

Towards Indicators of Electronic Content:

A Discussion Paper

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Abstract:

This discussion paper invites contributions to ways of providing useful statistics on 'content' in the Information Society which support comparisons over time and between countries. The paper focuses on content that is electronically displayed, processed, stored and transmitted by the goods and services produced by the Information and Communication Technology (ICT) industries. Developing these indicators is a key operational problem to be solved on the way to producing a comprehensive set of indicators for the Information Society.

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Glossary of Terms

1. Introduction

The OECD Information, Computer and Communications Policy Committee (ICCP) established the Working Party on Indicators for the Information Society (WPIIS) to develop definitions and indicators which are internationally comparable and which describe the information society. These indicators are needed to respond to both policy and regulatory requirements in the face of rapidly changing and emerging industries and products.

1.1 The Need for Indicators

Policy makers need to monitor emerging activities and industries in order to evaluate the effectiveness of policy intervention on, for example, employment and training. Regulators need comparable information on economic sectors, and on content, for analysis of regulatory change in their own and other economies.

Both regulators and economic actors must deal with the ‘container/content’ duality of emerging products. Faced with a new product that links a container, such as a CD-ROM or a broadcast channel, and content, such as a **video game**, a university course, or a concert recording, regulators ask questions about the commercial nature of the product in relation to competition policy, or about its editorial nature in light of principles relating to cultural content, sovereignty, or public decency. These questions arise within national jurisdictions, but they can also be raised in respect of international trade, and especially for trade in services.

While regulators are concerned about competition, culture and sovereignty, economic actors are trying to attract investors to take advantage of the opportunities afforded by deregulation and by the convergence of technologies, such as cable, telephone and software services. As an example, a US software manufacturer has shown interest in acquiring a French news agency, not to further its software activity, but to acquire the vast archive of news photographs. The acquisition is driven by content. Understanding such complex activities and their impacts is difficult, if not impossible, without statistical information. It is the role of official statisticians to produce the statistics; the indicators and a framework within which to fit them as support for informed analysis and decision making by governments, corporations and people.

Content is all encompassing, but the current economic and social interest is in content combined with electronic media to produce new products which are changing people’s lives. Castells (96) provides a rationale for developing statistical indicators to describe this process.

‘Thus, while printing did substantially affect European societies in the Modern Age, as well as Medieval China to a lesser extent, its effects were somewhat limited because of widespread illiteracy in the population and because of the low intensity of information in the productive structure. Thus, the industrial society, by educating citizens and by gradually organizing the economy around knowledge and information, prepared the ground for the empowering of the human mind when new information technologies became available.’ Castells (1996)

The impact of the new information and communication technologies is related to the content that they carry, electronically. This does not mean that non-electronic content is irrelevant, but there are already indicators in place for book publishing, theatrical entertainment, and film. The challenge lies in the domain of the electronic content product.

1.2 A First Step

A first step in developing indicators for the Information Society was an agreement, released by ICCP in September 1998, on a list of industries (Appendix 1) which constitute the information and communication technology sector (ICT). These are the industries that support the electronic display, processing, storage and transmission of information. This definition suggested that the next step was to define the information and data products that can be dealt with electronically by the ICT products, and then to identify the industries that produced those products in order to define an electronic content sector. Members of the WPIIS examined an initial draft definition in April 1999 and chose a different approach. They felt that developing a statistical definition, and indicators, was not the same for the content sector as for the ICT sector.

The ICT industries produce ICT products as their principal product, and ICT products and industries are relatively well understood. As well, they have been studied for some time, and particularly by the OECD. In the case of electronic content products, a topic still relatively new, there is no common understanding of what they all are and some of them are not yet produced by any industry as a principal product. As a result, the boundaries of the electronic content sector need to be defined so that statistical research can be carried out. This leads to an approach complementary to that used for the ICT sector.

