

## **Towards the construction of a sector of information in activities and products classifications in 2007**

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August 2001

Everything concerning information has taken an exceptional scope with the development of the technologies related to electronics and notably the digital technologies. Hence the interest in the construction of a sector seeking to regroup activities or products beforehand scattered over the classifications.

Several “definitions” have already been the subject of applications in existing classifications : The countries of ALENA have set up in 1997 a classification of activities (NAICS) including a sector of activities named “*Information sector*”. Besides the experts of OECD, after having defined the “*TIC sector*” seek to define a “*Sector of contents*” complementary to the TIC sector allowing to define the outline of an information sector referring to ISIC rev3. These two approaches have common points and many differences. For the detailed description of these two approaches, one can refer on the one hand to NAICS and its official documentation and on the other hand to the documents carried out by OECD<sup>1</sup> experts.

### **1 – The different current definitions**

#### ***1.1 – The information sector of NAICS (or of the French speaking SCIAN)***

NAICS is the first classification having, as soon as 1997, defined an activities sector regrouping traditionally separate and even scattered activities in the classifications. It created a division which regroups the activities related to “information” and to culture : 51 – Information industry and cultural industry (to be noted that the American version of NAICS only retains the item “Information sector”).

This sector comprises the establishments the main activity of which consists in *producing and disseminating* (except through methods proper to wholesale or retail sale) or *to allow the dissemination of information products and cultural products* such as written works, music works, recorded interpretations, recorded dramas, softwares and data bases. Are also included the establishments which *provide an access to equipment or expertise to process information*.

The characteristics proper to information products or cultural products as well as the production and distribution processes allow to distinguish this sector from those which produce goods and services. More precisely,

- *the value of these products lies in their informative, educational, cultural or entertaining contents and not in the format in which they are distributed*. Most of these products are protected from illegal reproduction by the law on royalties. Only the holders of the right of property on these works are authorized to duplicate, modify, improve and distribute them. The costs of acquisition and exploitation of these rights are often high.

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<sup>1</sup> Refer notably to the Census Bureau sites for the United States and of Statistics Canada for NAICS and the DDM notes for the experts of OECD.

- the *intangible* nature of the contents of information products and cultural products allow them to be distributed in various forms. For instance films can be presented in a theater, broadcast on TV, on a pay per view channel, bought in the form of video-cassettes or rented in a local video club ; the sound recording can be broadcast on radio, integrated in multimedia products or sold in a record-dealer ; softwares can be bought in a store or downloaded from a server ; papers can be bought in a kiosk or consulted on line. Besides the progresses of information technology are revolutionizing the distribution of these products. The inclusion of the telecommunication enterprises and of Internet services providers in the present sector attests the more and more important role played by the establishments which set these products to the disposal of the public.

*We shall not deal here with the border problem between intangible contents (implying « in information ») and other intangible goods such as the patents which are not the concern of information in the meaning referred to here but for which one can pick out obvious parallelisms between the “information sector” and Research.*

The main components of this sector, are *publishing including softwares film and sound recording industry, radiotelevision and telecommunications and information and data processing services*. Some establishments devoting themselves to culture-related activities are put in other sectors of NAICS.

## **1.2 – The T.I.C. (Information and communication technologies) of OECD**

On request of most states searching for a common definition allowing a coordinated follow up of the activities linked to Information Society, OECD has determined a set of activities defined in terms of the classes of ISIC rev3, fit up to this end in the framework of the “so-called polishing” of 2002.

OECD presents the approach that led to the retained definition in the following way : it was natural to favour an approach by products, matching the scope of TIC *to the whole instruments (or products) allowing to use electricity as the information vector*. After having established the list of TIC products, it was sufficient to determine the list of “the economic activity sectors the main activity of which has the object to produce these information processing tools. In fact, the writing of a definition, proved much more difficult than it was foreseen.

To overcome this difficulty, the group decided to renounce to formulate a *definition in comprehension* of the field of TICs to adopt an *approach by activity sector*. Thus the GT/ISI (Working group on the indicators of information society) agreed to give a definition in extension of the TIC sector by establishing the list of the “*economic activities (defined in ISIC rev3) which contribute to the display, processing, storing and transmission of information through electronic means*”. This list was established during its meeting of June 1998.

So the GT/ISI has brought to the fore the vision according to which the scope of TIC gathers three economic activity groups which are :

- the manufacturing of electronic equipment (components, radio-TV sets measure and control instruments ;
- the telecommunication (services and equipment) ;
- information technology (softwares, services and hardware).

Remarks. Even if the GT/ISI did not formally define what is the “Product of Information Technology and Communication” (TIC product), reading the definition of TIC sector suggests implicitly that the TIC product is *an instrument allowing “to display, process, store and transmit information through electronic means”*. In other words, the nature of a TIC product is the one of a tool which allows to handle a particular object : information.

### **1.3 – The proposal made by OECD of a « Sector of contents »**

Four French and Canadian statisticians expert in the domain proposed to OECD a definition of the industries of *contents* which differentiate themselves from other activities of the information sector in that they “produce” information whereas others only use, transmit it.

This contribution to the works of the working group on the indicators of information society (GT/ISI) proposes firstly to define the « *contents* » as *a structured message aimed at the human being*. Then the “*product of contents*” is defined as *an object carrying a message aimed at human being – published on a dissemination medium – with a public character and disseminated in the same way to the greatest number of addressees*.

This definition of the contents product leads to three others which are :

- the product of electronic content is a content published on an electronic medium of dissemination ;
- the sector of contents regroups the whole economic activity sectors the main activity of which aims at publishing contents on a dissemination medium ;
- the sector of electronic contents regroups the whole economic activity sectors the main activity of which aims at publishing contents on an electronic medium of dissemination.

On the other hand, this definition also means that an e-mail is not a content product : in this body of definitions, the development of e-mail can be interpreted as an impact of information technologies and communication (TIC) on society through new practices and uses ; not as a content (it is in fact a structured message aimed at human being but not with a public character nor disseminated in the same way to the greatest number as possible of addressees).

GT/ISI decided to define « sectors » in terms of ISI enterprises sectors regroupings sharing common characteristics. For that reason, it is here proposed to define the “sector of contents” as the whole enterprise sectors according to ISIC rev3 the main activity of which is *the publishing of contents products*.

Applying the proposed criteria in this paper leads to the following list :

- 2211 Publishing of books, booklets, musical works and other publications
- 2212 Publishing of newspapers and periodicals
- 2213 Publishing of recorded media
- 2219 Other publishing activities
- 2221 Printing \*\*
- 2230 Duplication of recorded media \*\*
- 7240 Activities of data banks \*\*
- 7430 Advertising \*\*
- 9211 Productions and disseminations of films of cinema and video
- 9212 Projection of films of cinema
- 9213 Activities of radio and television
- 9220 Activities of press agencies \*\*

(The enterprise sectors displayed with stars correspond to limit cases submitted to discussion).

The authors discard themselves advertising. Even if an advertising message is a content and structured message received by sight or hearing assimilated directly by human intellect and reproducible, the service of advertising is rendered to the advertiser, not to the announced : the advertising message is in that case some intermediate consumption and not a production of the advertising sector : we are therefore in a completely different circuit.

## **2 – An attempt of global vision**

These two approaches, rather different, have each their consistency. Our goal is not to take sides but to seek of a third way or compromise allowing to reconcile them in order not to let exist together definitions which apparently look the same without covering the same concepts while giving the feeling that each one is complementary to the others (which is not the case). This sometimes requires to go back to sometimes rather conceptual aspects.

