

Measuring Intangible Investment

Intangible Investment Activities in ISIC and the Provisional CPC

by

OECD Secretariat

© OECD 1998

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

TABLE OF CONTENTS

CHAPTER 1. RESEARCH AND EXPERIMENTAL DEVELOPMENT.....	3
1.1 Overview.....	3
1.2 R&D in the provisional CPC	3
1.3 R&D in ISIC Rev. 3.....	4
CHAPTER 2. SOFTWARE AND DATA BANKS	5
2.1 Overview.....	5
2.2 Software and databanks starting in the provisional CPC.....	5
2.3 Software and databases in ISIC Rev. 3.....	7
CHAPTER 3. MINERAL PROSPECTING.....	9
3.1 Overview.....	9
3.2 Mineral prospecting in the provisional CPC	9
3.3 Mineral prospecting in ISIC Rev. 3	9
CHAPTER 4. MARKETING AND DEVELOPMENT OF THE ORGANISATION.....	11
4.1 Overview.....	11
4.2 Marketing and the development of the organisation in the CPC.....	11
4.3 Marketing and development of the organisation in ISIC Rev. 3	14
CHAPTER 5. TRAINING AND OTHER HUMAN RESOURCES DEVELOPMENT	15
5.1 Overview.....	15
5.2 Training.....	15
5.3 Other human resource development (OHRD)	16
CHAPTER 6. PATENTS, LICENCES, BRANDS AND COPYRIGHT.....	18
6.1 Overview.....	18
6.2 Patents, licences, brands and copyright in the provisional CPC	18
6.3 Patents, licences, brands and copyright in ISIC Rev. 3	19
CHAPTER 7. DESIGN AND ENGINEERING.....	20
7.1 Overview.....	20
7.2 Design and engineering in the provisional CPC	20
7.3 Design and engineering in ISIC Rev. 3	22

CHAPTER 1. RESEARCH AND EXPERIMENTAL DEVELOPMENT

1.1 Overview

Both classifications identify R&D at division (2-digit) level with a further breakdown by field of science and technology which is not relevant for the current exercise. R&D was not separately identifiable in ISIC Rev. 2.

1.2 R&D in the provisional CPC

DIVISION 85 RESEARCH AND DEVELOPMENT SERVICES

Research and development services consisting in scientific progress achieved in the various fields of natural or social sciences in the three areas of R&D, i.e. basic research, applied research and experimental development. R&D services are subdivided into groups, classes and subclasses according to the sciences to which the R&D services relate.

851 Research and experimental development services on natural sciences and engineering

85101 Research and experimental development services on physical sciences

85102 Research and experimental development services on chemistry and biology

85103 Research and experimental development services on engineering and technology

85104 Research and experimental development services on agricultural sciences

85105 Research and experimental development services on medical sciences and pharmacy

85109 Research and experimental development services on other natural sciences

852 Research and experimental development services on social sciences and humanities

85201 Research and experimental development services on cultural sciences, sociology and psychology on economics

85202 Research and experimental development services on economics

85203 Research and experimental development services on law

85204 Research and experimental development services on linguistics and languages

- 85209 Research and experimental development services on other social sciences and humanities
- 853 85300 Interdisciplinary research and experimental development services"

1.3 R&D in ISIC Rev. 3

DIVISION 73 RESEARCH AND DEVELOPMENT

This division includes the performance of the following three types of activities:

- Basic research, experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without particular application or use in view.
- Applied research is also original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective.
- Experimental development is systematic work, drawing on existing knowledge gained from research and/or practical experience, that is directed to producing new materials, products and devices, to installing new processes, systems and services, and to improving those already produced or installed.

The basic criterion for distinguishing R&D from related activities is the presence in R&D of an appreciable element of novelty.

Exclusions: Governmental administration of R&D and of associated funds in the various natural or social sciences are classified in the appropriate class of division 75 (Public administration and defence; compulsory social security).

Administration and support of defence related applied research and experimental development are classified in class 7522 (Defence activities).

Education combined with R&D is classified in the appropriate class of division 80 (Education).

The raising and management of R&D funds for medical and other social-related R&D by charities is classified in class 8532 (Social work without accommodation).

