

**2007 revision process of the activity
classifications:**

Some proposals for a superstructure

by

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prepared for

**17th Annual Meeting of the Voorburg Group on Service
Statistics**

**Nantes, France
September 23-27, 2002**

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Remark:

These papers were not specially prepared for this Voorburg Group meeting: the plenary meeting of the european NACE/CPA group being held by mid-September and having on its agenda most of the conceptual problems concerning the building up of the future activity classifications, we retained the opportunity to double the audiences without a great deal of effort ...

Content:

Among ten papers prepared for the above quoted meeting, we extracted the ones concerning the proposals for a superstructure (most aggregated levels) of the future activity classifications. Sure, the field covered is broader than the "services" but the relevance of the service-good distinction is not so clear in some domains that a broad view often is necessary to well understand the proposals.

The present paper is divided in five parts¹:

- Which superstructure (aggregated levels) for the future classifications? page 4
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- Information and ICTs: which structure, which borderlines? page 25

The expositions are voluntarily (and requested by Eurostat...) short. This implies a lot of potential problems are just quoted to be discussed but not fully developed.

Summary:

The target of this paper is to build a general and some domain-limited proposals for new structures of the future activity classifications taking into account a necessary balance between continuity (avoid great time series disruptions and major breakdowns for the statistical system) and change (new structures of the Economy, users needs). Such constraints imply by the same time a strong evolution but not a revolution.

¹ The other papers prepared for the NACE group (not included) cover

- Which basic principles?
- A critical look on the North-american approach to build up the NAICS
- The articulations between the classifications (activities - products - foreign trade)
- Arguments in favour of the articulation between activity and products classifications
- Auxiliary units (an additional information)

A sentence picked up in the paper could illustrate its state of mind : “new concepts have also to guide us in the structuring of the classifications: one will not be able long to simply reject with arguments of the type "This was never done!" or "It is not possible!" the requests of the economists, statisticians and the professional bodies concerning the Environment domain, the Tourism, the Information sector or the Energy activities. Essentially, their taking into account calls into question the service-good partition like the "usual" borders between the major sectors. And then? We have to build the classifications which will be implemented and generalized during the 2010s. It does not have therefore to be done with the visions of the (even) 90s.”

Which superstructure (aggregated levels) for the future classifications?

1 - The target is to substitute the present “superstructure” of the ISIC/NACE (sections, sub-sections and divisions) by another type of groupings more useful for the economists and the statisticians in their economic analysis work.

2 –The long European discussions (1994 –2001) concerning the MIGs (preceded by the RAEs) showed the difficulty of converging towards superstructures for the economic classifications. What is striking in these discussions is that each one went there from its choices (personnel or nationals) but that never was placed the fundamental question: **"A superstructure to do what? "**. The following paragraphs try to give some elementary answers to such a question.

3 –There are at least five ways of building a superstructure in the activity and product classifications:

- by "families of processes" (primary sector, extraction, manufacturing, financial intermediation, etc.)
- by "channels" (e.g. all the activities following one another or associated until a final "outlet": agriculture and agri-foodstuffs industry whole; raw material extraction for the materials, manufacture of construction materials, construction and, why not, property promotion, together, etc.)
- by "markets" (all the products – and the activities producing them - forming the same market: e.g. the energy-generating products and activities convergent there)
- by "destination" of the outputs (intermediate goods, capital goods, consumer goods, energy, etc);
- anyhow or, in any case, without individual rule and aim (why not).

One will point out that examples are primarily taken in the industrial field. In that of the services, the strong link not to say the difficult distinction between activity and output does not give immediately relevant examples except the sectors of the ICTs and of the Contents.

4 – INSEE is sensitive to the question on the superstructure objectives considering its final two E (... et des Etudes Economiques : and economic studies). That does not mean that we have ideas strictly stopped on what it is advisable to retain but we have some experience in using these aggregated levels.

The main criteria which can be underlined is the relevance of the economic studies in particular when the data are collected at an aggregated level which does not allow other ways for groupings:

- all the social business statistics are not collected on a detailed level, far is itself necessary;
- the short term economic studies and the quarterly National Accounts also depend on aggregated collected data;
- In addition, even when data are collected at a more detailed level, they must be aggregated for most statistical releases and studies. The superstructure of the classification appears to be the natural candidate in such situations, especially as comparisons between data and analyses derived from are made easier at this common aggregated level.

Already more than ten years of experience of the couple NACE–CPA show that the current superstructures are unsuited for studies and summaries so even they have a real significance for such purposes.

At the European level, the European Central Bank (and probably some other Commission bodies) share the same views concerning the needs of useful aggregated items for their economic or social analysis.

5 –Since 1997, the NAICS has brought another lighting than that of the ISIC without meeting as much the expectations of the analysts and of the economists. It contains new ideas, for some undoubtedly interesting, but also positions which are not really supported and the whole was discussed neither at the international level nor at the European level. Everything needs to be done in this field.

6 –The structuring of the future classifications requires the treatment of another problem having effects on the precedent: the relevance of the service-good distinction. The problem is not new if one remembers the discussions on construction (good production or service) with in glance in the classification of the assets (constructions), and/or of the services (work). It is even less so if one adds the activities of manufacturing which only produce services (part of the industrial services) or the services which "produce" goods (or assets).

Is it necessary to persevere, as in the CPC, in this rather out of date dichotomy?

7 –The Information sector of the NAICS is eloquent on this subject: it covers pure services and activities composing part of the "economy of the rights of use" (mainly copyrights) which at the same time produce services (consumed as soon as they are produced) and "goods"

(material or immaterial which can be reproduced and stored, like all the goods). One can add the definition of the ICTs of the OECD which, it too, gathers the activities of good manufacturing and services (telecommunications but also distributive trade) and the Franco-Canadian proposal of the "Contents sector" which presents the even configuration on this subject.