The interest of a conceptual research on this sector is that it leads to ways of reflection which do not only concern it. One must often broaden and even go back upstream to ensure a global integrity of the demonstration. The problems which arise lead to conceptual progress which concern the whole classifications of activities as well as products.

The two main facts are :

- the progressive disappearance or else the fuzzy border between goods (by definition material) and the services (by definition immaterial) whereas there exist now « materialized services » or « immaterial goods » which question the present concepts,
- the development of intermediate activities in the field of services (till then so simply treated : a service is consumed as soon as it is produced) which « give value » or add value to the produced services (such as commercialization or distribution of services) and which question the old principle of current classifications which reckon that only a material good can be commercialized.

A rather thin analysis, not limited to the core of the concerned topic shows that all is linked and that an overall vision is necessary to avoid inconsistencies between different domains or parts of the classifications such as the ones which are witnessed in the current system. The “peripheral” development are written in italics.

### **2.1 – *Contents, contents in information and information products***

The definitions of the contents in information presented by the Franco-Canadian experts seem to us pivotal in a definition of an « information sector » :

- « *the contents is a structured message aimed at human being* »

Generally speaking, any « intellectual production » (an invention, specification, a plan, a software, the result of an audit, etc) is a structured message aimed at the human being, that is at the comprehension, or at least at the perception of other human beings. It is not for that reason that it may become a product of contents :

it can be, possibly, carried to a medium, but is not compulsorily aimed at the greatest number ; it is not compulsorily « exploitable » directly by the human being (a software must perhaps be *understood* by information technology experts but it is *aimed* at computers, not at human beings. It is an intermediary between some sort of content and human mind).

Let's go further. A work of art is, somehow, carrying the message of the artist. It carries a certain information. Unless it is a "doodle" (and even...) one cannot say it is not structured. It is aimed at the human eye and at human comprehension. But it is not reproducible, only its picture is reproducible. It cannot be disseminated as such.

The contents in the meaning of structured messages must therefore be broken down into parts only one of which is of interest here, the first one :

- the **contents in information** in the meaning of *a structured message with a public character perceived by one of the two senses which are sight and hearing<sup>2</sup>, assimilable by human intellect and reproducible*.  
As much for simplification reasons as because an information is by definition a content (the opposite not being compulsorily true) we shall retain below only the term « information » for « content in information » but this does not change anything in the definition.
- **other contents** in the meaning of *other structured messages with a public character, aimed or not at human being and reproducible*. The structured messages which are the softwares are contents but not aimed at the human being ; as concerns video games, the question remains asked to know whether they are contents in information or only contents. May we consider that it is a matter of messages ? Generally speaking, we think that softwares (a computer game is firstly a software programmed by computer specialists even if some are called graphic designers and other "animators") are *contents of information* processing but not of information itself according to the definition retained ahead.

It ensures that the definition of information product remains valid except for some precisions :

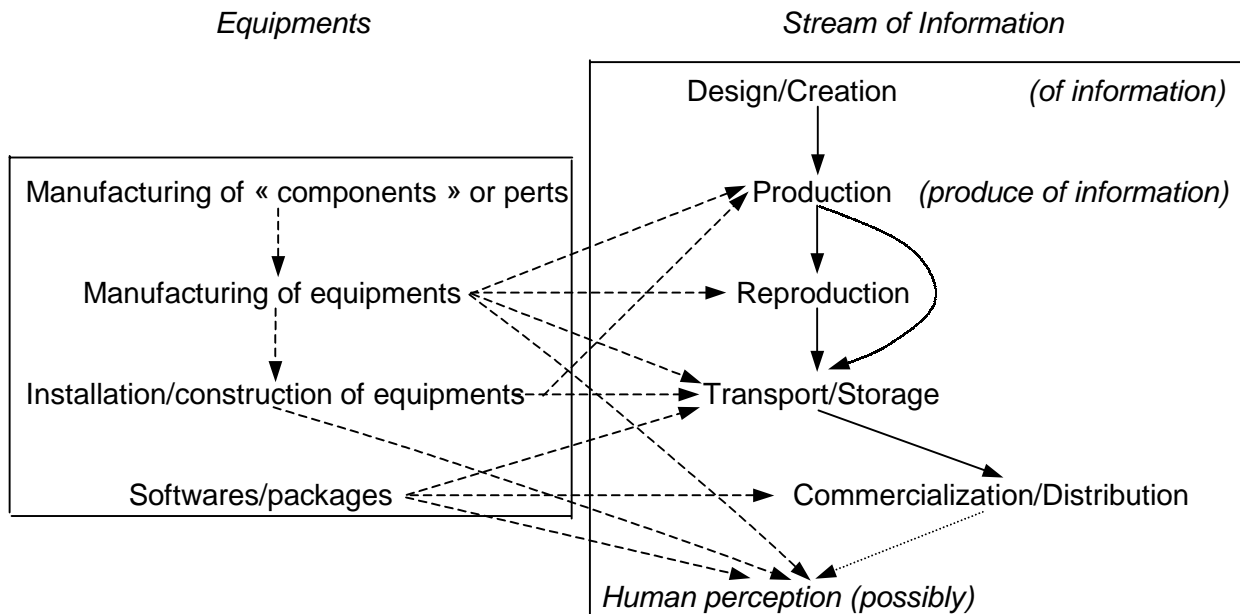
- the **product of information** is a « thing » (material or not) carrying an information published via a dissemination medium and disseminated identically to the greatest number of addressees.

## **2.2 – Attempt of modelling of the activities related to "information"**

On the basis of a model based on the vocabulary of goods firstly adapted to the particular needs of the concerned domain, it is possible to establish a diagram of the different activities linked, directly or indirectly to information by distinguishing a "stream" of the activity directly linked and the upstream activities or indirectly linked :

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<sup>2</sup> One will be able to put forward that, in some case, the perception of information can be performed through the sense of touch : braille information for the blind. One will admit that in that case fingers replace eyes which does not modify the "visualization" concept. The other two senses are not concerned by the information as it is defined here.



The arrows *in continuous* lines show the links between the potential steps followed by information ; potential because not systematic ; the arrows in *dashes* are of a different nature since they show the links between activities providing goods and services necessary to the previous activities and these latter (activities indirectly linked to information) ; the last arrow in *dots* only reflects the transition to the final consumer an entity also using equipments linked to information (reception, reading, etc...).

This activities stream, somehow detailed, concerns neither all types of information nor it is systematically so detailed in the reality. Several elementary activities can be performed by the same units according to various forms of associations : a writer can self-publish, a publisher can have its own printing works, a printing works can have its own system of transport, a TV channel can be its own producer as well as it can buy the production of third parties, it may have its own broadcasting network as well as its own commercialization system, etc. All systems of associations seem a priori possible and therefore exist.

Applied to information, this diagram allows to dissociate well and to name the different economic activities linked to the different forms of information. It also allows as we shall see later, to link the “property rights” to the different outputs and to ask some good question on the content of these outputs and their (possible) differentiation.

### **2.3 – An original : a product but not yet an information product**

At time zero there is nothingness. It is from human mind that the information is born or more exactly a *content in information*.

This information has first to be created : a person or a group has an idea it sets on paper, hard disk, a film, a tape or a CD. It may be a text, a picture, a sequence or a data base. At that time the person or the group has the *intellectual ownership* of what it has designed or created. We are here in the same situation as an invention or discovery which may be patented or registered but which has no economic value, except theoretical, waiting for a confrontation or an introduction on a market.

This *original* is a product (production exists in the economic meaning if the process which it is stemming from is an economic activity) but it is not yet an *information product* because not yet disseminated. It is not a material good but it is neither a service (it is neither transferred nor intended to a third party and even if it were, it would not be consumed at once). It is what we shall call an *immaterial good*.

