to innovation activities in 1996

16. It is recommended that national surveys include a request to describe the most important technologically new or improved product or process.

In this question some information is asked about engagement in and resources devoted to the following innovation activities of the enterprise.

Research and experimental development (R&D) [17] comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, and the use of this stock of knowledge to devise new applications, such as technologically new or improved products and processes. Construction, design and testing of a prototype is often the most important phase of R&D. Software development is included as long as it involves making a scientific or technological advance. R&D can be carried out within the enterprise or R&D services can be acquired.

Acquisition of machinery and equipment(including integrated software) **linked to product and process innovations** implemented by the enterprise

Acquisition of other external technology linked to product and process innovations in the form of patents, non-patented inventions, licenses, know-how, trademarks, drawing plans and consultancy services (excluding R&D), related to the implementation of technological innovations, plus the acquisition of packaged software that is not classified elsewhere.

Industrial design and other production preparations for technologically new or improved products include plans and drawings aimed at defining procedures, technical specifications and operational features necessary for the production of technologically new or improved products and the implementation of technologically new processes. This item also include changes in production and quality control procedures, methods and standards and associated software required to produce the technologically new or improved product or to use the technologically new or improved process. Product or process modifications needed to start production, including trial production (not included in R&D) are also included.

Training directly linked to technological innovations is training for the implementation of a technologically new or improved product or process. Expenditure for training might include acquisition of external services and expenditure for in-house training.

Market introduction of technological innovations includes activities in connection with the launching of a technologically new or improved product. These may include preliminary market research, market tests and launch advertising, but will exclude the building of distribution networks to market innovations.

Did your enterprise engage in the following innovation activities in 1996?

	Yes	No	**if yes, please estimate expenditure involved**
- Research and experimental development within the enterprise (intramural R&D)	[ ]	[ ]	_____
- Acquisition of R&D services (extramural R&D)	[ ]	[ ]	_____
- Acquisition of machinery and equipment linked to product and process innovations	[ ]	[ ]	_____
- Acquisition of other external technology linked to product and process innovations	[ ]	[ ]	_____
- Industrial design, other production preparations for technologically new or improved products	[ ]	[ ]	_____
- Training directly linked to technological innovations	[ ]	[ ]	_____
- Market introduction of technological innovations	[ ]	[ ]	_____
Total expenditure			_____

The expenditure items should cover current (labour costs, acquisition of services, materials, etc.) and capital expenditure (instruments and equipment, computer software, land and buildings). If it is not possible to estimate all expenditure items involved, please at least indicate, if your enterprise has been engaged in a particular innovation activity or not.

R&D personnel within the enterprise in 1996 (in full time equivalents) _____

Did your enterprise engage in R&D between 1994 and 1996?

Continuously [ ] Occasionally [ ] Not at all [ ]

17. The definition of R&D should be translated according to usual practice in R&D surveys.

7. Did your enterprise receive any government support (money allocation) **for innovation activities in 1996?** (loans including a subsidy element, grants)

Yes [ ] No [ ]

8. Did your enterprise apply for at least one patent between 1994 and 1996 in any country?

Yes [ ] No [ ]

Factors influencing innovation activity

9. Objectives of innovation between 1994 and 1996

The main reasons for developing and introducing innovations are asked in this question
Please indicate the degree of importance attached to various alternative objectives by ticking 0=not relevant 1= slightly important 2=moderately important 3=very important

Objective	Not relevant	Importance		
	0	1	2	3
Replace products being phased out				
Improving product quality				
Extend product range				
Open up new markets or increase market share				
Fulfilling regulations, standards				
Improve production flexibility				
Reduce labour costs				
Reduce materials consumption				
Reduce energy consumption				
Reduce environmental damage				

10. Sources of information for innovation between 1994 and 1996

The main sources of information needed for suggesting new innovation projects or contributing to completion of existing projects are asked in this question.
Please indicate the degree of importance attached to various alternatives by ticking 0=not used 1=slightly important 2=moderately important 3=very important

Information source	Not used	If used Importance		
	0	1	2	3
Sources within the enterprise				
Other enterprises within the enterprise group				
Competitors				
Clients or customers				
Consultancy enterprises				
Suppliers of equipment, materials, components or software				
Universities or other higher education institutes				
Government or private non-profit research institutes				
Patent disclosures				
Professional conferences, meetings, journals				
Computer based information networks				
Fairs, exhibitions				

11. Innovation co-operation between 1994 and 1996

Innovation co-operation means active participation in joint R&D and other innovation projects with other organisations. It does not necessarily imply that both partners derive immediate commercial benefit from the venture. Pure contracting out work, where there is no active participation, is not regarded as co-operation.