8 –Other new concepts have also to guide us in the structuring of the classifications: one will not be able long to simply reject with arguments of the type "This was never done!" or "It is not possible!" the requests of the economists, statisticians and the professional bodies concerning the Environment domain, the Tourism, the Information sector or the Energy activities. Essentially, their taking into account calls into question the service-good partition like the "usual" borders between the major sectors. And then? We have to build the classifications which will be implemented and generalized during the 2010s. It does not have therefore to be done with the visions of the (even) 90s.

9 – Dealing with the problem of the industrial services properly as that of Information and of the ICTs has to give a generalizable response to the field of the classifications regarding service-good separation and regarding the superstructure of these classifications.

This involves below only a first draft which only covers the most aggregated levels of the classifications (a little more than twenty items and their contents).

The underlying essential aim to the proposed choices is that such a level is directly usable by the statisticians and the economists i.e. without requiring orthogonal regroupings to the structure of the classifications as it was necessary had to be done to build the MIGs.

10 - A fundamental choice directed the proposal: content the means of meeting some new expectations concerning the ICTs, the information, the environment, the energy, the tourism (to some extent) and more generally the economic analysis. The second constraint was to compose groupings not too much unbalanced in terms of sizes to avoid the micro-groupings without great interest in the summaries.

11 - These choices lead obviously to a structure different (but not so) from those of the family ISIC-NACE-CPA but which seems more useful...

This is a choice among other possible ones with pros and cons which we will try to quote.

Last remark before to present the proposal: the number of proposed items can appear a little "too high". It is always possible to group building blocks when they seem not enough sized. Surely we could build a more "revolutionary" proposal (for instance, agriculture grouped with

the agri-foodstuff industries, ICT industries -goods and services- grouped with the content industries, transport of passengers grouped with the other “tourism” industries, etc.), but we have to keep in mind the conditions emphasized in the Summary and be careful to avoid major drawbacks of other “attractive” choices.

The borders between these major sectors pose numerous problems, raised but not analyzed in detail here. The order only is indicative.

1 - Agriculture, Fishing, Forest, Hunting (primary productions)

the problem of the borderline between agriculture and industry can be dealt with the treatment of the units: this means the location of the activities do not depend on the definition on the goods in the HS but on the type of the concerned units and on the processes realized.

agriculture (including fish-farming)

fishing

forest and hunting (including gathering)

2 - Agri-foodstuffs Industries

must really the feedingstuffs be extracted of this, the greatest part of which is that of the pet feedingstuffs which is, in fact, products with the same rules than the human consumption and which are final consumption but not intermediate one.

foodstuffs

beverages

3 - Production of other consumer goods

the main problem of such a grouping is what to do with the printing and reproduction activities? (see below ICTs, Information, Contents)

tobacco industry

clothing (including the present NACE 17.72) and leather industries

chemistry and parachimy of consumption

domestic equipment (apart from electronic domestic equipments)

other miscellaneous consumer goods

printing and reproducing ?

4 - Energy

distribution according to the kinds of energy varies but the whole forms a substitutable and an inseparable grouping. Distributed water never was an energy...

coal, peat, lignite

natural gas and petroleum products

electricity and nuclear industry

steam and cooling products

5 - Production of other intermediate goods

extraction (other than of energy-generating products)

textile industry

wood, paper, paperboard industry

basic chemical industry, rubber, plastics

glass and construction materials

non metallic mineral product industry

metal industries

electric intermediate goods (including cables)

6 - Manufacture of electronic materials and equipments

the ICTs goods which are complementary and form a whole (except for the cables)

electronic components

computer equipment

telecommunication equipment
other electronics equipments

7 - Production of other capital goods

automotive engineering manufacturing
other transport material industries
mechanical equipment
industrial electrical equipment

8 - Repairs and maintenance ?

what do we do with these activities? Are they considered as "identified industrial services" (now, we only have the repairs of domestic goods and some activities in manufacturing. The other ones are mixed with the manufacturing) or do we include these activities with the manufacturing of the considered goods? The ILO and UN specialists ask for a specific category in order to follow up the informal economy (what did the NAICS: group 811). Because of the split of a lot of activities in our economies, more and more units become specialized in such a domain (just repairs and maintenance without manufacturing). This question also is linked with the fourth one of the item 12 (trade): what to do with the repair of the motor vehicles if their trade would be included in a trade section?

9 - Construction

Must the real estate promotion be joined with construction which constitutes the "converters" of the field (as for the manufacturing, classified with manufacturers. Why to have different treatments for different domains?) or do we leave them with real estate activities?

construction of buildings
construction of civil engineering works
other transverse activities of construction
real estate promotion ?

10 - Content sector

All the publishers (books, newspapers, periodicals, films, video, television, radio, databases, etc.). The packaged software and the electronic games which are also "published" are realized by the same type of units. Just a problem: is it necessary to split the packaged softwares between the systems (for the computers) and the applications (for the users)? The same question than for the third item remains: what to do with the printing and reproduction activities?

book publishing
newspaper and periodical publishing
cinema producing
radio publishing
television publishing
database publishing and web portals
packaged software and electronic game publishing
printing and reproducing ?

11 - Services of information and communication technology

The ICTs services except for the wholesale trade of electronic equipment (naturally in trade).
telecommunications
IT services (apart from software publishers)

12 - Activities connected with the environment

The first thing is to well distinguish within the recycling activities, the "recovering" as such of the secondary raw material production (professionals are seeking). Then, is there not a strong convergence between the activities of recovering/recycling and the current division 90?