At this stage, the original work, therefore unique, contains effectively information but it is not yet a content in information in the meaning defined ahead. It is only when an original work enters a process which leads to its duplication and its introduction on a market that it becomes a content in information. This process breaks down into several phases which must be defined precisely, the number and nature of these phases being different according to the contents and the streams but, at the basis of any information product is an essential and unavoidable activity : publishing.

#### **2.4 – Publishing : the core of the information sector**

The first phase (and the most basic) consists in transforming an original work in an entity accessible to a great number : a product of the content. The action to make dissemination possible whatever the way of this dissemination, belongs to the responsibility of a *publisher*. *The publisher is the one who publishes – in the meaning of making public, make people know – and who commercializes a work or an original work*. The publisher is therefore the one who transforms an original content into a content in information. The publishing implies to run a commercial risk which underlies financing of the “production” of the content in information before the least financial spin-off. It does not compulsorily implies the effective manufacturing of the output (possibly physical) by the publisher, this manufacturing being possibly subcontracted to a third party (subcontractor). But in any case the output is the property of the publisher.

The output of the publishing activity can take extremely variable forms. Traditionally, the output undergoes *materialization* of the content on a medium (paper, film, magnetic tape, disk) but the new technologies allow to make this materialization almost non-existent (digitization). Whatever the medium, the basic nature of an published content is the one of the content and not of the container which holds it. The activity of publishers is not therefore an activity of services production but an activity of production of *immaterial goods* whatever the mode of dissemination. If they are on a medium, one can speak then of *materialized immaterial goods*.

To delimit the field of publishing, let us attempt to list the contents in information which can be published in any forms : physical media (disks, tapes, CD, videocassettes, DVD) or on line :

- written works of any nature (including musical works),
- newspapers and periodicals,
- reports, information (news) and press photographs,
- sounds (music, songs, etc.),
- recording of concert, theater performances and other events<sup>3</sup>,
- data banks (including directories and portals),
- films of cinema and video films,
- radio and TV broadcast,
- other published « things » (pictures, photos, etc. ; limits to be clearly defined).

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<sup>3</sup> The reproduction or dissemination of living entertainment is a content in information but the « live » entertainment cannot be considered as activities of content. They are services activities because the “product”, that is the entertainment is only possible thanks to the simultaneous presence of actors and spectators (that is the producer and the client). The product is indissociable from its production.

From this list, taking into account the variety of information types which induce different streams and processes, for a better comprehensive, one will split in what follows :

- the stream of individual material media,
  - the stream of disseminations,
- plus the particular case of the cinema stream.

## **2.4 – The activity of reproduction**

### **2.4.1 – The stream of individual material media**

As already noted, the reproduction of an original on a physical medium may as well be performed by the publisher as be subcontracted to a third party. When the publisher performs the reproduction, the activity of reproduction is included in the one of publishing which boils down to be obliged to classify a unit associating these two activities in one of these activities.

*One can imagine to classify the considered units according to the general rule of the “classification to downstream activity” or according to a particular rule of a “classification to the upstream activity” or else according to another analysis. This problem of association of activities can be found frequently in the domain of information and will be several times raised in the present paper. A particular point will attempt to deal globally with this problem (Cf. 2.6).*

This point is important to underline that the content in information materialized on medium is the output of the publisher, not of the one in charge of the reproduction even if it is the latter who secures the “manufacturing” of the recorded media : the books and other recorded media, manufactured by third parties do not belong to them. They belong to the editor who is the principal who buys their services. The printers and engravers are not therefore producers of goods but producers of a reproduction service, even if these activities are classified in industry in the current classifications. In the accounts of these units, production comprises only the value of the service brought, and in the National Accounts, the cost of the services of printers and engravers is an intermediate consumption of publishers. The reproduction on the account of third parties is therefore a *service*.

This leads to distinguish different meanings behind the words “book”, “CD”, “disk” etc. as *container of an information* from the one of the same words as *recorded physical media*, which common vocabulary does not allow. This distinction can be perfectly perceived when books are in electronic form : an electronic book is a book that remained in the form of an immaterial good that no action has transformed into a materialized immaterial good.

The question which may arise is to know whether it is better to classify the reproduction activities in industrial services, that is to say in industry or strictly in services. The nature of their activity (very industrial processes, transformation, employment of workers) argues rather for a classification in industrial services. One must note that the notion of industrial service will have a much more important scope in classifications as soon as 2002. The same question may arise as for the classification in a classification of publishers and more generally of the principals.



*It seems to us that this point, whatever limited in the demonstration (for the time being) to the domain of information, is essential for a conceptual revision of future classifications as concerns the positioning of the principals :*

*currently, the principals related to goods are classified with the subcontractors producers of the considered good or quite near (publishers and printers for instance) whereas they are not concerned with material manufacturing (when they do not manufacture themselves of course). One can question oneself to know whether this positioning is correct. The structure of accounts as well as employees of principals show that they are very far from manufacturing activities (generally only services purchase essentially industrial services, no manufacturing employees). Should not they be considered, accordingly as involved in trade (which is already the case under some conditions) or as services units but not as industrial entities ? To be studied more in depth, notably, must industrial activity cover a larger set than manufacturing activity defined in the North-American classification (item 31-33 of NAICS) ?*

Thus, after reproduction, there exists a *materialized immaterial good* which is different from the original immaterial good without the intrinsic nature of this good having changed. This basic remark underlies that the dichotomy, material goods-services, is no longer valid and that there exists entities that one could call *immaterial goods* that are not services though they have no materiality or only an ancillary materiality. These entities must be taken into account for a clear vision of the domain of information (but not only : other domains external to information are also concerned by these immaterial goods). Materialized or not, only the immaterial good, a product of information has a content in information and belongs to the information sector. The reproduction activities having led to its possible materialization are industrial transformation techniques which can be applied to many other types of products than information products.

As concerns transport, when a product of information is held by a support it falls in the common place of all goods : it is physically transported by all possible means (land, air, water) and goes through borders in a physical manner which authorizes it to be registered by the customs. The particular case of recorded media carrying a product of information has been taken into account by the customs systems in that the very media are registered at the customs and not the contents for what they are. A customs officer can only effectively "see" the medium but could not verify the contents except by reading it. In this domain, the products classification cannot obviously limit itself to the customs classification.

As well as it may be transported, an information product materialized on a physical medium may be stored like any other good. It may also be bought, sold or exchanged like any other good, which means that it enters the range of commercialized products via the classical trade circuits : middlemen, wholesale, retail sale of all sorts : in store, on catalogs, on line, etc.

## **2.5 – The stream of disseminations**

The whole previous exercise based on examples of books and CDs represents the case where the multiplication requires the materialization of the immaterial good. In other processes, multiplication and commercialization may be done with no materialization of the source immaterial good.

Any content in pictures and sound (audio-visual) may be set in electronic form and multiplied without materialization. A priori, indeed, any content in information can be transferred on a medium : if a film or a song can be copied on video-cassette, a DVD or a CD, a TV programme or a radio programme, as well as a data base, can be copied too and conversely, any content in information can be set into electronic form and broadcast, transmitted projected.

One can list, non exhaustively, the contents in information that can be disseminated :

reports,  
sounds, generally speaking,  
concerts, theater plays or any other performances,  
radio and TV broadcast,  
films,  
photographs.

Some information products remain therefore immaterial and the « reproduction » necessary to any opening to a market is performed through a dissemination supported by electric flows (transmission), waves (broadcast) or photons (projection). For these products, the notion of “reproduction” is intimately associated to the one of information transport : it is the *dissemination* which allows the multiplication without the actions of dissemination and transport being systematically joined : a TV or radio channel producer broadcasts programmes but may not master their transmission or their broadcast, performed by third parties, as he may ensure himself both jointly.