Did your enterprise have any co-operation arrangements on innovation activities with other enterprises or institutions in 1994-1996?

Yes[ ] No [ ] (go to question 12)

If yes, please indicate by ticking the type of organisation and location of your co-operation partner

Type of partner	Location of partner				
	National	EU	USA	Japan	Other
Other enterprises within the group					
Competitors					
Clients or customers					
Consultancy enterprises					
Suppliers of equipment, materials, components or software					
Universities or other higher education institutes					
Government or private non-profit research institutes					

12. Factors hampering innovation

The innovation activity of your enterprise could be hampered by various factors, which might prevent innovation projects or slow up or stop projects in progress.

a) Has at least one innovation project in 1994-1996 been

	Yes	No
- seriously delayed	[ ]	[ ]
- abolished [ ]	[ ]	
- not even started	[ ]	[ ]

b) If yes on at least one question, tick the relevant factors in the respective columns

Hampering factors	seriously delayed	abolished	not even started
Excessive perceived economic risks			
Innovation costs too high			
Lack of appropriate sources of finance			
Organisational rigidities			
Lack of qualified personnel			
Lack of information on technology			
Lack of information on markets			
Fulfilling regulations, standards			
Lack of customer responsiveness to new products			

Selected examples of innovation and other changes not regarded as innovation

In custom production (production of single products on order), a criterion for qualifying as a technological innovation could be that the planning of the product includes construction and testing of a prototype or other research and development activities in order to change one or more of the product's attributes.

Change in clothing production is very largely a matter of fashion. For these firms, rapid introduction of the latest colours and cut is a key element in their competitiveness. But colour and cut do not change the essential characteristics or performance of clothing, i.e. that it should keep the body at an appropriate temperature, be comfortable to wear and easy to maintain. Technologically improved products here almost always involve the use of new materials diffused by the textile industry and, before that, the chemical industry. For example, the introduction of drip-dry shirts, or "breathable" waterproof mountain gear, is a technological product innovation.

The implementation of a quality standard such as ISO 9000 is not technological innovation unless it is directly related to the introduction of technologically new or significantly improved products or processes

The retitling and repackaging of an existing soft drink popular with older people, to establish a link with a football team in order to reach the youth market, is not technological innovation.

New models of complex products, such as cars or television sets, are not product innovation, if the changes are minor compared with the previous models, for example offering a radio in a car. If the changes are significant, based on new designs or technical modifications to subsystems, the improved products could be considered as product innovations.



EUROSTAT/A4

SERVICE SECTOR

The second Community Innovation Survey

Core questionnaire
5 March 1997

General information about the enterprise

Name of enterprise _____

Address (NUTS 2 code[18]) _____

Main activity (NACE Rev. 1, 4-digits code[19]) _____

Is your enterprise (tick the most appropriate alternative)

Independent ? [ ]
Part of an enterprise group ? [ ]

If your enterprise belongs to an enterprise group, what is the country[20] of head office ? _____

Did any of the following significant changes (affecting turnover at least 10%) **occur to your enterprise between 1994 and 1996?**

	Yes	No
Your enterprise was established	[ ]	[ ]
Turnover increased due to merger with another enterprise or part of it	[ ]	[ ]
Turnover decreased due to sale or closure of part of the enterprise	[ ]	[ ]

Please give the following basic general information on your enterprise (only domestic units should be included)

Number of employees end 1996 (or other relevant reporting time) _____
change 1994-96 _____ %

Turnover[21] 1996 _____
change 1994-96 _____ %

Exports[22] 1996 _____
change 1994-96 _____ %

Name of respondent _____
Job title _____
Phone _____ **Fax** _____ **E-mail** _____

18. NUTS 2 code has to be supplied to Eurostat.

19. NACE Rev 1, 4-digit code has to be supplied to Eurostat.

20. Country code according to ISO standard has to be supplied to Eurostat.

21. For banks interests and commissions received, for insurance gross premium written.

22. Does not apply for banks and insurance.

Scope and impact of technological innovation and innovation activity of the enterprise

Technological innovations comprise implemented new or significantly improved services and new or significantly improved ways of producing or delivering a service. An innovation has been **implemented** if it has been introduced on the market or used in producing or delivering services. The service should be new (or significantly improved) to the enterprise (it does not necessarily have to be new to the enterprise's market).