*In the same way, the treatment and the distribution of the water (which is not energy) are strongly connected with sewage (same units).
Globally, all these activities constitute a continuum difficult to split.*

Water industry including distribution
Sewage services
Recovering - recycling
Non-recyclable waste processing

13 - Trade

The first question is to know how to treat the Intermediaries of the wholesale trade: are they "traders" (they don't buy to resell)?

The following is to define the various trades (wholesale, retail in shop, via Internet, etc).

The third is to position "service distribution": in trade? elsewhere ? (French statisticians are to maintain the attachment of these activities with the services concerned).

The fourth is to know what to do with the division 50 which involves trade and services (French statisticians and professionals would favor the status quo considering the difficult splitting of the division excepted the retail trade of motor spirit and lubricants that could be grouped with trade).

The last one linked with the previous: what to do with the repair services?

motor vehicle trade and services ?
wholesale trade
retail sale trade

14 - "Tourism" (?) services

Such a regrouping is connected with two major reasons:

- *the users of the higher levels of the classifications are macro-economists (in particular short term economists) who wish to see gathered of the sets having the same economic behavior or concerning the same "market",*
- *the "tourism" component (private or of business) is sufficiently homogeneous and determining in the temporal developments not to give up such a regrouping even if the structural components feel different.*

hotels, restaurants and bars
tour-operators
travel agencies

15 - Transports

the structure of this domain requested by the French professionals is to firstly distinguish the passengers and the goods, not the type of transports, so principally the "markets" but not the means (substitutable). A common organization of the codes could allow to better see/enlighten the links between the types of transport and the related equipments (infrastructures).

transports of passengers
transports of goods
management of transport infrastructures
post and couriers

16 - Financial activities

monetary activities
insurance
intermediaries of the financial sector

17 – Real estate activities

With or without promotion ?

real estate renting
real estate agency services

real estate management services
real estate promotion ?

18 - Business advisory and assistance services

NACE 74.1 to 74.4

19 - Operational business services

equipment hiring without operator
NACE 74.5 to 74.8
research and development

20 - Education

Problem: Definition of education as let us hitherto hear or wide definition as in ISCED 97 (including any formative activities now included in the division 92 : with recreative and sport activities)?

21 - Health, social action

health
social action

22 - Other services to the private individuals

Only one question: what to do with the present division 97 which does not cover services but goods?

cultural, recreation and sporting services,
personal services
Domestic services
Division 96
Division 97 ?

23 - Public administration

The central problem of this sector is the very definition: "activities of the public administrations" as in the NAICS? or "public administration" (administration services carried out either by public or by private bodies as in the ISIC/NACE) ?

activities of public administration [(s) (es) (s)]?
activities of the international organizations and foreign representations

12 - Summary

1 item for the *primary* sector (1/24 for a sector which covers less than 5% in EU),

7 items for "*manufacturing*" (including repairs) (7 to 9 / 24 -depending how do we count the following line - for less than 30% of the value added),

3 "*goods/services*" items (construction, contents, environment),

13 items for the *services* (13 to 15 / 24 - depending how do we count the previous line - for more than 60% in our economies).

In the European economies, the relative weights of these items vary approximately from 1 to 3 respectively with each one. They distinguish as much the markets as they cover the large families of processes.

13 - These less than 26 groupings could be coded by a *letter* like the present sections.

If we succeed to split such an aggregated level in less than 100 items (it does not seem too difficult to realize), an intermediate "semi-aggregated" level (about 50 items) could provide something "equivalent" to the present divisions. This last level could be coded with a letter + a either a figure or a letter. The "100" one could be coded with two figures. A further international detailed level could split the last one in about 200 items (coded with three digits), what would be quite enough as international common structure: the experiences to develop national classifications for the developing countries showed a lot of difficulties to start a further development from the four digit level of the present ISIC. For further details, regions or supra-national organizations could do as they would want.

14 - One remark can be done by some classification specialists considering the changes in borderlines such a structure implies: "some industries we are habit to see together (e.g. chemistry) are split between different groupings". This is right but voluntary: the economic analysis implies to well distinguish the "markets" (when it is possible). But as everybody can verify, the detailed structure still allows to merge the parts of such split industries whether one want or need to build up them again. Both approaches are possible but the proposed structure put as first criterion the answer to the basic question: a superstructure to do what?

Structure in trade and products of trade

1 - Presently, two potential problems lead to difficulties in the trade domain of ISIC/NACE. The Section G (Trade) is organized in two steps through three criteria:

- First the activities related to the motor vehicles are separated (Division 50). Such a division includes not only the various trades of these goods (and related articles) but also the services for these equipments; this leads to a distinction between the motor vehicles and the other goods;
- Concerning these other goods, the rest of the section is divided depending on
 - the stage of trade: Division 51 (wholesale trade including the intermediaries of the wholesale trade); Division 52 (retail trade divided in various sub-types -in stores, on markets, etc-)
 - the ranges of the traded products
 - the “distribution formats” (in stores, on markets, by mail order, etc).

2 –There is another reason which leads to difficulties with the product-activity articulation: the mixture of the criterias. This fact is primarily visible in the sector of trade where "products" compared to all the commercial activities result in mixing the criteria building the items.

Explanation:

- almost the whole of the "products of trade" are in fact the reorganized ranges of goods according to the distribution channels (which make it possible to calculate the margins by group of products);
- the other "products" are compared to different distribution formats (sales of non-specialized stores, sales of out-of-store trades, sales by mail order, etc) which exist in the CPA only because there "must" be at least a product taking into consideration an activity.

3 –Such a mixing is not really clear and remains questionable: statisticians by the same time need for their analysis as well *detailed ranges* of goods for the estimates of margins indicators as the *distribution formats* (or channels) but these two criteria are not of the same concepts:

- the first is connected to the traded goods,
- the second to the distribution format (wholesale, retail sale, in stores, on markets, via Internet, specialized or not, etc).