The dissemination is an “*open door*” on a telecommunication network and therefore on the public and is only the source making possible the multiplication of information. In the same way, *setting on line* on Internet sites, for instance, any information which will be then transmitted or emitted by a telecommunication network corresponds to an action of dissemination. The dissemination is a production of non materialized information products.

For non materialized information products, the notion of transport is therefore transferred towards electronic or wave processes, basically represented by *telecommunications* (with or without wire) :

- *broadcast through waves* (Hertzian waves or satellites),
- *transmission* through cable networks (of any nature).

These operations of broadcast or transmission can be performed by the disseminators themselves as soon as they have the technical means to perform them or subcontracted to third parties operating networks.

Here also arises the quite basic problem of association of activities : as soon as a same unit performs jointly the *dissemination* of information products and their *transport* (transmission and/or broadcast) what is the main activity of this unit the resources of which cannot be broken down into two elementary activities since there is no transaction ? It may seem, in good logic, that there cannot be transmission or broadcast if there is firstly dissemination. Consequently, the second activity would be induced by the first one which would therefore be the main activity, the second being only a technical means to perform the dissemination. This point is also studied below (Cf. 2.6).

At the point where we are now, we have therefore an information product created, operated and disseminated. To finish off the process leading to the user, only remains therefore the *distribution* or *commercialization* of the product when the latter is not performed directly by the publisher.

Concerning the information products not carried by a medium, the former analysis (and still current) in economic classifications considers

- that a service is consumed as soon as produced,
- that only goods can be commercialized,
- that the splitting of the production process of a service into elementary operations leads to regroup all these operations with production.

This vision reflecting a ten years old or more, reality is no longer so true nor so simple : many information immaterial products are not commercialized by the publisher by an intermediate third party : subscriptions or phone cards sold in various places, subscription to paying TV channels sold by cable or satellite operators even management of Internet sites on a third party's account, etc.

The situation is not different from the commercialization of all types of transport tickets, of show seats or hotel overnight stays, also commercialized in various places, specialized or not.

The only and true problems of the commercialization of a content in information not carried by a medium (and more generally the commercialization of services) are based on the very nature of the services :

1. in any cases the sale of a service boils down to a *future sale*. One does not leave with TV programmes under one's arm when one pays a subscription but with a right of visualization in the future of these programmes.  
In the same way « the wholesale dealer in telecommunications » who « buys » a bulk of telecommunication time on a network to sell it then in parts only has a future envelope which himself will resale in the future but he has not the hours in his pocket,
2. in most of the cases, the one who commercialize the service does not buy it but is the *middleman* authorized by the producer who has granted to him the act of commercialization and who remunerates him in the form of a commission he sells on behalf of the producer and the producer chose him according to his opening on the market, on his audience, of his public or of his customers,
3. in any cases, the commercialization of a service boils down to only transfer to the buyer the *rights of use* without the middlemen having himself bought these rights. The situation is quite near the one of the middleman of classical trade who connects a buyer and a seller, are remunerated by a commission by one, the other one or both according to the case and who sometimes receive the complete fruit of the sale on behalf of the "seller" without having the least right of ownership or of use on the concerned products (when they see them),
4. in many cases, these *activities of services commercialization are associated to other trade or service activities* (for instance trade in phone equipment and commercialization of telecommunication subscriptions, service of dissemination through cable or satellite and commercialization of subscription to paying channels, provision of connection to Internet network and commercialization of software and/or telecommunication subscriptions).

These peculiarities show that, generally speaking there exists today a family of activities of « *services commercialization* » which it would be convenient to acknowledge in the classifications.

There remain nonetheless some basic issues for the structure of future classifications :

- must we make a particular regrouping of these activities of services commercialization ? must we regroup them with the classical activities of goods trade ? must we even structure these activities around some families of products as for instance a group "products of information and telecommunications" ? This latter solution would have the advantage to regroup together families of homogeneous products even if the form (intangible goods or services) may be different,

- are there not associations of commercialized services which lead to choose the option of the identification of services commercialization even its bringing closer with trade of goods ? The example of the service of travel agencies is here useful : the term travel agency is today no longer used. They indeed commercialize transport tickets of any nature but also overnight stays in hotels, show seats tours, packages or other seminars that may include many other services. Is the place of travel agencies with transports as currently of should it rather be in a regrouping of all the services commercializations. It seems to us that it should be,
- how to manage services commercialization activities associations with other services or trade activities which, generally refer to the question of the egg and the hen ?
  - o does a unit selling phones commercialize subscriptions to a telecommunications network because it sells telephones or the opposite ? The personal history of each unit must show that two realities exist and that a given order is quite difficult to determine. If the two “trades” are regrouped in a same family because they are considered as “normally” or generally associated, the question disappears and this solution leads to bring nearer goods trade and services commercialization,
  - o a little more tricky : does a unit operating a telecommunications network commercializes subscriptions to paying TV channels because it has this network or is the commercialization of TV programmes the exclusive goal of the operation of the network (the network allows it a priori to disseminate many other things than TV programmes) ? This question posed by audio-visual specialist seems to us biased by history (often, the original operation of cable networks has led to the exclusive dissemination of TV programmes) and is lesser and lesser relevant considering the opening of networks of very high output which allow to transmit (simultaneously) many other types of information than the only TV programmes. Is it therefore a matter of de facto association, of bad questions or of bad proposals of classification ?

The global solution proposed here (before dealing with activities associations) is :

- to acknowledge the services commercialization as an intermediate activity of retail trade (and in a few cases of wholesale trade),
- to « mix » the range of products, goods as services, corresponding to a same « family » of products.

## **2.6 – The stream of films**

The films (cinema as video) are the subject of a fairly particular stream, when they are not operated by TV channel, when they are not carried on video-cassettes or on DVDs, when they are not set online on Internet sites or when the rights of operation have not been disposed of to TV channels, cases already studied. Moreover, the vocabulary used in cinema gives meanings to the words slightly different of those used till then in the present paper.

From conception to the public, the stream can be more split than for the other goods of information :

- the conception of a film relies firstly on its scenario and the script of the film-director : there indeed exists at that time the basis of a film and these two elements are « products » which can be registered and protected. If the author of the scenario and the director are not independent units, they are the wage-earners of the producer (American majors for instance) and in such a case, the products “scenario” and “script” are only intermediate products of the production of a film, invisible since they are the subject of no transaction.

We are here in the same case as the one of the publisher who pays writers, by the line or for a fixed sum to write the book he intends to publish.

- The publisher of a film is the *producer* who owns or buys the rights on a story or a scenario and who is going to find the means to realize it : selection of a team of production and actors, selection of the ancillary technical means, not to mention financial means. He is the owner of the output, the film which is only a structured sequence of moving pictures with a sound track the only physical aspect of which can be limited to an electronic therefore immaterial file.

We are here (almost) in the same situation as the *property developer* who seeks financial means, selects and uses the services of architects, of quantity surveyors, of surveyors, of construction enterprises to realize a real estate programme. What is different for the film producer is that in nearly all legislations, the people involved in the film (production, technical means, actors) are considered as *wage-earners* of the producer (designated as “entertainment temp workers” in the French legislation for instance) and are not independent enterprises.

- When a film is produced, to be seen by a large audience of spectators, it must be *duplicated*. As concerns films, this operation is performed generally by specialized laboratories which first develop the original film then duplicate it. When it is video cinema, the reproduction is performed by pressing workshops (DVDs) or by copying (professional video tapes) workshops.