1.3 Content and Electronic Content

In this paper, content is introduced through the device of the ‘communication product’ (CP) which is just the combination of content with a supporting medium which is not restricted to being electronic. The characteristics of the ‘communication product’ are given and then, a list of industries that have the capacity to produce their principal product as an electronic communication product is proposed. These industries can be monitored as they make, or do not make, progressively more use of electronic versions of their principal products such as books, newspapers, and catalogues. ‘Product’ here, and throughout the paper, refers to both a good and a service, whether delivered electronically or not. ‘Communication Product’ can be electronic (data stored in a computer searchable data base), or not (symbols printed on fabric).

By proceeding from the ICT sector to the communication product, and a set of industries that have the capacity to produce their principal products as electronic communication products, the non-electronic communication products, such as books and newspapers, are left out. So also are the sources of the content such as the Dead Sea Scrolls, the Mona Lisa, the original manuscript of the International Standard Industrial Classification, and the latest performance of

Rigoletto. There is certainly a case for including non-electronic communication products, and original sources, as ‘content’ in the information society for which indicators must be developed by the Working Party on Indicators for the Information Society. However, it goes beyond the scope of this discussion which concentrates on the electronic information society, and its definition, leaving the broader issues of ‘content’, and their resolution, to a future discussion, albeit an important one.

Some of the language in this paper may seem artificial, as it has been chosen to avoid words that may mislead. To help, a glossary is provided with definitions and synonyms. The reader is invited to comment on and contribute to the glossary.

Much of the paper is devoted to a discussion of products and their classification. Then there is the question of the list of industries that have the capacity to produce electronic communication products. By the end of the paper, there is a tentative list of such industries that could constitute an electronic communication product sector. The reader is invited to join in the discussion needed to refine and augment this list and to move towards a consensus as to what is in it. The discussion begins with how to deal with content.

2. Content, the Communication Product, and ICTs

To link the term ‘content’ to the statistical concepts of product and industry, the term ‘communication product’ is used to describe the combination of content with a supporting medium. In addition, for there to be such a product, there must be an agent to make the combination, and for it to be a ‘communication’ product, there must be a recipient of the result. Two examples of communication products are books, and music on CDs.

2.1 Content and the Public

Content can be data, information, and codified knowledge, but can every set of data, every piece of information, and every item of codified knowledge be described as the content of a communication product? In the approach taken here, content can generate a communication product only if the message being communicated is, from the outset, intended for the public at large, or some segment of the public. By contrast, private communication, referred to in law as correspondence, is intended for one or more persons, human or corporate, but not many.

This private/public distinction clearly has an economic meaning. For public consumption, it is the content of the communication product that is being sold, financed, or bought. For private consumption, it is more the supporting medium, and perhaps the confidentiality of the medium that is the object of the transaction. Put another way, public content can be **reproducible** in identical copies, while private content is personalized and therefore **unique**. This applies equally well to books (text on paper) and to CDs (music, sound or symbols stored on plastic)

In the case of a written text and, more generally, of content that can be stored on an off-line medium, it is easy to ensure that the communication product is reproducible. Radio and television programs are communication products by virtue of the fact that they can be **rebroadcast**, even though 'live' programming such as news reports and on-location shows are actually broadcast only once. On the other hand, unique visual experiences - visiting an art gallery, attending a live concert, a play or a sports event, or reading an original manuscript - can be excluded. This point will be discussed again in Section 7.

2.2 The Publisher or the Producer

An agent is required to make the combination of medium and content and that agent is unlikely to be the creator of the content.

There are industries that produce unique and tangible goods, such as paintings, sculptures, icons and illuminated texts, and there are other industries that trade in these goods such as art dealers and museums. There are services, such as the entertainment service, provided by a play, concert, or a sporting event, which are also unique. These, in their original form, are not displayed, processed, stored, and transmitted and they are excluded from the category 'communication product'. However, both the unique tangible goods and the services can, at the instigation of an agent, be recorded, and the resulting intangible good (Hill 99) can be displayed, processed, stored, and transmitted electronically. The intangible good is a candidate for inclusion as a communication product. Once the unique tangible goods are recorded, they can also be made available on-line, as a service, as well as through the provision of an intangible good.