Having products by range for the NACE activities 52.2 to 52.4 (retail trade of new goods in shops) and by type of trade for the activities 52.1, 52.5 and 52.6 is not very coherent.

4 – Since both types of information are necessary and that they cross largely in a “traded range of products – types of trades” matrix (even if there are undoubtedly a lot of empty cells in such a matrix), **why not take the system retained in the CPC version 1.1 which, in only one coding, crosses both criteria to distinguish the services rendered by the various trade activities (two or three digits which can thus point out the activities) and the ranges of goods (one or two digits)?**

5 – The ranges structured on two digits allow to treat on a hierarchical basis various range levels according to the distribution formats: It is necessary to retain at least two ranges of product amplitudes into account according to the distribution formats: in NACE, currently nine ranges for the intermediaries of the wholesale trade are retained, about fifty for the wholesale trade and about thirty for the retail trade in stores (not all goods are retailed); there is no real split of the ranges for the other retail trade types.

6 - The motor car trade and services distinction in a specific division was decided because of the association of trade and services related to such products most often difficult to split and to distinguish. Apart from the retail trade of motor spirits and lubricants more specialized (most often not associated to other trade and services), remain the other situations of activity associations not changed along the time (e.g. dealers and garages, sale and installation of equipment, by the same time).

7 - Another problem concerning the motor vehicle specificity comes from a tenuous borderline between the wholesale trade and the retail trade of the motor vehicles: considering a wholesale trade definition which considers this stage deals with “enterprises” (as opposed to final consumers) we can verify a broad part of the motor vehicle sales to enterprises are realized either directly by the manufacturers themselves or by the motor car dealers (but not dealers specialized in wholesale or retail trade). How to split such a trade between wholesale trade and retail trade?

A majority of the French statisticians and professionals think **such a division has to be maintained** even such a solution creates some difficulties considering the field of the trade (split between motor vehicles + related equipments on one hand and the other goods on the other hand) and a particular treatment of these repairs (not with the other repair activities whether a grouping was decided).

8 - In the present proposal, a trade section remains devoted to “**goods**”. Even we know more and more services are traded or more exactly, that intermediaries sell services on a fee and contract basis (e.g. telephone time and subscriptions, TV programs subscriptions, tickets of any types even of lotteries), after an analysis of the problem, the French statisticians think there is no good reason to “externalize” such activities and to put them away from the corresponding services, apart from the already distinguished activity of the so called “travel agencies” which do not only “sell” travels and transport tickets but a lot of other ones (theater, sport, amusements, guides, even restaurant reservations). Nevertheless, a stronger thought is necessary to measure the pros and cons of such a choice for the future.

9 - ***Proposed list of trade types***

The list of trade types is very limited (12 items with the top distinction).

The chosen codes just are examples in order to clearly present the method. For that reason the chosen codes concerns “divisions” 53 and 54 (which do not exist) and Z for the trade section.

Z Trade

- 50 Motor vehicle trade and repair
 - (501 *Trade of motor vehicles*)
 - 502 Wholesale trade of motor vehicles
 - 503 Retail trade of motor vehicles
 - 504 Repair of motor vehicles
 - (505 *Trade of motor vehicle equipments and accessories*)
 - 506 Wholesale trade of motor vehicle equipments and accessories
 - 507 Retail trade and installation of motor vehicle equipments and accessories
 - 508 Trade and repair of motorcycles

- 53 Wholesale trade
 - 531 Wholesale trade on a fee and contract basis
 - 535 Specialized wholesale trade
 - 539 Non-specialized wholesale trade

- 54 Retail trade
 - 541 Non-specialized retail trade in stores
 - 542 Specialized retail trade in shops and stores
 - (543 *Specialized retail trade out of shops and stores*)
 - 544 Retail trade on market and stall
 - 545 Retail trade via vending machines
 - 546 Door-to-door retail trade and in-home demonstration
 - 547 Mail order and via Internet retail trade
 - 548 Auctioning (excepted for juridical purposes)

An intermediate item (543) grouping any types of retail trade out of shops and stores (which even in France do not cover more than 5% of the retail sales) could be useful for a lot of countries in which the last five items are of a limited size when they exist.

On the same way, optional groupings in the “Motor vehicle trade and repair” item (501 and 505) could avoid too many items in such a division for countries where the units realize both types of trades.

10 - *Proposed list of product ranges*

Based:

on the hypothesis a division equivalent to the division 50 remains (no motor vehicles, nor related equipments and accessories, no more motorcycle in the list. But the motor spirits and lubricants as explained above);

and cross referencing the various lists of traded products ranges used in the wholesale trade and retail trade divisions of NACE and in the CPC v1.1 (62 items grouped in 10 groupings).

In case of “semi-specialized” trades (in all or part of the products included in a one digit grouping, the second digit can be replaced by “0” (e.g. Food and beverages without specialty: 10).

Note: considering the level of details to be “cleverly” coded, it seems not possible to only use nine groupings (from 1 to 9) but necessary to also use “0” so ten groupings. Such a trick goes out of the classification specialists habits but...

0 *Agricultural raw materials and live animals*

- 01 Grains and oilseeds and oleaginous fruits, seeds and animal feed
- 02 Flowers and plants
- 03 Live animals, including pet animals
- 04 Hides, skins, and leather
- 05 Unmanufactured tobacco
- 09 Agricultural raw materials, n.e.c.