*These technical operations are classified with cinema activities in the current classifications, whereas video-cassettes reproduction is classified with printing and that processing or reproduction of “amateur” films, that is of a non professional format, is classified in photo activities ; it seems to us that it is an illogicality to be corrected which should lead, in future classifications, these activities in an (industrial ?) set comprising the different types of information products multiplication and not scattered in the classifications as they are currently whereas processes and goals are near.*

*The proposal to consider those activities as industrial (whereas they are currently considered as services activities) comes from the fact that to develop a film is a transformation operation and that to duplicate it is a manufacturing repetitive activity. This is perfectly corresponding to the manufacturing of goods which defines manufacturing industry.*

- As for nearly all of the goods intended to a large public of consumers and contrary to other information products, the film is distributed in two steps, we shall say wholesale and retail, which can be associated or dissociated. There is firstly the film distributors who place the film to theaters chains as well as to independent theaters or projectionists. There is then the theaters themselves or independent projectionists (itinerant cinemas, for instance), property of the distributors (establishments of a distribution enterprise) or independent (enterprises themselves), which project the film to spectators. In the two steps as in the two types of projection, these intermediaries have no right on the film itself and can only commercialize copies of the image.

There is no transport problem concerning the film product intended to be projected because it is carried on a medium, a tape, which makes it a good, or more exactly a materialized immaterial good which can be transported as any other good.

The only pending conceptual issue remains : are film distributors as their projection, commercial or services activities ? As for the first point, it seems to us rather obvious that it is wholesale trade : the distributor is a middleman in the commercialization chain of the films. This activity is currently classified in the cinema stream : does the fact that it is a matter of films make it an activity to be classified aside from other commercial activities ? We do not think so. Moreover, considering the trade organization, distribution cannot often be dissociated from the projection activity (the theaters themselves) both being integrated. As concerns projection, there remain many questions.

Let us try to analyse what are doing the cinema theaters and other public video projections : last step toward the public, a projection is a photons and wave emission which allows a group of persons to visualize pictures and hear the sound track of a film. In fact it is a second step of multiplication after the multiplication of the copies of the film. For that reason, each spectator pays its seat as if it were an individual service multiplied by the number of available seats.

We are not very far from the « pay per view » which consists in paying time after time for the dissemination by a channel or a TV distributor of a film or of any other sequence : the theater as the disseminator has « on the shelves » a number of films or sequences (programmes, documentary films, etc.) which it sets to disposal of the public and each customer comes and “goes to the market” through the acquisition of a *right of visualization*.

Considering the setting to disposal of an environment (seats, screen, sound equipment, realization of projection by a third party, immediate consumption of what has been “payed”), one does not see how to consider the activity of cinema theaters as a service.

## **2.7 – The problem of activities association in the information domain :**

Several times in this paper, the problem of activities association has been posed :

- publishing and reproduction,
- dissemination and broadcast/transmission,
- broadcast/transmission and commercialization
- production and distribution (of films)
- distribution and projection.

These cases are different enough for them not to lead compulsorily to a same solution but convergent enough in terms of problems posed. Which good questions must we ask ourselves to classify the concerned units ?

Two general rules are applied in the current classifications :

- the classification to the downstream activity in case of vertical integration. This means that two successive steps of a production are connected to only open into the commercialization of a final product, with no intermediate transaction,
- the classification to the main activity according to value added or to a substitution variable : in the absence of transaction between both activities, it is always possible to estimate the value added of each one though substitutes such as employment or fixed assets for instance.

A particular rule of classification to the upstream activity in case of integration is applied in a few cases where, quite obviously, either the value added of upstream activity is primordial in comparison with the second, or for more « political » reasons (vine growing associated to the production of wine on the basis of produced grapes for instance).

In each raised cases, which rule must be applied ? It seems to us that the answer can be found in the answer to a second question : *which is the "trade" corresponding to each of the activities to be classified and to which organisation corresponds the association of these activities ?*

- *Publishing and reproduction.* In the first case it is a matter of production of immaterial goods, in the other one it is a matter of a materialization service of these goods, that is two trades, two techniques, totally different but associated de facto in some units. Must we consider that there is vertical integration (therefore classification to the downstream unit) or association (therefore one main activity and a secondary other) or must we apply a particular rule ? It seems to us that reproduction is not a compulsorily downstream activity in that publishing may not use reproduction services (non materialized information products). On the other hand, classification in reproduction would boil down to be obliged to classify an unit in a service activity whereas it produces an immaterial good on which applies this service. It seems to us therefore that such an association of activities can only lead to a classification in *publishing*, therefore in the production of the immaterial goods, somehow as if reproduction was only an ancillary action of production.
- *Dissemination and broadcast/transmission.* If our understanding of English does not deceive us, this association can be found in North-American "cable networks". The dissemination is the production of immaterial goods, the other activities are the technical support of the "transport" of these goods. How should we classify a producing enterprise which would have its own transport service to deliver its production ? Transport should be an ancillary activity of production. It seems to us that we are here in the same case : broadcast/transmission is the delivery service of production. Classification must therefore be done to the *upstream activity* : *dissemination*.
- *Broadcast/transmission and commercialization.* It is the case (and the problem) of cable operators in the French way. On one side an information transport activity, on the other a marketing activity to commercialize the transported products. Is there transport aimed at commercializing or commercialization because availability of a transport equipment ? If one analyzes the trade of such units through the employments they have (essentially sales technicians) no doubt, the "main" activity is the one of commercialization : the network is only the medium of the activity, therefore transport is only a secondary activity. The true problem is that this convergence of conclusion with the experts in the domain does not lead us to the same solution : the choice to acknowledge services commercialization as an activity of trade, not as a step in the TV or radio stream, does not lead us to regroup these associated activities in the audio-visual domain but *in the trade activity*.
- *Production and distribution (of films).* We shall analyze this point in the same manner as dissemination associated to broadcast/transmission : how would we classify a unit producing goods with its own « marketing » department ? This latter department would be invisible because considered as ancillary activity. It seems to us that we are dealing with the same case : anything realized or produced must be commercialized (if not it remains unsold). This association covers a quite general integration : commercialization of a produce is the natural step finalizing any production. Classification must therefore be made to *upstream activity*, which only produces something : *films production*.

- *Distribution and projection of films.* This association can be found among great distributors owning theater complexes. On one side a commercial activity, on the other a service. Two trades de facto associated in some units for reasons either of profit or organisational. We think that we are in a similar case, but somehow opposite, to the one of the association between publishing and reproduction : films distribution is firstly a marketing action aiming at optimizing dissemination compaigns. When it is performed on own account such an activity is ancillary of the projection service which makes concrete marketing choices. This association must therefore lead to a classification in *projection*.

## **2.8 – Going back to advertising**

NAICS classifies this activity in enterprises consultancy. OECD experts are less categorical, but seem rather of the opinion of NAICS, having, first withdrawn advertising from the list of the contents in information.

To make it simple, advertising comprises two sub-sectors : management of advertising media and the advertising agencies. The media as for themselves are not contents. But their value comes from the fact that one can write down their contents (pictures, films, sounds). These contents are already written down in the information sector because they are immaterial products resulting from the activity of publishers or of producers of the audiovisual. One must not describe them again because it should be a redundancy.

Advertising agencies are therefore not the units which produce these contents but units which organize advertising campaigns. They have an activity of *consultancy*. The question is therefore : is a consultancy activity a producer of content or a producer of services ? The advertising compaign produced by the agency is not a standard product which can be reproduced and accessible to a large public. It is a unique service, made to measures that one cannot consider as detachable from the provider (the agency) and of its customer (the announcer). It is an exclusive service to the announcer. The activity of advertising agencies cannot belong to the sector of information, as besides all the consultancy activities.