731 7310 Research and experimental development on natural sciences and engineering (NSE)

732 7320 Research and experimental development on social sciences and humanities (SSH)

CHAPTER 2. SOFTWARE AND DATA BANKS

2.1 Overview

Both classifications identify computer and related activities and services at division (2-digit) level and software implementation services consultancy and supply at 3-digit level. Neither can identify the development of databases. The CPC specifies that software training services for clients are included in this division. **Sales** of packaged software came under retailing. For a revised CPC breakdown see paper on the Voorburg model survey of computer services.

2.2 Software and databanks starting in the provisional CPC

DIVISION 84 COMPUTER AND RELATED SERVICES

841 "Consultancy services related to the installation of computer hardware

842 Software implementation services

All services involving consultancy services on, development and implementation of software. The term "software" may be defined as the sets of instructions required to make computers work and communicate. A number of different programs may be developed for specific application (application software), and the customer may have a choice of using ready-made programs off the shelf (packaged software), developing specific programs for particular requirements (customised software) or using a combination of the two.

8421 84210 Systems and software consulting services

Services of a general nature prior to the development of data processing systems and applications. It might be management services, project planning services, etc.

8422 84220 Systems analysis services

Analysis services include analysis of the clients' needs, defining functional specification, and setting up the team. Also involved are project management, technical co-ordination and integration and definition of the systems.

8423 84230 Systems design services

Design services include technical solutions, with respect to methodology, quality-assurance, choice of equipment software packages or new technologies, etc.

- 8424 84240 Programming services
- Programming services include the implementation phase, i.e. writing and debugging programs, conducting tests, and editing documentation.
- 8425 84250 Systems maintenance services
- Maintenance services include consulting and technical assistance services of software products in use, rewriting or changing existing programs or systems, and maintaining up-to-date software documentation and manuals. Also included are specialist work, e.g. conversions.
- 843 Data processing services
- (not intangible investment)
- 844 Database services
- 8440 84400 Database services
- All services provided from primarily structured databases through a communication network.
- Exclusions:** Data and message transmission services (e.g. network operation services, value-added network services) are classified in class 7523 (Data and message transmission services).
- Documentation services consisting in information retrieval from databases are classified in subclass 96311 (Library services).
- 845 Maintenance and repair services of office machinery and equipment
- (an intangible investment)
- 849 Other computer services
- 8491 84910 Data preparation services
- (not intangible investment)
- 8499 84990 Other computer services n.e.c.
- Other computer related services, not elsewhere classified, e.g. **training services for staff of clients**, and other professional computer services.
- 63252 Retailing services of computing machinery and related accessories, and non-customised software. (Products classified in CPC 452, 842)."

2.3 Software and databases in ISIC Rev. 3

DIVISION 72 COMPUTER AND RELATED ACTIVITIES

721 7210 Hardware consultancy

This class includes consultancy on type and configuration of hardware with or without associated software application. The consultancy typically involves analysing the users' needs and problems and presenting the best solution.

Exclusions: Similar activities carried out by units selling computers are classified in class 3000 (Manufacture of office, accounting and computing machinery) or in divisions 51 (Wholesale trade and commission trade, except of motor vehicles and motorcycles) or 52 (Retail trade except of motor vehicles and motorcycles; repair of personal and household goods).

722 7220 Software consultancy and supply

This class includes activities in connection with analysis, design and programming of systems ready to use. This usually involves the analysis of the users' needs and problems, consultancy on the most economic solution and producing the necessary software to realise this solution. Also included is the simple writing of programs following directives of the user. Specifically, these activities involve development, production, supply and documentation of order-made software based on orders from specific users and easy-order and ready-made (non-customised) software.

Exclusions: Reproduction of non-customised software is classified in class 2230 (Reproduction of recorded mail). Similar activities carried out as an integrated part of the reselling of software are classified in class 5239 (other retail sale in specialised stores).

Software consultancy provided in conjunction with hardware consultancy is classified in class 7210.

723 7230 Data processing

(not intangible investment)

724 7240 Database activities

This class includes the following three types of database related activities:

- Database development, i.e. the assembly of data from one or more sources.
- Data storage, i.e. the preparation of a computer record for such information in a predetermined format.
- Database availability, i.e. the provision of data in a certain order or sequence, by on-line data retrieval or accessibility (computerised management). The data can be of any kind, such as financial, economical, statistical or technical. The data may be accessible to everybody or to limited users and can be sorted on demand.

Exclusions: Computerised documentation activities provided by libraries and archives are classified in class 9231 (Library and archives activities).