What makes the a communication product is the act of putting existing content into a form that can be dealt with electronically. **In other words, a communication product requires a publisher or a producer to bring it into being.** This agent is distinct from the creator of the art object, the composer of the music, or the author of a text. This distinction excludes artists, composers and authors from the electronic information society (Section 5), but it does not exclude them from the from the broader category of the information society (Section 6)

The recipient of the communication product is **a market or an audience.** There are other kinds of unique information, such as a telephone conversation or the images sent to earth by the Mars Explorer. Both can be processed, stored and transmitted electronically, but does that make them 'communication products'? This raises the extent to which there is or is not an audience, or a market, for the product. There is a market for some images of the surface of Mars, and there is certainly a market for recordings of some telephone conversations, but not for the vast majority of them. Hence there is a further constraint: there must be a market **or** an audience for the communication product, which must be accessible to more than a small group of people.

2.3 ICTs and the Electronic Communication Product (eCP)

The supporting medium **can use** any means of storing or processing electronic information. Compact disks (CDs), diskettes, microchips, magnetic tape, and computers are all examples of media. This is not an exhaustive list as there are many other methods of electronic processing, storage and display. There are also many ways of transmitting information by wire - copper lines, coaxial cable and optical fibers - or without wires - electronic transmissions using various modulations and frequencies. The key point is that content must be **capable** of being displayed, processed stored and transmitted by an electronic medium.

2.4 The Medium and the Message

Before going on, a discussion of the use of the word 'medium' may be helpful as, so far, it has been qualified, implicitly or explicitly, by the adjective 'supporting' and 'supporting medium' has been taken to mean the means of displaying, processing, storing, or transmitting information (in French, 'le support'). Examples are paper, a CD, film, or a wired or wireless transmission system.

McLuhan (65), and others, use the word medium to refer to content, and it is used in this sense to describe 'multi-media' products, such as a CD which stores animated images, sound, text and symbols. McLuhan asserts that the content of any medium is always another medium. Thus, 'the content of writing is speech, just as the written word is the content of print, and print is the content of the telegraph'. He went on to suggest that the medium changed the economy and the society, irrespective of what it carried. He cited the train, the telegraph, aircraft and the television, and the extreme example of the content-free light bulb, all of which led to his conclusion that 'the medium of is the message'.

More than thirty years later, the Information Society is seeing a wide diversity of media and the possibility of targeting the audience. This leads Castells (96) to suggest that message shapes the medium or, put more boldly, 'the message is the medium'. However, he goes on to that that, 'in the new system, because of the potential diversity of the contents, the message is the message'. Content is no longer bound by the supporting medium, which no longer matters. This is reflected in the earlier example of the US software firm considering a take over bid for a French news agency in order to acquire the content, which could then be incorporated into products communicated with the support of many media, wireline, wireless, CD, diskette, or even paper. The inference is that the discussion of content and media is not always simple. However, in this discussion a medium is a means of support for content and it will be used consistently in this way **in most cases; sometimes, the word 'support' may be used**. Whatever the relationship between the content and the supporting medium, once they are combined into an (electronic) communication product, the question of how to classify these products becomes important.

3. A Classification of Products – Preliminary or Next Step?

Part of the work of the WPIIS is the classification of products that are related to industries in the ICT sector listed in Appendix 1. These products include unrecorded cassettes, tapes, diskettes, as well as television and radio transmitters and receivers, computers and Internet and telecommunications access services. They are the means of displaying, processing, storing, or transmitting and accessing to information. However, once they are combined with public content, they may¹ become electronic communication products (eCPs).

At its last meeting, the WPIIS recommended an examination of the characteristics of (electronic) communication products before trying to select the industries that produce them as their principal output in order to delineate the CP sector. Such an approach raises the question of the adequacy of existing product classifications for identifying eCPs and determining the right publisher or producer of a given eCP.