## **2.8 – The contents in information not « produced » by Man**

The human being is not the only creator of contents in information which may be published, and disseminated and commercialized, etc. Automatic machines, indeed created by man, may create information : control and measure instruments create information :

The output of these instrument is obviously  
 a structured message,  
 with a public character (news, weather forecast, environment data, data of air traffic control, for instance are indeed disseminated),  
 perceived by one of the two senses which are sight and hearing (figures, graphs, audio messages, pictures),  
 directly assimilated by human intellect,  
 and reproducible (all of these data can be reproduced in view of dissemination).

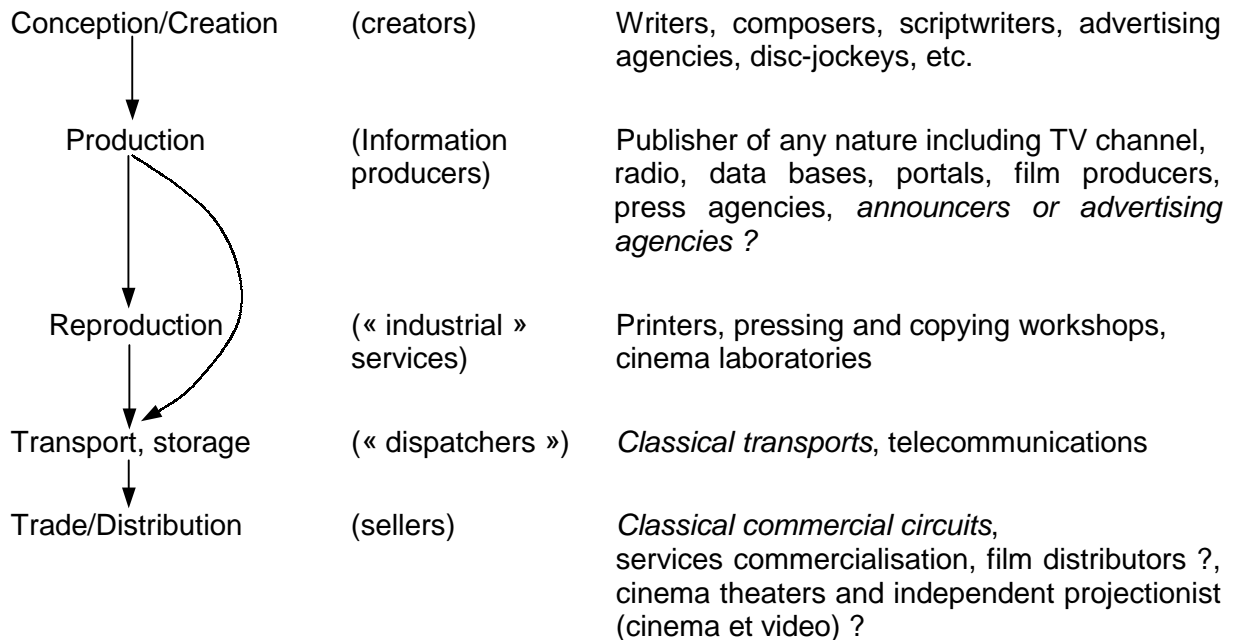
If the products of this type of information are still marginal, they exist to answer scientific or information needs but above all, the equipment and control and measure instrument which produce them, belong indeed to the information domain even if they are indirectly in the information stream.

This reminder is important to consider the concerned equipments among those which collect, process, store and transmit information in an electronic manner.



## 2.9 – First synthesis

After this first analytical step of the different streams directly linked to information, let us look at the main actors (an open list) by positioning them on the diagram which has been used as a model to development (the actor in italics are there as a matter of interest) :



We can sum up the previous topics in the following way :

Any « product of information » is a content in information created and designed by someone and exploited, therefore given value to, directly or by a third party. Reproduction materializes the good on a medium or only multiplies it if the medium remains immaterial (putting it online, broadcast for instance). In the case of materialization on a medium, the future phases of the distribution (transport, commercialization) do not pose specific problems, compared with the distribution of any other good. But if the multiplication of the immaterial good does not imply a classical material medium, these two steps of commercialization are specific.

Reproduction transfers no right to the one who performs it, neither to the output, physical or not which results from that. Reproduction creates a new output the content of which is strictly the same as the one of the initial product. When the reproduction materializes the content, the result is always a content but materialized on a medium in the form of a materialized immaterial good. One does not buy the resulting good for the medium but for the content.

Remarks :

- the reproduction of information products can take very various forms for the same product : the output of the film production is a product called film, property of the producer. In that state it is still a product “which can be distributed” but not distributed. The film may be distributed by the producer himself or a distributor, it may also be distributed by a video publisher or else by a TV channel which buys the rights of dissemination or exploitation of the film to the producer : distribution in theaters, reproduction on video-cassettes or the TV broadcast of a film are all operations of reproduction. In both cases, there is not a new product but there is a setting on a distribution medium, physical or not, which brings us back to the previous problem.

- the multiplication of an information product can be performed by a subcontractor or by the producer himself. In this latter case, the publisher has two activities : publishing (production) and the one or reproduction/dissemination (multiplication). Considering the peculiarity of both outputs (exploitation) of an original followed by the reproduction of the same original which is only, intrinsically a service) leads to a problem of statistical organization :

For industrial surveys, this underlies a precise management of the units to survey : in case of subcontracting, the reproducing unit knows the physical quantities produced, the necessary means of production as well as the incomes of the work it has performed but it does not compulsorily know the value of what it has produced. On his side, the publisher knows the global cost of the subcontracting (not compulsorily the different components : paper, cardboard, ink, work for instance) the value of the product as well as the physical quantity of the reproductions. It is only when the publisher also reproduces the good that all information is gathered on a single unit.

- The example of subcontracting of the reproduction of an information product shows that the output is an *intangible good* but remains a good (when it is a recorded or printed medium).

*Generally speaking, in the current conception of classifications, any industrial service may produce goods (tangible or not) as pure services : examples are numerous of works performed in subcontracting which lead to production of goods (which did not exist before their realization by the subcontractor) on the basis of specifications of a principal who remains the owner of the output, or which are only « modifications » of existing goods but not finished (provided by the principal) which lead to a non acknowledged product (by the customers) as a different product from the input : the example of the printing of material or of clothes on behalf of a third party is typical of this situation : input is considered as identical to the output simply because the customs officers cannot distinguish a tinted article in the bulk of an other printing.*

*A less arbitrary management of the concept of « good » resulting from a transformation activity is an impossible trick of the future system of classifications, the current one not taking into account neither the peculiarity of some goods such as those stemming from information nor all the required differences to analyse current productive systems.*

### **3 – The equipments : essential intermediaries**

We have just reviewed the different forms of activities which may concern directly the information products, from conception to commercialization, that is from the creator to the user. It remains that, for most of them, they cannot be realized, even exist without adequate equipments, support or engine of their realization. It is the case of a good part of the production of information products, of their reproduction, of their distribution and of their “visualization” by the end user.

Note : visualization, as we mean here, is any mean allowing to peruse an information product in any immaterial form it may be (broadcast, electronic file, recorded medium).

Before studying how to take into account these equipments and their related services, let us begin with listing them and measure their specificity in relation with the activities of information.