1 *Food, beverage and tobacco*

- 11 Fruit and vegetables
- 12 Meat, poultry and game; meat products
- 13 Dairy products, eggs and edible oils and fats
- 14 Sugar, confectionery and bakery products
- 15 Coffee, tea, cocoa and spices
- 16 Fish and other seafood
- 17 Food products n.e.c. including frozen food
- 18 Beverages
- 19 Tobacco products

2 *Textiles, clothing and footwear*

- 21 Yarn and fabrics
- 22 Household linens, (net) curtains and diverse household articles of textile materials
- 23 Articles of clothing, articles of fur
- 24 Clothing accessories
- 25 Footwear

3 *Household appliances, articles and equipment*

- 31 Household appliances
- 32 Miscellaneous household utensils, cutlery, crockery, glassware, china and pottery
- 33 Wickerwork, cork goods, cooper's ware and other wooden ware
- 34 Articles for lighting
- 35 Floor and wall coverings

- 36 Household furniture
- 37 Electro domestic equipment
- 39 Household articles and equipment n.e.c.

- 4 *Miscellaneous consumer goods*
 - 41 Books, newspapers, magazines
 - 42 Stationery
 - 43 Leather goods and travel accessories
 - 44 Photographic, optical and precision equipment
 - 45 Watches, clocks and jewellery
 - 46 Sports goods (incl. bicycles)
 - 47 Games and toys
 - 48 Musical instruments and records, music scores and tapes
 - 49 Miscellaneous consumer goods n.e.c.

- 5 *ITC products*
 - 51 Radio and television equipment
 - 52 Computers and packaged software
 - 53 Other electronic equipment
 - 54 Electronic components and semi-products

- 6 *Chemical and pharmaceutical products*
 - 61 Basic industrial chemicals, plastics and synthetic resins
 - 62 Fertilizers and agro-chemical products
 - 63 Cleaning materials
 - 64 Pharmaceutical and medical goods
 - 65 Surgical and orthopedic instruments and devices
 - 66 Perfumery articles, cosmetic articles and toilet soaps

- 7 *Construction materials and hardware*
 - 71 Construction materials and flat glass
 - 72 Fittings, fixtures, ceramic sanitary fixtures and materials for heating
 - 73 Wall paper and floor coverings
 - 74 Paints, varnishes and lacquers
 - 75 Hardware and hand tools

- 8 *Machinery, equipment and supplies*
 - 81 Transport equipment
(except motor vehicles, motorcycles, bicycles and related parts and accessories)
 - 82 Office machinery and equipment including office furniture
 - 83 Agricultural, lawn and garden machinery and equipment including tractors
 - 84 Mining, construction and civil engineering machinery and equipment
 - 85 Machine-tools
 - 86 Electric materials and equipment
 - 87 Other industry specific machinery and equipments
 - 89 Other machinery and equipment n.e.c.

- 9 *Other products*
 - 91 Solid, liquid and gaseous fuels and related products
 - 92 Motor spirits and lubricants
 - 93 Metal ores and metal in primary forms
 - 94 Wood in the rough
 - 95 Paper and paperboard
 - 96 Textile fibers
 - 97 Waste and scrap and materials for recycling
 - 99 Other products n.e.c.

11 - Maybe (maybe) the number of details of such ranges can seem high and not necessary. This first draft, mainly based on the CPC version 1 list can always be aggregated in order to simplify and to better match with the ranges found in the economic reality.

12 - Such a system would allow an interesting flexibility considering the various trade organizations around the World:

- at the international level, one can distinguish the various distribution formats (two or three digits) associated to the product range groupings (one digit). Such a detail of ranges is broadly enough for a lot of developing countries in which the ranges of traded products do not follow clear specializations apart from “families of products”. If necessary it would even be possible to use the semi-grouping items in the motor vehicle division and in retail trade (501, 505 and 543) in order to simplify the list of distribution formats;
- for developed countries, the detail of the distribution formats, necessary for economic analysis, joined to the use of the detailed ranges (or a mixing with some product families, if wanted) would provide enough details for any statistical purposes considering an activity classification. For more detailed ranges, the central product classification, could bring a potential further detail (with six digits as in CPA for instance).

This would also allow a precise activity-product link.

13 - One can easily verify the existing NACE classes belonging to divisions 50 to 52 (apart from 52.7) can be built or reconstituted apart from two:

- 51.63 Wholesale trade of machinery for the textile and clothing industry (why did we create such an item?)
- 52.24 Retail trade of bakery products (grouped with the sugar and confectionery because of a lack of free place but also because of a strong association between these traded products).

Transport structure : the request of the professional organisations

1 - From common meetings with the transport professional organisations, the statisticians specialists of the Transport domain and the National Post body, a common agreement on a possible classification structure appeared.

2 - The first request of the professionals is to firstly distinguish the passenger transports and the commodity transport. Their main argument is these two sub-domains belong to very different markets to be analysed as a whole. Even this can pose some problems considering the habits (see below), the statisticians agree with such a proposal.

3 - The only second criterion to structure the domain could be the mode of transports (railway, road, air, etc) and the third one the various types either of commodities transported or of specific type of transport.

4 - By the same time a common coding system would allow to allocate the modes as well to the passenger and the commodity transports as to the activities related to the transport infrastructure management.

5 - The present NACE structure shows the existing classes are not so far what would be requested by a "reorganization" of the domain: five needed splitting.

Mode	Passengers	Commodities	Infrastructures
1 Railway	60.10		63.21p
2 Road	60.21p, .22, .23	60.24	63.21p
3 Pipelines		60.30	<i>Managed in transport</i>
4 Other land transp.	60.21p		<i>Managed in transport</i>
5 Inland water	61.20		63.22p
6 Sea and coastal	61.10		63.22p
7 Air, Space	62.10, .20, .30		63.23
8 Multi-modal	60.21p	<i>Does it exist?</i>	<i>Multimodal platforms</i>
9 Supporting and auxiliary services		63.40p	63.11, .12
Post		64.11, .12, .40p	

6 - The problems enlightened by such a structure would be limited:

- The splitting of the railway transport between passengers and commodities will not be obvious in some countries (France is one of them but we don't know what will be the results of the active deregulation during the next years);
- The splitting (between passengers and commodities) of the sea and coastal transports on one hand and the inland water transports on the other hand do not exist in the NACE but the concerned units are sufficiently different to insure it is possible;
- The management of pipelines and of some land transport systems (cable cars, ski lifts) are included in the exercise of the transport activities and not distinguished.