729 7290 Other computer-related activities

This class includes other computer-related activities not elsewhere classified.

5239 Other retail sale in specialised stores

This class includes the specialised retail sale of office supplies and equipment; computers and **non-customised software**; books, newspapers, magazines and stationery; photographic, optical and precision equipment; cleaning materials, wallpaper and floor coverings; watches, clocks and jewellery; sports goods; games and toys; flowers, plants, seeds, fertilisers and pet animals; souvenirs; fuel oil, bottled gas, coal and fuel wood; non-food products not elsewhere classified.

CHAPTER 3. MINERAL PROSPECTING

3.1 Overview

This category is separately available at the 5-digit level in the provisional CPC but is part of a 4-digit category of the ISIC Rev.3.

3.2 Mineral prospecting in the provisional CPC

DIVISION 86 LEGAL, ACCOUNTING, AUDITING AND BOOKKEEPING SERVICES; TAXATION SERVICES; MARKET RESEARCH AND PUBLIC OPINION POLLING SERVICES; MANAGEMENT AND CONSULTING SERVICES; ARCHITECTURAL, ENGINEERING AND OTHER TECHNICAL SERVICES

867 Architectural, engineering and other technical services

8675 Related scientific and technical consulting services

86751 Geological, geophysical and other scientific prospecting services

Geological, geophysical, geochemical and other scientific consulting services as they relate to the location of mineral deposits, oil and gas and groundwater by studying the properties of the earth and rock formations and structures. Included here are the services of analysing the results of subsurface surveys, the study of earth sample and core, and assistance and advice in developing and extracting mineral resources.

3.3 Mineral prospecting in ISIC Rev. 3

DIVISION 74 OTHER BUSINESS ACTIVITIES

742 Architectural, engineering and other technical activities

7421 Architectural and engineering activities and related technical consultancy

This class includes consulting architectural and engineering activities, surveying, geological exploration and prospecting activities and engineering. Architectural activities concern building design and drafting and often supervision of construction, town and city planning and landscape architecture. Engineering and technical activities concern specialised activities related to civil engineering, hydraulic engineering, traffic engineering including project management for

constructions, electrical and electronic engineering, mining engineering, chemical engineering, mechanical, industrial and systems engineering, air-conditioning, refrigerating, sanitary and pollution control engineering, acoustical engineering, etc. **Geological and prospecting activities utilise surface measurements and observation designed to yield information on subsurface structure and the location of petroleum, natural gas and mineral deposits and of ground water. This may involve airborne geophysical surveys, hydrological surveys, etc.** Also included are map making and related land surveying activities.

Exclusion: Test drilling and testhole boring in connection with petroleum and gas extraction is classified in class 1120 (Service activities incidental to oil and gas extraction excluding surveying).

Research and development activities are classified in division 73.

Technical testing is classified in class 7422.

CHAPTER 4. MARKETING AND DEVELOPMENT OF THE ORGANISATION

4.1 Overview

A number of 4- and 5-digit provisional CPC categories in divisions 86 and 87 might be considered as providing services giving rise to intangible investment. They tend to be included with short-term activities in ISIC Rev.3, division 74.

4.2 Marketing and the development of the organisation in the CPC

DIVISION 86 LEGAL, ACCOUNTING, AUDITING AND BOOKKEEPING SERVICES; TAXATION SERVICES; MARKET RESEARCH AND PUBLIC OPINION POLLING SERVICES; MANAGEMENT AND CONSULTING SERVICES; ARCHITECTURAL, ENGINEERING AND OTHER TECHNICAL SERVICES

8540 Market research and public opinion polling services

85401 Market research services

Investigation services designed to secure information on the prospects and performance of an organisation's products in the market. Included here are market analysis (size and other characteristics of a market) and analysis of consumer attitudes and preferences, which may utilise personal interviews, telephone and mail surveys, historical data, etc. Economic and social intelligence services not in connection with mechanised products, such as industry analysis, econometric modelling, demographic analysis, etc., are also included.

Exclusion: Public opinion polling services are classified in subclass 86402.

86402 Public opinion polling services

(not intangible investment)

Exclusion: Similar investigation services designed to gather intelligence on consumer attitudes and preferences are classified in subclass 86401 (Market research services).