### **3.1 – The weight of words**

As we have seen, the information products, that is the media via or on which a content in information may be disseminated, are not palpable “things” which can be handled physically, or directly perceptible to human mind : intermediate techniques (machine, devices, material) are necessary to ensure nearly all the phases of the information cycle. If we hold as a good one (which seems to us the case), the definition given by the working group of OECD to list the products of the TIC (or TIT), the equipments related to information cover *the whole instruments (or products) allowing to use electricity as an information vector or else which contribute to the display, processing storage and transmission of information through electronic means.*

Such a definition covers these types of products :  
electronic devices (components, any radio or television equipment as well as measure and control instruments) ;  
the telecommunications (services and equipments) ;  
information technology (softwares, services and hardwares).

First important remark : by definition any *product developed by information technology* is intended to *processing, storage or visualization* even to participate to transmission of information. Must we consequently consider that these products (softwares and packages) are integrally true to the definition of “information” given above and are equipments necessary to its very existence ? It seems to us that one must distinguish here information and pieces of information : in most of the cases the pieces of information, processed, stored, visualized, etc. by the products of information technology are neither public nor published. They are neither compulsorily intended to the human being (all softwares that equip any programmable hardware or manage the operations and processes of any “machine” are intended to process pieces of information the human being is very little concerned). In the same way, any information technology service of consultancy type, be it consultancy concerning hardwares, systems or softwares concerns directly or not the processing of pieces of information but not information. Globally the “products of information technology” take part in the processing of pieces of information as one of the unavoidable information and communication technologies but participate to the information stream only as a tool, as well as for other sector.

*Information technology remains a generic tool adaptable to all sorts of needs and which participates in the existence of many activities and processes without having to be drawn towards one rather than the other.*

We shall not mention pure video, and information technology games. One can consider that they are particular softwares ensuring at the same time the processing of a particular “information” and the interface towards man. Even if there is “interaction” between the user and the software, the action is not different from the interaction between any player and his playing partners. Moreover, the interaction is not different from the one which can take place between the CD-Rom of an encyclopaedia and the user which can only consult the encyclopaedia thanks to the software that comes with it. Neither these games nor the softwares or other packages are contents in information, only intermediaries managing pieces of information.

Second remark : by definition, telecommunications services are integrally devoted to the transmission or the broadcast of pieces of information in any immaterial form they may be. Therefore the whole telecommunications services seem included in the definition. One may object that except information (therefore public : all that is published and transmitted) the telecommunications transport as well pieces of information which are not information (audio, visual or digital messages of private data in particular). As for information technology, it seems to us that telecommunications belong indeed to the unavoidable technologies of information and communication but are only a tool used by the information technology stream as well as many others.

In both cases (information technology and telecommunications) one is faced to the ambivalence of the TIC definitions and of the content in information as well as the used words : the means necessary to the processing and dissemination of information in immaterial form cover technologies with a much larger vocation, the meaning of the word "information" is not the same in both definitions. In the case of TIC, it is information in general or pieces of information, in the second it is a restrictive definition of information with the meaning "content in information".

In spite of these remarks, it is clear that, like other activities more or less linked to information (cf. initial model), these two sectors remain well in the framework of our topic. Conversely, when we will have to structure all the activities and reclassify them with their neighbours and similar, it seems clear to us that it will not be compulsorily with the "information producers" who are publishers but perhaps rather with the substitution activities (if they exist) ; see below.

### **3.2 – The equipments**

As concerns the equipments, it seems necessary to have care to stay within the definition not to take into account goods the subject of which could *be used* in one of the electronic operations related to information, but not only, that is to say that they could also be used for other objectives (repetition of the problem of telecommunications and information technology).

If « finished » electronic equipments seem not to pose problem to enter the definition, it is not the case for all intermediate goods composing the above mentioned equipments or communication networks : the different types of cables are not all intended to transmit information ; the majority of cables is intended to transmit electricity as energy and not as an information medium. Electronic components are, in essence, compulsorily intermediaries of the electronic processing of information. They are therefore apparently (necessary detailed check) entirely included in the definition.

Among finished equipments, only satellites may bring to ask oneself if they are, all of them, instruments of information. By definition, those which are intended to the transfer of information (telecommunications, TV, radio) belong indeed to the domain of telecommunication equipments. Conversely, what about all others (scientific or military observation satellites, telescopes, etc.), the goal of is not information, but which are de facto *collection, processing, information broadcasting* equipments. Thus as much for simplification or conceptually, we think that all satellites belong indeed to the information domain. Classify them as currently with spatial construction considering their technological content, of their operating processes and the units which produce them (different from those which produce them launcher or shuttles) seems to us an "error" to correct in future classifications in order to bring them "nearer" to electronic equipment of telecommunication, all in all, very near technologically speaking.

Conversely the installation or implementation works of some equipments not till then considered in the definition retained by OECD, are indeed necessary operations belonging to the very definition of the "information technologies" : installation of "heavy equipments", (telephone exchange for instance) realization of telecommunications lines, realization of networks (fitting cables in buildings for instance) construction of specialized works of civil engineering ("big ears", transmitting re-transmitting antennas, TV or sound studios, etc.) no telecommunications lines, no networks, no transmitters, etc. :no information because neither transmission nor broadcast.

Similarly, a great silence prevails in the OECD definition concerning repairing or maintenance of these various equipments. No equipment in function, no information circulation. One will object that it was not needed to speak of it since a good part of the operations of maintenance and repairing of the concerned equipment is currently classified with the manufacturing of these equipments, therefore held in the definition.

A « good part » only because repairing of all equipment of same nature so called « general public » intended to household is currently classified with trade (part of the group 52.7 of ISIC rev3). Now the multiplication of these equipments has entailed the multiplication of units specialized in this type of maintenance which it is not convenient to ignore any longer. Must the activities of "repairing" of the equipments intended to households be regrouped with those of industrial equipments or carry on being distinguished because they are "near" trade by the fact that their location is rather "in shops" aimed at individuals.

It seems that the choices made by the OECD group relied on the existing structure of ISIC rev3 without seeking to anticipate on a necessary restructuring. Indeed, in the frame of a "light polishing" of international classifications for 2002, an action voluntarily tight before the great overhaul expected for 2007, a small step has been taken by distinguishing wholesale trade of some equipment, (hardware and packages) but nothing compelled to limit oneself to wholesale trade but a "self censorship". Many countries and at least two regions (ALENA and EU) having already distinguished retail trade of these equipments in their activities classifications as well as some have already distinguished maintenance/repairing activities of "general public" electronic equipments. Remains to carry on the "polishing" operation (deepened) for 2007.

Following the same model as the one previously retained for the « information stream », one can sum up the list of the activities linked to devices and equipments concerning information :

Manufacturing of « components » or parts	(industry)	Electronic components, optical fibers, telecom or specialized cables (TV), blank media
Manufacturing of equipments	(industry)	Radio and TV devices (professional and individual) phone and telecom equipment, satellites, electronic instruments for measure and control, hardware
Installation/construction of equipments	(industry)	Installation of heavy equipment (phone exchanges for instance)
	(construction)	Telecom lines, railway signalling lines, cable networks (in or out of buildings) specialized works (transmitters/re-transmitters, audio-visual studios, etc.)
Repairing/maintenance of equipments	(industry ? services ?)	Repairing maintenance of professional devices repairing of individual devices
Information technology	(production of contents)	Packages and video of computer games (published)
	(services)	Softwares, consultancy in information technology (softwares and hardwares)
Commercial streams (wholesale, retail trade and middlemen)	(trade)	(except information technology services, all goods quoted above can be commercialized in classical ways (including possibly the e-commerce))

With this listing of the activities concerning the equipment intended to information, one has now a complete set (at least we hope so) of activities directly or indirectly linked to information. Remains to see how to structure it to introduce it (the whole or parts of it) in a classification.