3.1 Where is the publisher?

The difficulties encountered when searching for the sector of origin of an eCP are illustrated with the example of video games. The complete analysis detailed in Appendix 2, can be summarized in the following way.

When a video game has been made for use with a television receiver; it is a manufactured good, as are dolls, toy electric trains, puzzles, and playing cards; but, if it has been created for being played on a PC, it is a recorded media which is classified in "*CPC 4752 - Records, tapes and other recorded media for sound or other similarly recorded phenomena (except cinematographic film and cards with magnetic stripe)*".

With regard to the identification of eCPs and of their publisher, the CPC class 4752 is a **key one**, as it groups all kinds of "off line" eCPs, irrespective of the kind of support and of the type of content; within this class, it is not possible to distinguish between a packaged software, a CD containing a video game, music or an encyclopedia, a video-cassette or a video-disc containing a movie.

Three possible ISIC industries are mentioned in relation to this product, namely "2213 - Publishing of recorded media", "2230 - Reproduction of recorded media", "7220 - Software consultancy and supply"; and, a fourth one can be added to this list, "9211 - Motion picture and video reproduction and distribution".

¹ "Private" content may also be registered on a diskette or transmitted via the Net.

The corresponding European classification, the Classification of Products associated with Activities (CPA), proposes a further breakdown of the CPC 4752 which distinguishes between discs, tapes, supports with recorded data, and video movies; this distinction allows a one-to-one correspondence with the industries listed in the Revised Statistical Classification of Economic Activities in the European Community (NACE Rev. 1); in spite of that, an ambiguity remains for the classification of the "PC-video game"!

Finally, the principal criterion being the kind of **support**, which can bear increasingly various types of content, it becomes more and more difficult to establish a clear correlation between the eCP and its sector of origin. This means that there is an ambiguity in the industry classification and a related problem for international comparisons.

Here is a rationale for delineating a set of industries larger than the present publishing sector.

Until now, only the case of "off line" products has been examined. There is a gap in classifications of products concerning the "publishing of content without support", i.e. the publishing of on line services. This point will be discussed again in a following section.

3.2 Where is the Electronic Communications Product?

With the preliminary use of a product classification, it was expected to get a more precise distinction between CPs and eCPs.

The following list of products associated with the International Standard Industrial Classification (Revision 3) (United Nations 90) industries in the Motion Picture, Radio, Television classes (ISIC 9211-9213, 9249²) do not present eCPs, with the exception of broadcasting (ISIC 9213, CPC 9616) and video production (part of ISIC 9211, part of CPC 96121 and 96142).

ISIC	TITLE	CPC	TITLE
9211	Motion picture and video production and distribution	38950	Cinematographic film, exposed and developed, whether or not incorporating sound track or consisting only of sound track
9211		96130	Audiovisual production support services
9211		96141	Motion picture, video tape and television programme distribution services
9211		96142	Film and video post-production services

² Although classified within "CPC 961-Audiovisual and related services", Sound recording and Audio post-production services are supporting services of the sound industry more often than of radio.

9211		96149	Other services related to the production of motion pictures, video tapes and television and radio programmes
9211, 9213		96121	Motion picture, video tape and television programme production services
9211, 9213		96122	Radio programme production services
9212	Motion picture projection	96151	Motion picture projection services
9212		96152	Video tape projection services
9213	Radio and television activities	96160	Broadcasting (programming and scheduling) services
9249	Other recreational activities	96111	Sound recording
9249		96112	Audio post-production services

In the French Classification of Products (CPF), there is a specific class groups video films (CPF 92.11.20) with the corresponding activity "NAF 92.1G-Video Publishing and Distribution"; the corresponding CPC product not indicated above is CPC 4752 and the corresponding service is CPC 96142.