A new or improved service is considered to be a **technological innovation** when its characteristics and ways of use are either completely new or significantly improved qualitatively or in terms of performance and technologies used. The adoption of a production or delivery method which is characterised by significantly improved performance is also a technological innovation. Such adoption may involve change in equipment, organisation of production or both and may be intended to produce or deliver new or significantly improved services which cannot be produced or delivered using existing production methods or to improve the production or delivery efficiency of existing services.

The introduction of a new or significantly improved service or production or delivery method can require the use of radically new technologies or a new combination of existing technologies or new knowledge. The technologies involved are often embodied in new or improved machinery, equipment or software. The new knowledge involved could be the result of research, acquisition or utilisation of specific skills and competencies.

The following changes **are not technological innovations** if they are not directly related to the introduction of new or significantly improved services or ways of producing or delivering them:

- *organisational and managerial changes such as the implementation of advanced management techniques, the introduction of significantly changed organisational structures and the implementation of new or substantially changed corporate strategic orientations*
- *the implementation of a quality standard such as ISO 9000*

(see page 7 for some more specific examples of innovations)

Innovation activities are all those steps necessary to develop and implement new or significantly improved services or methods to produce or deliver services

1. Between 1994-96, has your enterprise introduced onto the market any new or significantly improved services or methods to produce or deliver services?[23] (see definition of technological innovation above)

Yes [ ] No [ ]

If yes, who developed these services or methods? (tick appropriate alternatives for different services or methods)

Mainly other enterprises or institutes	[ ]
Your enterprise together with other enterprises or institutes	[ ]
Mainly your enterprise	[ ]

2. Between 1994-96, did your enterprise have unsuccessful or not yet completed projects to develop or introduce new or significantly improved services or methods to produce or deliver services?

Yes [ ] No [ ]

If both questions above have been answered with no, please still answer question 9 at the end of the questionnaire.

23. It is recommended that national surveys include a request to describe the most important new or substantially improved service or method to produce or deliver services.

3. Resources devoted to innovation activities in 1996

In this question some information is asked about engagement in and resources devoted to innovation activities of the enterprise

Research and experimental development (R&D) [24] comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, and the use of this stock of knowledge to devise new applications, such as new or significantly improved services or methods to produce or deliver services. Construction, design and testing of a prototype is often the most important phase of R&D. Software development is included as long as it involves making a scientific or technological advance. R&D can be carried out within the enterprise or R&D services can be acquired.

Acquisition of machinery and equipment (including integrated software) **linked to technological innovations**, implemented by the enterprise

Acquisition of software and other external technology linked to technological innovations includes the acquisition of packaged software, acquisition of patents, non-patented inventions, licenses, know-how, trademarks, drawing plans and consultancy services (excluding R&D), related to the implementation of technological innovations.

Preparations to introduce new or significantly improved services or methods to produce or deliver them comprise activities aimed at defining procedures, specifications and operational features (including final tests) necessary for the introduction of innovations.

Training directly linked to technological innovations is training for the implementation of new or substantially improved services or methods to produce or deliver them. Expenditure for training might include acquisition of external services and expenditure for in-house training.

Market introduction of technological innovations includes activities in connection with the launching of new services. These may include preliminary market research, market tests and launch advertising, but will exclude the building of distribution networks to market innovations.

Did your enterprise engage in the following innovation activities in 1996?

	Yes	No	**If yes, please estimate expenditure involved**
- Research and experimental development within the enterprise (intramural R&D)	[ ]	[ ]	_____
- Acquisition of R&D services (extramural R&D)	[ ]	[ ]	_____
- Acquisition of machinery and equipment linked to technological innovations	[ ]	[ ]	_____
- Acquisition of software and other external technology linked to technological innovations	[ ]	[ ]	_____
- Preparations to introduce new or significantly improved services or methods to produce or deliver them	[ ]	[ ]	_____
- Training directly linked to technological innovations	[ ]	[ ]	_____
- Market introduction of technological innovations	[ ]	[ ]	_____
Total expenditure			_____

The expenditure items should cover current (labour costs, acquisition of services, materials, etc.) and capital expenditure (instruments and equipment, computer software, land and buildings). If it is not possible to estimate all expenditure items involved, please at least indicate, if your enterprise has been engaged in a particular innovation activity or not.