#### **4 – Industries related to information : a split structure but clearly distinguished**

It is better to set up the principles as soon as the title of this synthesis : it seems obvious to us that restructuring does not mean amalgamate. Even if they are linked by an ultimate objective (go against information), all quoted activities are too disparate, by their even operational content to try to position them together in a tree. It seems however to us that emerge some big “packages” with, in the margins some fuzzy borders we shall have to sharpen, probably in a conventional way.

##### **4.1 - Industry**

A first group concerns *transformation industries* where one can distinguish the *pure productions* (themselves split between production of intermediate goods and the one of finished products) from *industrial services* :

## Production

of intermediate goods (distributed according to production techniques)

*electronic components,  
blank media,  
optic fibers,  
telecom and specialized cables –TV-*

equipment goods for information

*radio and TV equipments – professional and individual,  
phone and telecom equipment,  
satellites,  
electronic instrument for measure and control,  
hardware,  
Industrial services of information,  
Printing industry,  
Reproduction of sound and picture (copy and pressing),  
Cinema laboratories*

All these activities « produce » goods (material or not) through transformation of inputs into different or materialized outputs. There remains a conceptual problem, not really dealt with in current classifications, which poses a first problem of border :

*does a repair lead to a sorting out of an existing product, therefore without transformation, or to a new product since the output of repairing actions is an equipment which works – or at least is meant to work – whereas the input was an equipment which did not work, even useless ?*

*If one adds that to repair implies the changing of parts, sometimes important, that the work is performed by professionals whose skills are the same as those who make the same goods (workers, technicians) and more often in workshops, in factories or in workshops, one is led to think that repairing is not far from a transformation activity. Without this implying that both activities must be classified together...*

*If the answer to this latter proposal is yes, then goods repairings of any nature must be classified in industry, all together and distinguished by families of the goods considered. In any case, considering the technological proximity of the information related equipments, at least together as for them.*

*If the answer is no, repairing activities are then services and in such a case must be regrouped together in services and structured according to the good concerned (with the same as for information related equipments).*

Another problem of some nature is born with the installation of heavy equipments : installation of such equipments is generally performed by teams who are specialists of the equipment, therefore near from manufacturing teams. BUT, the very nature of the premises where are installed such equipments (particular construction and finishings, cabling, insulation, etc.) entail that these equipments can be considered as an integral part of the place where they stand.

If one follows this reasoning, the installation of heavy equipment is a particular activity of construction. According to the chosen option, the classification of such an activity is therefore either in construction (near from network installation – these equipments belong to... -) or in industry (near, as at present, of the manufacturing of the so-called equipments. To be underlined is that the central and Eastern Europe countries, in their former system of classifications – had opted for the first solution, going even further by considering that any “machine” settled in a building was a part of it.

*Two border uncertainties must be raised :*  
*Industry/services as for repairings,*  
*Industry/construction as for the installation of heavy equipments.*

#### **4.2 - Construction**

Logically entailed by this previous uncertainty, all activities of « realization » of *lines and telecom networks as works of civil engineering related to telecom* (specialized works, transmitters/re-transmitters, TV, cinema or recording studios) may be the subject of a block “*construction of telecom works*” which would allow to regroup the units often highly specialized which realize these activities (less remote technically than it appears).

#### **4.3 - Commercialization, distribution**

As noted above, the global proposal retained in the present paper, aims at acknowledging the services commercialization as an activity of retail trade intermediary (and in some cases of wholesale trade), make up products range, goods as services, corresponding to a same expectation of the users.

The proposal underlies the making up of an activities group of *commercialization of information products* in any form they may be :  
paper publications, CDs, cassettes or tapes (sound and video),  
telecom services (subscriptions, phone cards),  
or audiovisual services (TV subscriptions),  
information technology products (packages),

together with activities of *commercialization of information related equipments* :

radio and TV devices,  
phone and telecom equipments,  
electronic instrument for measure and control,  
hardware

the range of which become completed most often in retail distribution even wholesale distribution :

telecom services and phone equipments,  
packages and hardware,  
TV equipment and subscription,  
publishing of book (paper or electronic medium),  
information technology and telecom equipments,  
information technology and audio-visual equipments (which will be more and more frequent considering the digitalization of audiovisual equipments).



Considering the absence of answer to the classification of films distributors, one does not know here, if they are to be considered as practising a commercial activity. Obviously the classification habits as the will of the concerned units to “feel” integral part of the audiovisual world does not lead to such a solution. And however, it would be highly desirable not to make again in 2007 the “mixture of principles” which have led to regroup together for instance car-related activities except manufacturing (which makes we amalgamate trades and services depriving at the same time the commerce divisions of non negligible parts of their content without “clearing up” the vision of car related services not all regrouped together in the ISIC 50 division).

*A good principle, not systematically followed in current classifications is to regroup together units for what they make and not to reconstitute streams which almost systematically, present a cross-sectional vision to any structuring by activities when they do not overlap (the schoolish example of tourism which amalgamates various activities is explicit on the subject). The only problem is to define clearly the meaning of “to make” (in “what they make”) : is it a “trade”, technical action or a goal ?*

#### **4.4 – An information sector, but which one ?**

As already seen, publishing (of any nature), actual information producer (in the meaning of the definition of the content in information, let us remind) is the core of the domain : publishers of all nature including TV channels, radios, data bases, portals, films producers, press agencies. One may limit oneself to this simple and homogeneous content even if it seems restrictive. Before checking the outlines (advertising and information technology producers) let’s go further to check what to do with information technology and telecom activities.

If publishing activity is the crux of the sector, information technology (processings) and telecom (broadcast and transmission) are a crux of the majority of the different non materialized information types. The whole makes somehow a block of services hard to dissociate which may be structured to distinguish the three activities groups but which makes a closed set.

It is a solution. It has the advantage to raise the problem of information technological publishing which, considering the proximity of both activities, should not be far from the other types of publishing (even if its is a matter of contents and not of contents in information). It has the drawback to regroup with the “information industry”, technologies which have many other objectives than to go against this one.

Another solution could be to consider each activity (telecom and information technological services) as two technologies used by nearly all of the other branches. Telecom could remain in such a case, with or near other transport activities which they are a substitute of for immaterial goods. As for information technology services, taken globally considering the homogeneousness of the concerned personnels as of the produced output (consultancy as softwares, computer games and packages – which are contents but no information -) they could carry on being considered as services (to enterprises ?) among others.

Considering all these remarks and restrictions made concerning these two technologies, it is rather this latter solution we think the most realistic. Such a solution leads to three well distinct parts :

*Information sector* (information publishing)

*Telecom*

with or near transports

*Information technology services*

with services (to enterprises ?)

*Computer technology publishing* (packages and games)

*Softwares and information technology consultancy*

Remains the problem of advertising, a producer of contents in information but not publisher of information products. Here again must we favour the conception of a service or consider that the intrinsic of output (an information) makes it an activity of the information sector to be classified with publishers ? It seems to us that the variety of services rendered by advertising as the peculiarities which have been underlined (no publishing, no "sale" of a product or a right) rather lead to consider this activity as a service to enterprises among others.

#### **4.5 – The creators/designers**

Last dealt with but first link of the information stream, the creators/designers of contents in information, therefore upstream of information products remain what they are : writers, composers, scenarists, disc jockeys, journalists, etc . that is to say "artists" in their domain, producers of originals which will or will not be published therefore commercialized. But without them (by definition) no information would exist...

A same person may be, both, creator and producer but these are two successive activities and possibly complementary. It seems to us interesting to underline that there exists other messages producers whose messages do not have authority to become a product of content : teachers, consultants. It is precisely because pure creation activity cannot be only met in the stream of content that it is legitimate not to include it in information sector.