8650 Management consulting services

86501 General management consulting services

Advisory, guidance and operational assistance services concerning business policy and strategy and the overall planning, structuring and control of an organisation. More specifically, general management consulting assignments may deal with one or a combination of the following: policy formulation, determination of the organisational structure (decision-making system) that will most effectively meet the objectives of the organisation, legal organisation, strategic business plans, defining a management information system, development of management reports and controls, business turnaround plans, management audits, development of profit improvement programs and other matters which are of particular interest to the higher management of an organisation.

86502 Financial management consulting services (except business tax)

(not intangible investment)

Advisory, guidance and operational assistance services concerning decision areas which are financial in nature, such as working capital and liquidity management, determination of an appropriate capital structure, analysis of capital investment proposals, development of accounting systems and budgetary controls, business valuations prior to mergers and/or acquisitions, etc., but excluding advisory services on short-term portfolio management which are normally offered by financial intermediaries.

86503 Marketing management consulting services

Advisory, guidance and operational assistance services concerning the marketing strategy and marketing operation of an organisation. Marketing consulting assignments may deal with one or a combination of the following: analysis and formulation of a marketing strategy, formulation of customer service and pricing policies, sales management and **staff training**, organisation of distribution channels (sell to wholesalers or directly to retailers, direct mail, franchise, etc.), organisation of the distribution process, package design and other matters related to the marketing strategy and operation of an organisation.

86504 Human resources management consulting services

(see Section 5 on training and other human resources development)

86505 Production management consulting services

Advisory, guidance and operational assistance services concerning methods for improving productivity, reducing production costs and improving the quality of production. Production consulting assignments may deal with one or a combination of the following: effective utilisation of materials in the production process, inventory management and control, quality control standards, time and motion studies, job and work methods, performance standards, safety standards, office management, planning and design and other matters related to production management, but excluding advisory services and design for plant layout and industrial processes which are normally offered by consulting engineering establishments.

866506 Public relations services

Advisory, guidance and operational assistance services concerning methods to improve the image and relations of an organisation or individual with the general public, government, voters, shareholders and others.

86509 Other management consulting services

Advisory, guidance and operational assistance services concerning other matters. These services include industrial development consulting services, tourism development consulting services, etc.

866 8660 Services related to management consulting

86601 Project management services other than for construction

Co-ordination and supervision services of resources in preparing, running and completing a project on behalf of the client. Project management services can involve budgeting, accounting and cost control, procurement, planning of time-scales and other operating conditions, co-ordination of subcontractors' work, inspection and quality control, etc. These services consist only of management services; operating staff services are excluded.

Exclusions: Construction project management services are classified in class 8671 (Architectural services), 8672 (Engineering services) and, for turnkey projects, 8673 (Integrated engineering services).

86602 Arbitration and conciliation services

(see Section 5 on other human resource development)

86609 Other management services n.e.c.

Management services, not elsewhere classified.

DIVISION 87 BUSINESS SERVICES N.E.C.

871 Advertising services

8711 87110 Sale or leasing services of advertising space or time

Services provided in soliciting advertising space or time for newspapers, other periodicals, and television stations.

8712 87120 Planning, creating and placement services of advertising

Planning, creating and placement services of advertisements to be displayed through the advertising media.

8719 87190 Other advertising services

Other advertising services not elsewhere classified, including outdoor and aerial advertising services and delivery services of samples and other advertising material.

4.3 Marketing and development of the organisation in ISIC Rev. 3

DIVISION 74 OTHER BUSINESS ACTIVITIES

7413 Market research and public opinion polling

This class includes investigation on market potential, acceptance, and familiarity of products and buying habits of consumers for the purpose of sales promotion and development of new products, and investigation on collective opinions of the public about political, economic and social issues.

7414 Business and management consultancy activities

This class includes the provision of advice, guidance or operational assistance to business. These activities involve public relations, e.g. through image building and opinion moulding, to improve the relations of the client with the public, the media or others, other than by paid advertisements, welfare and charity affairs, politics, lobbying. Activities in connection with planning, organisation, efficiency and control, management information, etc., combined management consultancy and actual management, e.g. by agronomists and agricultural economists to farms, etc. Arbitration and conciliation between management and labour. Also included are activities of management holding companies.

743 7430 Advertising

This class includes provision of advertising services. Advertising agency activities encompass creating and placing advertising in periodicals, newspapers, radio and television for clients. Outdoor advertising, e.g. billboards, panels, bulletins and frames, window dressing, showroom design, car and bus carding, etc. Media representation, i.e. sale of time and space for various media soliciting advertising. Aerial advertising. Distribution or delivery of advertising material or samples. Also included is the renting of spaces for advertising.