7 - Taking into account the various criteria and constraints provide a "transport classification" in which the statistics can be managed as well by type of transported things and by transport mode (third digit).

As example, imagine a transport section V and four divisions using the same codes than presently. We get the following structure:

V Transports

61 Passenger transports

- 611** Passenger railway transport
- 612** Passenger road transports
- 614** Other passenger land transports
- 615** Passenger inland water transports
- 616** Passenger sea and coastal transports
- 617** Passenger air transports
- 618** Passenger multi-modal transports

62 Commodity transports

- 621** Commodity railway transport
- 622** Commodity road transports
- 623** Pipelines transports
- 625** Commodity inland water transports
- 626** Commodity sea and coastal transports
- 627** Commodity air and space transports
- 628** Commodity multi-modal transports
- 629** Organisation of the commodity transports

63 Supporting and auxiliary transport activities

- 631** Supporting railway transport activities
- 632** Supporting road transport activities
- 635** Supporting inland water transport activities
- 636** Supporting sea and coastal transport activities
- 637** Supporting air transport activities
- 638** Management multi-modal platforms activities
- 639** Cargo handling and storage

- 64 Post and courier activities**
- 641** Mail delivery
- 642** Courier activities
- 649** Auxiliary mail and courier services

Waste processing and linked activities

1 - To describe the different groups of activities, we need a global reflection including all the operations related to waste processing². The alternative is the following :

- either a waste is potentially a product with an economic value therefore recyclable, it is what is mainly described in division 37 of NACE
- or a waste is strictly and definitely only a waste which is managed according to different processes, it is what is mainly described in division 90 of NACE.

It also exists two third intermediate ways (incineration with energy recovery; composting) which only concerns some types of wastes.

2 - Expressed in this way, the two main types of processes - *recycling* on one hand and *waste management* on the other hand - seem clearly separated according to physical characteristics of wastes. Indeed, the processing techniques depend on the physical nature of the wastes (one does not process out of used cars as household refuse) but they more depend on the cost of these processings, of the cost of materials and of the (European and national) regulation in force. In fact, the two main types of processings can broadly be substituted (with different consequences over environment) and the border between them is very permeable and constantly evolving. With the reinforcement of regulatory constraints, we witness a strong trend towards replacement of management processes of waste by recycling processes.

3 - Consequently the two processes *cannot be independently analyzed*. Waste processing must be analyzed as a global problematic including (at least) two successive phases: first recycling, then when all possibilities of recycling are exhausted, the management of ultimate non recyclable wastes. Such an analysis leads to a connection of these activities in a sector linked to the "environment" and which could form a section.

² The sewage services (class 90.01) make up an important domain of waste processing. But in my opinion these activities must be the subject of a specific treatment for several reasons, even if they partly come within the process described in this note.

- a) In terms of product, on one hand, recycled sewage does not constitute a secondary raw material which is enhanced entering directly in an industrial process as other recycled wastes, on the other hand, non recycled sewage does not constitute a dumped waste as non recyclable wastes. Used water, recycled or not, has not therefore the same nature as other wastes. Just the materials (sludge) extracted from sewage are wastes and just the sludge treatment could be described in waste processing.
- b) In terms of activity, there is a technical and economic proximity between the management of improvement networks and the management of supply networks. Indeed the pipes for drinking water and those for sewage are not the same but the networks are of a same nature and even physically overlap and are often managed by the same operators. So it seems necessary to keep sewage services and collection, purification and distribution of water very close.

The first phase of the process is recycling

4 - Recycling is the whole set of activities which allow to transform wastes of any nature into products which can be used as inputs of an industrial production process. The products generated by recycling are generally called *secondary raw materials* and have the same properties than the products of the same nature outputs of a primary production cycle.

5 - To result in a secondary raw material, one must go through different steps. The main of which are the *collection* of materials, *sorting* of materials and *mechanical or chemical processing* of materials. After this chain, the materials which are of no value and which cannot be the subject of a recycling operation are ultimate wastes the processing and management of which are described in the chain of non recyclable waste processing.

6 - The operation consisting in processing the materials to make them usable as secondary raw materials is therefore preceded by preliminary operations (collection and sorting) which condition the properly called *activity of processing* these materials. These preliminary operations are part of the whole process. Without collection and sorting, there is no recycling, it is therefore important to well characterize these operations of preparation to recycling.

a - Collection : Wastes are generally not far from the users (enterprises or households) who may be very numerous and scattered. An operation of concentration of the wastes is therefore required.

b - Sorting : waste processing generally is a technical process which applies to materials with an homogeneous composition. Before processing them, it is therefore necessary to sort the wastes to separate materials. Sorting operation can be engaged simultaneously with collection or afterwards. For some wastes, sorting may be a simple operation requiring no industrial equipment ; for others, it may be a genuine industrial process (breaking-up of ships, breaking-up of vehicles, chemical process). In all cases it forms a part of a global process of waste processing.

c - Processing of recyclable wastes : It is an industrial process adapted to the nature of the waste which allows to transform recyclable wastes into secondary raw material. The different outputs of this process will serve as inputs to different industrial activities described in different items of the classification. One can quote for instance, the transformation of plastic wastes into granules, the grinding of glass, compacting or fritting of metal, chemical processes. At the end of these steps, There are two categories of products : *secondary raw materials* the further processings of which do not belong to the sector of waste processing and the *non recyclable wastes*.