R&D personnel within the enterprise in 1996 (in full time equivalents) _____

Did your enterprise engage in R&D between 1994 and 1996?

Continuously [ ] Occasionally [ ] Not at all [ ]

24. The definition of R&D should be translated according to usual practice in R&D surveys.

4. Did your enterprise receive any government support (money allocation) **for innovation activities in 1996?** (loans including a subsidy element, grants)

Yes [ ] No [ ]

5. Did your enterprise apply for at least one patent between 1994 and 1996 in any country?

Yes [ ] No [ ]

Factors influencing innovation activity

6. Objectives of innovation between 1994 and 1996

The main reasons for developing and introducing innovations are asked in this question.
Please indicate the degree of importance attached to various alternative objectives by ticking 0=not relevant 1= slightly important 2=moderately important 3=very important.

Objective	Not relevant	Importance		
	0	1	2	3
Replace products being phased out				
Improving product quality				
Extend product range				
Open up new markets or increase market share				
Fulfilling regulations, standards				
Improve production flexibility				
Reduce labour costs				
Reduce materials consumption				
Reduce energy consumption				
Reduce environmental damage				

7. Sources of information for innovation between 1994 and 1996

The main sources of information needed for suggesting new innovation projects or contributing to completion of existing projects are asked in this question.
Please indicate the degree of importance attached to various alternatives by ticking 0=not used 1=slightly important 2=moderately important 3=very important.

Information source	Not used	If used Importance		
	0	1	2	3
Sources within the enterprise				
Other enterprises within the enterprise group				
Competitors				
Clients or customers				
Consultancy enterprises				
Suppliers of equipment, materials, components or software				
Universities or other higher education institutes				
Government or private non-profit research institutes				
Patent disclosures				
Professional conferences, meetings, journals				
Computer based information networks				
Fairs, exhibitions				

8. Innovation co-operation between 1994 and 1996

Innovation co-operation means active participation in joint R&D and other innovation projects with other organisations. It does not necessarily imply that both partners derive immediate commercial benefit from the venture. Pure contracting out work, where there is no active participation, is not regarded as co-operation.

Did your enterprise have any co-operation arrangements on innovation activities with other enterprises or institutions in 1994-1996?

Yes[ ] No [ ] (go to question 12)

If yes, please indicate by ticking the type of organisation and location of your co-operation partner

Type of partner	Location of partner				
	National	EU	USA	Japan	Other
Other enterprises within the group					
Competitors					
Clients or customers					
Consultancy enterprises					
Suppliers of equipment, materials, components or software					
Universities or other higher education institutes					
Government or private non-profit research institutes					

9. Factors hampering innovation

The innovation activity of your enterprise could be hampered by various factors, which might prevent innovation projects or slow up or stop projects in progress.

a) Has at least one innovation project in 1994-1996 been

	Yes	No
- seriously delayed	[ ]	[ ]
- abolished	[ ]	[ ]
- not even started	[ ]	[ ]

b) If yes on at least one question, tick the relevant factors in the respective columns

Hampering factors	Seriously delayed	Abolished	Not even started
Excessive perceived economic risks			
Innovation costs too high			
Lack of appropriate sources of finance			
Organisational rigidities			
Lack of qualified personnel			
Lack of information on technology			
Lack of information on markets			
Fulfilling regulations, standards			
Lack of customer responsiveness to new products			

Selected examples of innovation in the service sector

- Use of cellular phones to re-route drivers throughout the day.
- A new computer mapping system, used by drivers to work out the fastest delivery route.
- Introduction of a new switching system that allows the digital transfer of information across the telecommunications net.
- The introduction of smart cards and multipurpose plastic cards.
- A new bank office without any personnel where clients conducted business through computer terminals.
- Telephone banking.
- Development of customer software packages with various degrees of support for customers.
- The introduction of new multimedia software applications for educational purposes.
- The introduction of qualification procedures for medicine-testing methods.