Exclusions: Printing of advertising material is classified in class 2221 (Printing).

Market research is classified in class 7413.

Public relations activities are classified in class 7414 (Business and management consultancy activities).

Direct mailing activities are classified in class 7499 (Other business activities n.e.c.). Production of commercial messages for radio, television and film are classified in the appropriate class of group 921 (Motion picture, radio and television and other entertainment activities).

CHAPTER 5. TRAINING AND OTHER HUMAN RESOURCES DEVELOPMENT

5.1 Overview

Neither the provisional CPC or ISIC systematically identify training services. The nearest category would seem to be adult education. The CPC seem to include training under the consulting category concerned, e.g. software or marketing.

Certain activities of relevance to other human resource development can be identified in the provisional CPC. They are not separately available in ISIC.

5.2 Training

5.2.1 *Training in the provisional CPC*

DIVISION 92 EDUCATION SERVICES

924 Adult education services n.e.c.

9240 92400 Adult education services n.e.c.

Education services for adults who are not in the regular school and university system. Such education services may be provided in day or evening classes by schools or by special institutions for adult education. Included are education services through radio or television broadcasting or by correspondence. The programmes may cover both general and vocational subjects. Services related to literacy programmes for adults are also included.

Exclusion: Higher education services provided within the regular education system are classified in subclass 92310 (Post-secondary technical and vocational education services) or 92390 (Other higher education services).

929 Other education services

9290 92900 Other education services

Education services at the first and second levels in specific subject-matters not elsewhere classified, and all other education services that are not definable by level.

Exclusions: Education services primarily concerned with recreational matters are classified in class 9641 (Sporting services).

See also 86503 Market management consultancy services (page 12 above) and 84990. Other computer services see (page 6 above).

5.2.2 *Training ISIC Rev. 3*

DIVISION 80 EDUCATION

809 8090 Adult and other education

This class includes adult education, i.e. education for people who are not in the regular school and university system. Instruction may be given in day or evening classes in schools or in special institutions providing for adults. Also included is all instruction through radio and television broadcasts, or by correspondence. Instruction may cover both general and vocational subjects. Typically, most of these educational activities presuppose that the student volunteered to attend as he/she has a particular motivation in taking the programme. Provision of literacy programmes for adults is included. Also included are education at first and second levels in specific subject at first and second levels in specific subject matters, not elsewhere classified, and all education which is not definable by level.

Exclusions: Higher education is classified in class 8030.

5.3 **Other human resource development (OHRD)**

5.3.1 *OHRD in the provisional CPC*

86504 "Advisory, guidance and operational assistance services concerning the human resources management of an organisation. Human resources consulting assignments may deal with one or a combination of the following: audit of the personnel function, development of a human resource policy, human resource planning, recruitment procedures, motivation and remuneration strategies, human resource development, labour-management relations, absenteeism control, performance appraisal and other matters related to the personnel management function of an organisation."

There may also be an intangible investment component in class 872.

872 "8720 Placement and supply services of personnel

87201 Executive search services

Services consisting in the search for, selection and referral of executive personnel for employment by others. Included in this category are services provided by senior administrators and managers whose functions generally include planning, organising, directing and controlling activities of private or public sector businesses through subordinate administrators. The services may be supplied to the potential employer or to the prospective employee and may involve the

formulation of job descriptions, the screening and testing of applicants, the investigation of references, and other research.

87202 Placement services of office support personnel and other workers

Services consisting in selecting, referring and placing applicants in employment by others on a permanent or temporary basis, except executive search services. The services may be supplied to the potential employer or to the prospective employee and may involve the formulation of job descriptions, the screening and testing of applicants, the investigation of reference, etc. Included are the placement of secretaries, clerks, receptionists, book-keepers, data entry operators, typists, word-processor operators, nurses, models, maids, ship crews, etc.

86602 Arbitration and conciliation services

Assistance services through arbitration or mediation for the settlement of a dispute between labour and management, between businesses or between individuals.

Exclusions: Representation services on behalf of one of the parties in the dispute and consulting services in the field of labour relations are classified in subclass 86190 (other legal advisory and information services), 95110 (Services furnished by business and employers organisations) and 95200 (Services furnished by trade unions), respectively."