The classification of products used in the French Annual Enterprise Survey (EAS) for the audiovisual sector presents a list of 151 products and types of transactions. Among these, 22 deal with e-products (see Appendix 4). The main product is the publishing of movie pictures on videogrammes with variations according to the type of content and the distinction between videocassettes for sale or for rent. This classification is important for economic analysis as the revenues of the video sector amount up to FF 4.5 billions, more than two-thirds of the revenues of the film production.

With the exception of film and video tape which are transportable goods, all products listed above are services. How to distinguish an electronic service (e-service) from a non-electronic one? If a video is an e-product and a film is not, then, is post-production of a video an e-service while post-production of a film is not? The same question arises with distribution and projection.

Broadcasting is an e-service though not new. From the point of view of new technologies, it would be more relevant here to consider digital products only. However, "new" audiovisual services or the more recently created, are pay TV, specialty TV, and TV distribution through cable and satellite, whether digital or not.

An indicator is the percentage of revenues from audiovisual eCPs will be the share of video production plus broadcasting revenues among the total amount of audiovisual revenues. The variability of this ratio from country to country will depend on many factors, level of license fee, of advertiser's expenses, development of pay-TV (digital or not)... more often economic than technological.

Some governments have taken or are studying the decision to replace analog broadcasting by digital. Probably, there will be an improvement of the quality of the service, as the supply in terms of number of channels and programmes is enlarged, also because of a probable better quality of sound and picture, and because of the availability of some new services such as multiplex and access to programme guides. But the first consequence is that the networks and the channels will have to invest in new equipment and the viewer will have to buy a new receiver or at least, a special box. The contribution to GDP growth will come from ITC products, with only a small part from new services. The contribution coming from the improvement of services in terms of quality, will not be measured in terms of output growth.

A secondary effect may concern the "content part" of the sector if this technological evolution results in an enlargement of programming; it will concern the production, whether it is electronic or not.

With regard to the delineation of a CP sector, there is no doubt that the whole audiovisual sector has to be included. With regard to eCPs or equivalent, two needs have been identified: -a more precise list of audiovisual services in order to select the right new services and their links with new technologies; a preliminary step will be to collect classifications used in national surveys with their correspondences with CPC; -a reflection on relevant indicators. The audiovisual sector is at the same time producer of content, creator of new services and user of ICTs. Besides its contribution to GDP growth, other indicators will be needed to show the impact of the sector on ICTs and of ICTs on the sector.

The example of news agencies leads to a similar conclusion concerning lack of details in the CPC. News agencies are providers of information to the media, enterprises and organizations. The largest ones are leading providers of electronic information.

The classification of products used in the French Annual Enterprise Survey (EAS) for the news agencies sector is given in Appendix 4. Among 12 products listed in the questionnaire, two mention a multimedia support with a distinction between general and specialized information.

Assuming there is a classification of communication products, there is the question of whether there are industries that produce these products as their principal output or, whether there is a communication product sector, just as there is an ICT sector as defined in Appendix 1. The Publishing of Books industry (ISIC 2211) is an example where some firms have the capacity to produce electronic communication products as part of their principal product (books), but electronic communication products are some way from dominating the economic activity. Of course, broadcasting (ISIC 9213) produces all of its output as electronic communication products, and could be treated in the same way as any of the ICT industries. The next section looks at the characteristics of a potential electronic communication product sector.

One could expect that it was easier to identify emerging products than emerging sectors: the coming out of a new product precedes the creation of a new sector. Because of the complexity of the situation resulting from the convergence of different contents on the same type of supports and from the emergence of new services which are difficult to characterize through technological criteria, it is preferable to try a delineation of the content sector in terms of ISIC industries. However, it will be necessary that, for a list of the more characteristic products, to carry out a work of clarification of the correspondence between those products and the industries which may produce them as a principal or a secondary output.. There are also gaps. Improved classification of products and the filling of gaps in the classification are challenges in the developing of indicators of the eCPs.