Remark: this second step is not mandatory. After collection, sorting and/or some more “preparatory operations” (for instance cleaning), the sorted and prepared wastes can directly return to the consumption channel without further process: for instance, Emmaüs International is a “recoverer” but not a “recycler” (the outputs are new second-hand goods but not secondary raw materials). This could be named “Re-use”.

Re-use is a form of enhanced value which concerns transformed products (for instance used cloths, empty bottles) and which assumes also a “return” circuit with supplementary operations (collection, sorting, cleaning, maintenance) intended to give back to the products their initial characteristics (hygiene, solidity).

Some wastes (notably car wrecks but also used household electrical appliances, computers) contain parts with a value of use as second-hand final good. The operations of collection, sorting, extracting, storage and marketing of these goods cannot be considered as trade since a “transformation” (extracting, sorting) is needed to allow to sell some parts. Also, after further “preparation”, the useless remaining parts are sold to recovering or recycling units.

The trade of wastes, crumbs and scraps has to be **limited** to the units which purchase such “things” (most often they just collect without buying: they are even paid to do this) then resell them to recovering or recycling units **without any operation** or the activity would be considered as recovering.

The second part of the global process is processing of non recyclable wastes

7 - Non recyclable wastes are materials which no longer can be transformed into secondary raw materials (for technical reasons but also for cost reasons). Some of these non recyclable wastes may however be the subject of specific processings, incineration or composting, which allow to make them less polluting, less voluminous and a source of some (limited) value : incineration and composting produce as ultimate results not recyclable wastes.

After having exhausted all the possibilities of transformation of wastes, there only remains therefore ultimate non recyclable wastes. The only processing of these ultimate non recyclable wastes is dumping (controlled dump, burying, neutralization).

Remediation and clean-up of soil

8 - Generally wastes have a negative impact on environment in which they are (as any other results of the human activities...). So waste processing is not limited at materials but includes restoration activities of places they have polluted.

Other activities linked to the environment

9 - If we create a section devoted to the activities linked to environment, this could be a good opportunity to include in such a section the other activities not so far from or indirectly linked to the previous quoted ones:

- *Nature conservation* (natural areas, landscapes, endangered species). Such activities are upstream and downstream the water industry and parallel to the waste processing. Globally, they are part of any quoted activities (including recovering and recycling).
- *Pollution controls*. Even if these activities are technical services, their target is directly linked to water and waste processings as to the nature conservation. Why to push away such activities now lost (CPA 74.30.11) among technical services more linked to the production processes?

A possible structure

A “environmental activity sector” could be structured as follows :

Section X : Activities linked to environment

X1 : Water treatment

X11 : Collection, purification and distribution of water

X12 : Sewage services (collection et treatment)

X2 : Recovering, recycling and waste management

X21 : Recovering and recycling

X211 : Recovering (first step: preparation to recycling or to re-use)

X212 : Recycling (second step when it exists: output = secondary raw material)

X22 : Non-recyclable waste processing

X221 : Ordinary waste processing (incineration, composting, dumping, etc)

X222 : Dangerous waste processing (including neutralization, remediation and soil clean-up)

X3 : Other activities linked to environment

X31 : Nature conservation (natural areas, landscapes, endangered species)

X32 : Pollution controls

Information and ICTs: which structure, which borderlines?

1 - Concerning the "Information" activities no less than three definitions or proposed definitions cover the domain:

- The **ICTs activity** definition provided by the OECD: activities which contribute to the display, processing, storing and transmission of information through electronic means;
- The **Information sector** of the NAICS: comprises establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data,
- The "**Content sector**" studied by the OECD: activities primarily engaged in publishing and/or electronic distribution of contents products.

These various definitions partially overlap.

2 - If one structures the definition of the ICTs by breaking up it, one gets this:

ICTs goods (including associated services) = Cables + (electronic components + computer equipment + all "electronic" equipment) = Cables + sector of electronics + Wholesale trade of the ICTs goods + renting (??)

ICTs services = Telecommunications + IT activities (including software publishing)

ICTs sector = ICTs goods + ICTs services
= Cable manufacturing + "electronic" good manufacturing + IT activities
+ Telecommunications + ICTs goods wholesale trade + renting??

3 - If one does the same for the Information sector of the NAICS, one obtains:

Information sector = Telecommunications + Book/newspapers/periodical publishing + software publishing + databases + cinema + radio + television + news agencies + libraries and archives

"Book/newspapers/periodical publishing + Software publishing + databases + cinema + radio + television + news agencies" can be summarized in "Publishing": *the publisher is the body which makes public and markets an original work*. This generic term well covers the various quoted activities.

Remark : publishing in the NAICS definition includes software publishing (not in the "content" definition)

Information sector = Telecommunications + Publishing + Libraries and archives

4 - Lastly, the same exercise for the sector of the contents led to:

Content sector = Paper publishing + reproduction of the sound and of the image + databases
+ cinema + radio + television