5.3.2 OHRD in ISIC Rev. 3

Human resources management and arbitrational consultation are included in 7414 Business and management consultancy (see Section 4.3 Marketing and development of the organisation in ISIC Rev. 2, above).

749 Business activities n.e.c.

7491 Labour recruitment and provision of personnel

This class includes personnel search, selection referral and placement in connection with employment in any field. The services may be supplied to the potential employer or to the prospective employee and may involve the formulation of job descriptions, the screening and testing of applicants, the investigation of references, etc.

Executive search and placement activities are included as are labour contracting activities, i.e. the supply to others, chiefly on a temporary basis, of personnel hired by, and whose emoluments are paid by, the agency.

Exclusions: Activities of farm labour contractors are classified in class 0140 (Agricultural and animal husbandry service activities, except veterinary activities). Agency activities are classified in class 7499 (Other business activities n.e.c.). Motion picture and other theatrical casting activities are classified in class 9249 (Other recreational activities).

CHAPTER 6. PATENTS, LICENCES, BRANDS AND COPYRIGHT

6.1 Overview

The activities of patent a patent agencies or and standards offices do not seem to be mentioned in the provisional CPC. There is a category for intangible assets. Patenting activities are specified in ISIC Rev.3 as part of 7411 legal activities.

6.2 Patents, licences, brands and copyright in the provisional CPC

DIVISION 89 INTANGIBLE ASSETS

891 Financial assets and liabilities

(not intangible investments)

892 Non-financial intangible assets

8921 89210 Patents

Royalties for the right to use patents, i.e. periodic fees in respect of licences for inventions (novel ideas) concerning the manufacture of patented goods, or the use of patented processes. A patent may be defined as a document, issued by a government office, that describes the invention and creates a legal situation in which the patented invention can normally only be exploited with the authorisation of the patentee.

8922 89220 Trademarks

Royalties for the right to distinguish the goods or services ("service marks") of an enterprise or a group of enterprises. To be protected, a trademark generally necessitates registration in a government office. If a trademark is protected, no person or enterprise other than its owner may use it. This protection is generally not limited in time.

8923 89230 Copyrights

Royalties for the right to use copyrighted materials in determined ways. Copyrighted materials can be original literary and artistic works including maps and audio-visual works, furniture and choreographic works. Copyright protection may include the right to copy or reproduce any kind of work; the right to perform in public; the right to make sound recordings of performances; the right to make motion picture of literary works; the right to broadcast any kind of work; and the right to translate literary works. The author of a work is generally the owner of the

copyright, but sometimes it may be transferred to the author's employer. Copyright protection is generally independent of any formalities, i.e. it starts with the creation of a work.

8929 89290 Other non-financial intangible assets

Royalties for the right to use similar exclusive rights as above, not elsewhere classified, owned by other economic agents.

6.3 Patents, licences, brands and copyright in ISIC Rev. 3

DIVISION 74 OTHER BUSINESS ACTIVITIES

741 Legal, accounting, book-keeping and auditing activities; tax consultancy; market research and public opinion polling; business and management consultancy

7411 Legal activities

This class includes advice and representation in civil, criminal and other cases, i.e. representation of one party's interest against another party, whether or not before courts or other judicial bodies. These activities are generally performed by, or under supervision of, persons who are members of the bar. Civil cases involve infringements of an individual's or corporate's private or civil rights such as liability cases, divorce cases, etc. Criminal actions are cases involving offences against the State and are usually instigated by the Government. Provision of advice in connection with labour disputes, general counselling and advising, preparation of legal documents which do not directly involve a legal suit or which are related to articles of incorporation, partnership agreements or similar documents in connection with company formation. **Also included are activities in connection with patents and copyrights**, with the preparation of deeds, wills, trusts, etc., and the activities of notary public, arbitrators, examiners and referees.

CHAPTER 7. DESIGN AND ENGINEERING

7.1 Overview

Most of these categories are closely associated with fixed capital formation either buildings, public works, etc. or manufacturing equipment. Fashion design is elsewhere in a miscellaneous category.

In ISIC Rev. 3 these activities are grouped with others already cited above.

7.2 Design and engineering in the provisional CPC

The activities are first listed without the associated descriptions. One or two are then given at great strength to illustrate the type of activities involved.