4. Towards an Electronic Communication Product Sector

4.1 What Industries are Included?

Telecommunications service providers, cable service providers, and Internet access providers are all part of the ICT sector and, in some countries, all of them provide access to the Internet and to other sources of on-line services. The on-line services, the commercial data bases, the government information services, are part of ‘communication products’. Both the public and the private sector can offer ‘communication products’, which means that governments, institutions of education, and hospitals have outputs which can be classified as communication products and which are part of their principal activity.

As well, all industries can offer electronic communication products in conjunction with their principal activity. An example is an audio-visual presentation of a machine part in action, as part of promoting the sale of machine parts by the manufacturer or by the wholesaler. Does this make machine part manufactures part of the communication product sector? As a second example, a government department will use communication products in support of its mission in areas such as environment, health, or manufacturing. Does this make government part of the communication product sector? In both cases, the communication product is not part of the principal activity of the organization. A machine part manufacturer makes and sells machine parts, and a government department develops and implements policy or develops or enforces regulation. In neither case is the communication product part of the principal activity and neither is it a secondary product. However, an electronic manual on the use of machine parts could be considered an integral part of the product, and a CD of regulations and interpretations, could also be a principal product of a government department.

The case of education and health services can be discussed from the following arguments.

On one hand, it is possible to consider that the principal activity of institutions of education can be provided partially, in some cases entirely, through electronic communication products and that makes education a candidate for inclusion as a communication product industry. However,

this is not because of the original and unique course material, but because the course material is being promoted or produced electronically as an integral part of the principal activity of the institution, and received by the students. A similar case could be made for some hospital and social services.

On the other hand, it should not be forgotten that an eCP is, first, a CP, i.e. a product intended for **public** dissemination. Subsequently, health and social services can be excluded in spite of the fact that some of these services can be provided electronically: these services are provided within the sphere of private life, and tailored to the problems of an individual or a group of persons. When these services are provided electronically, they can be considered as tele-services and their investigation be integrated under the general heading of "Information Society".

Concerning education services, the first question to ask is: "are education services intended for the general public?" The explanatory note of ISIC3 concerning "division 80-Education" states that *"the first three groups (of this division) cover education which may be included under the regular school system", i.e. a system of progressive school education for children and young people*". The education system is for a particular category of the population, and a classroom or a lecture-room (amphitheatre?) at university is not a public place where anyone can enter. Another consideration is that a lecture, a class are live events, and then unique.

Only for a part of the class "8090-Adult and other education", there may be a hesitation, as this class *"includes also all instruction through radio and television broadcasts"*. But it includes as well instruction by correspondence, which is private communication and has to be excluded.

It is clear that the major part of the educational content will appear in the publishing sector, through its outputs as books, printed material, cassettes for language training and so on. But a very small part of it is probably "produced", in the audiovisual sense, by institutions classified under class 8090.

This reasoning can be applied, *mutatis mutandis*, to other services and will bring to the exclusion of services which are tailored for exclusive use by the client.

The "market research" sector is an ambiguous case, as it produces together important banks of data, the content of which is bought by anyone, and private reports, the content of which is reserved to a client or a small group.. Here the decision has to be taken on the basis of the relative magnitude of these two kinds of products.

4.2 Activities Excluded

It is clear that those organizations that provide electronic information about products and facilitate the sale, purchase, or shipping of products are using 'electronic communications products' to do business, just as they use printed business forms. However, it is not necessarily the electronic communication product that is being sold – it may be a book, a cottage, or a car.

The electronic transaction is an integral part of trading, but it is not 'content' for the purpose of this classification. The issue for consideration is the production and delivery to the client of the electronic communication product, not how it is purchased or sold.

E-commerce is clearly out of scope of this paper as far as another subgroup of WPIIS is in charge of this issue. However, if e-trade is, first, trade, then e-trade deals with goods only. When content is recorded on a supporting medium, its distribution is a trade activity. A borderline case deals with the distribution of "content published on line". Will it be part of an extensive definition of e-commerce, or as part of the eCP issue? Whatever the resolution, this question must not be forgotten.