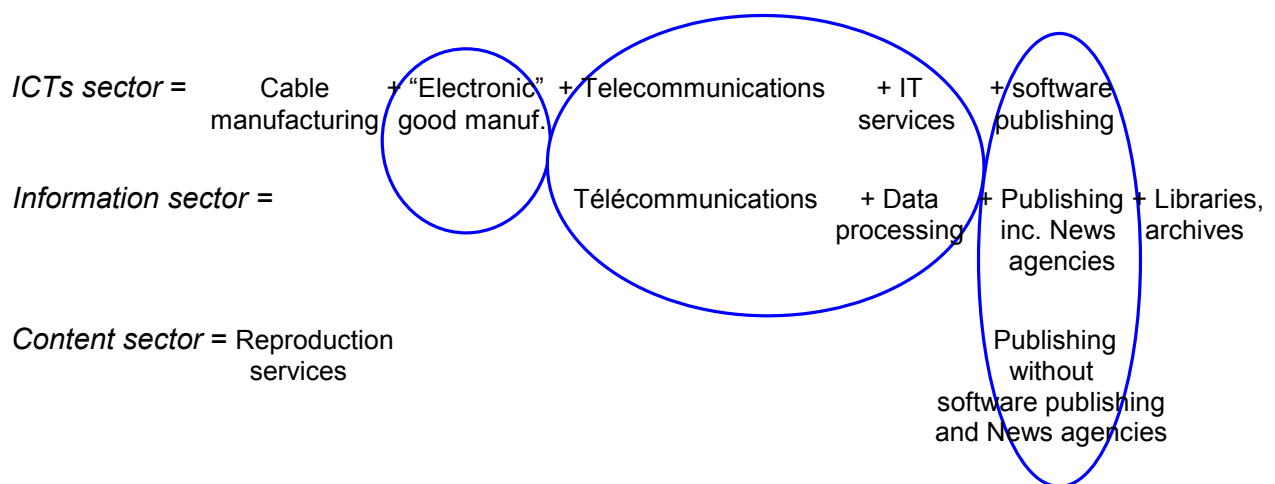
Reproductions = industrial services

“Book/newspapers/periodical publishing + databases + cinema + radio + television” =
“Publishing” (partially).

Remark: “publishing” in the content sector definition doesn’t include software publishing and news agencies which are included in NAICS

***Content sector* = Reproduction services + Publishing**

5 - Now let us compare the contents:



6 - Before to try to structure and classify these activities, just analyze their global meaning even they do not exactly cover the same contents :

- The *cable manufacturing* is a part of the necessary *equipments* of the following activities ; sure the cable manufacturing is part of manufacturing because *transforming* things and creating new goods. We don’t really see how such an activity could be grouped with the following ones and why it would be separated of more similar production activities (electrical materials). Another objection is linked to the content of such an activity: the cables are shared between the power ones and the telecommunication ones. Whether such different types of cables could be split, why not to link the “telecommunication cables” with the ICTs goods?

Last remark concerning that field: why the *optic fibers* (included in NACE 33.40) are not proposed to be included in the ICTs? These types of “cables” are fully involved in the information transmission and only used for such a purpose...

- The *reproduction services* : This group of activities includes a conceptual problem. Concerning the printing and more generally the reproductions, the solution is not so obvious:

- these activities are industrial services when they are independently realized (the publishers keep all the rights concerning the derived products),
- they can be considered as part of the "information dissemination process": the information materialized on media remains information. Sure new products are realised (new physical forms) but the contents remain the same ones and the new products are bought for their content and not for the media.

For all these reasons it is not clear whether these activities have to remain in manufacturing or to be included in a larger ICTs sector or whether they must be linked to the content sector with all the publishers. To be further analyzed.

- The *manufacturing of the "electronic" goods* which are used for the following activities (collection, treatment, broadcasting, transfer and reception of information) ; contrary to the previous analysis, all the equipments quoted here have a lot of common specific aspects:

- they all concern the information at a given stage of its process (collection, treatment, broadcasting, transfer and reception) even the electronic components which are part of the quoted equipments;
- all are mainly based on the same "components" and technology (printed and integrated circuits, electronic components and cards; software).

They can be grouped together in order to build an "*ICT equipment manufacturing*" (or "Electronic materials and equipments") item. Presently, in the ISIC/NACE, these equipment manufacturings are split between 30.02, 32 and 33.30 but in the NAICS, they are grouped together in the same three-digit item.

- The *telecommunications* which are the *pipe exchange* of the information ; the telecommunications are fully involved in the information process (transfer, exchange) but are neither an equipment manufacturing nor a content producer, just a service using the firsts and transmitting the seconds. So, it seems better to keep them as a partially independent activity (with the IT services).

- The *IT services* contribute, in sub-contracting, to the *data processing* and *software development* used in the previous activities ; they are used by a broad part of the other quoted activities as necessary services (no software → no data process, no databases, no telecommunications, etc).

These last two activity families form the ICTs services.

- The *publisher* in the broad sense (paper publishing, databases, cinema, radio, television, news, software publishing, electronic games) which is the *producer* of information ; The publishing (with its large meaning) constitutes the core of the Information sector and an activity family by itself: any quoted activities *produce* a certain type of information (before them there is no information or contents because they are not yet open to the public), take the commercial risk to produce this information, include the responsibility of the contents, have the exclusive rights to use these contents as they want (re-publish, materialize, sell the rights, etc).

Depending on what to do with the reproduction services (see point 7), these last services could be added to the publishing to constitute the “content sector” or not.

- *Libraries/archives* (why this activity and only this one?) are services which *use* the produced information ; These activities should (naturally) be classified in cultural services.

7 - It remains three groups (see balloons point 5) of “homogeneous” activities which could constitute three sections and at least fifteen divisions:

Manufacture of electronic materials and equipments (or ICT equipment manuf.)

- electronic components
- computer equipment
- telecommunication equipment
- other electronic equipments

“Publishing”

- book publishing
- newspaper and periodical publishing
- cinema producing
- radio publishing
- television publishing
- database publishing and web portals
- software publishing ?
- electronic game publishing
- printing and reproduction services ?

ICTs services

- telecommunications
- IT services

8 - The economic weights of these three proposed sections respectively cover in France:

	VA in billions €	% of GDP
"Electronic" materials and equipments manufacturing	15.0	1.2
Content sector (incl. Printing and reproductions)	20.7	1.7
ICTs services	30.5	2.5

The weights of such sections appear a little low (the mathematical expected value for about 20/25 sections is between 4 and 5%) but such an impression is made up for homogeneous groupings also requested and useful for the statisticians and the economists.