7.2.1 *List of categories*

867 Architectural, engineering and other technical services

8671 Architectural services

86711 Advisory and pre-design architectural services

86712 Architectural design services

86713 Contract administration services

86714 Combined architectural design and contract administration services

86719 Other architectural services

8672 Engineering services

86721 Advisory and consultative engineering services

86722 Engineering design services for the construction of foundations and building structures

86723 Engineering design services for mechanical and electrical installations for buildings

86724 Engineering design services for the construction of civil engineering works

86725 Engineering design services for industrial processes and production

86726 Engineering design services n.e.c.

86727 Other engineering services during the construction and installation phase

86729 Other engineering services

8673 Integrated engineering services

86731 Integrated engineering services for transportation infrastructure turnkey projects

86732 Integrated engineering and project management services for water supply and sanitation works turnkey projects

86733 Integrated engineering services for the construction of manufacturing turnkey projects

86739 Integrated engineering services for other turnkey projects

879 8790 Other business services

7.2.2 *Three examples*

86725 Engineering design services for production processes, procedures and facilities

Included here are design services as they relate to methods of cutting, handling and transporting logs and logging site layout; **mine development layout** and underground construction, the complete civil, mechanical and electrical mine surface plant installations including hoists, compressors, pumping stations, crushers, conveyors and ore and waste-handling systems; oil and gas recovery procedures, the construction, installation and/or maintenance of drilling equipment, pumping stations, treating and storage facilities and other oil field facilities; materials flows, equipment layout, material handling systems, processes and process control (which may integrate computer technology) for manufacturing plants; special machinery, equipment and instrumentation systems; any other design services for production procedures and facilities. Design services consist of one or a combination of the following: **preliminary plans, specifications and cost estimates** to define the engineering design concept; **final plans, specifications and cost estimates** to define the engineering design concept; **final plans, specifications and cost estimates**, including working drawings, specifications regarding materials to be used, method of construction and/or installation, time limitations and other specifications necessary for tender submission and construction and expert advice to the client at the time of calling for and accepting tenders; **services during the installation phase**. Included are engineering design services for buildings if they are an integral part of the engineering design service for a production plant or facility.

86726 Engineering design services n.e.c.

Other speciality engineering design services. Included here are acoustical and vibration engineering designs, traffic control systems designs, prototype development and detailed designs for new products and any other speciality engineering design services.

86733 Integrated engineering services for the construction of manufacturing turnkey projects

Fully integrated engineering services for the construction of manufacturing facilities turnkey projects. Services included here are planning and pre-investment studies to address issues such as the integration of operations, site selection, pollution and effluent control and capital requirements; all necessary structural, mechanical and electrical design services; production process engineering design services including detailed process flow diagrams, general site and plant arrangement drawings, plant and equipment specifications; tender specifications; construction scheduling inspection and acceptance of work as well as technical services, such as the selection and training of personnel, the provision of operations and maintenance manuals, start-up assistance and any other engineering services that form part of an integrated bundle of services for a turnkey project.

7.2.3 Artistic design

87907 Speciality design services

Services consisting in creating designs and preparing patterns for a variety of products by harmonising aesthetic considerations with technical and other requirements. Included in this category are furniture designs, interior designs and decorations and aesthetic designs for various other consumer products. Design services for industrial products are classified in subclass 86726 (Engineering design services n.e.c.).

Exclusion: Graphic design services are classified in group 871 (Advertising services).

7.3 Design and engineering in ISIC Rev. 3

742 Architectural, engineering other technical activities

7421 Architectural and engineering activities and related technical consultancy

This class includes consulting architectural and engineering activities, surveying, geological exploration and prospecting activities and engineering. Architectural activities concern building design and drafting and often supervision of construction, town and city planning and landscape architecture. Engineering and technical activities concern specialised activities related to civil engineering, hydraulic engineering, traffic engineering including project management for constructions, electrical and electronic engineering, mining engineering, chemical engineering, mechanical, industrial and systems engineering, air-conditioning, refrigerating, sanitary and pollution control engineering, acoustical engineering, etc. Geological and prospecting activities utilise surface measurements and observation designed to yield information on subsurface structure and the location of petroleum, natural gas and mineral deposits and of ground water. This may involve airborne geophysical surveys, hydrological surveys, etc. Also included are map making and related land surveying activities.

7499 Other business activities n.e.c.

This class includes a great variety of service activities generally delivered to commercial clients. It involves:

- fashion design related to textiles, wearing apparel, shoes, jewellery, furniture and other interior decoration and other fashion goods.