4.3 What Industries could be in the Electronic Communication Product Sector?

The **electronic communication product sector** consists of those industries, public or private, which produce and promote electronic communication products as part of their principal activity. A list of industries which have the capacity to produce their principal products as eCPs is given in Appendix 3, with explanatory notes.

While the list offered in Appendix 3 might be regarded as a tentative definition of the domain to investigate, it cannot be used in an immediate future as a basis for collecting economic information in the same way as for the ICT sector in Appendix 1. Until there is more economic activity involving the production and sale of eCPs, it may be necessary just to record the portion of activity in these industries which is related to CPs as part of the principal output. For this question to be posed with any precision, there must be further investigations along the following lines:

- test of the list of proposed industries by volunteer countries;
- systematic investigation of the links between products and industries, on the model of the video game, in order to agree a set of products, building on what is found in Appendix 2; and,
- survey of users to identify the needed indicators.

This suggests that the listing of eCPs in the CPC, the definition of the eCP sector, and the collection of statistics on the production and use of eCPs, will all proceed as parallel activities, each influencing the other.

The key subject for discussion, then is the best way of developing a list of eCPs and their associated industries.

5. The Electronic Information Economy and Society

In the future, it may be possible to agree on the industries in the electronic communication sector. Once that list exists, it, or that portion that is electronic, can be combined with the list of

industries in the ICT sector to provide an industry-based definition of the electronic information sector.

**(5.1) ICT Sector + Electronic Communication Product Sector =
Electronic Information Sector³**

For the collection of economic statistics, such as turnover, trade and expenses, the public part of the electronic communication sector would be excluded and the analysis restricted to the commercial electronic information sector, or **the electronic information economy**. For studies of employment, skill use, or training, the full electronic information sector would be appropriate.

Once there is an operational definition of the Electronic Information Sector, the next step would be to include the socio-economic impact of the goods and services produced in the Sector, in order to have a description of the Electronic Information Society.

**(5.2) Electronic Information Sector + socio-economic impacts =
Electronic Information Society**

This requires consensus on the products produced in the ICT sector and in the electronic communication product sector. It does not preclude the analysis of the impact of individual products, as the cellular telephone, or electronic data bases, on the society and the economy. However, it does provide a framework for such analysis as the definition of the electronic information society evolves.

6. The Information Society

This paper is focused on the components of the electronic information society, which form part of the information society, a much broader concept. However, the ICT products are central to the information society as they are present in all domains of human activity and they induce new products, both ICTs and electronic communication products. As Castells (96) observes, *'the core of the transformation we are experiencing in the current revolution refers to technologies of information processing and communication'*. Providing statistical measures of the production, distribution and use of these products is a necessary step in understanding an apparently revolutionary change.

However, if the non-electronic parts of the information society are taken into consideration, this

³ 'Electronic' is added to the Information Sector for two reasons: to emphasize the electronic nature of the products and their processing; and, to use a term and that is different from 'Sector 51, Information', or the 'Information Sector' in the US version of the North American Industry Classification. (North American Industry Classification: United States, 1997, Bernan Press, Lanham MD, 1998.)

revolutionary change is many revolutions, some that have been going on for a long time. Examples are impacts of the introduction of paper, of movable type, the railway, the telegraph, the radio and the telephone, long before the current explosion of electronic networks with all of their implications for the society and the economy. Part of the change is a consequence of the medium used in the (electronic) communication product. Hieroglyphs on stone tablets do not move, paper does, television engages the mind differently than radio or film and this (linear) text would be read and experienced differently were it on the web with hyperlinks to all of the references and video clips of the authors discussing the text. However, what is different about the eIS is its pervasiveness, the rapidity of the change that it is inducing and, the radical nature of that change. Business is done differently because of ICTs and the content that they support. ICTs and content make possible the virtual firm and the virtual alliances of knowledge workers, independent of space. People behave differently, they seek information and services on the web, they learn remotely, they travel with geographic information systems to tell them where they are, and they consult their psychiatrists remotely to find out who they are.

7. Conclusion and Next Steps

This paper invites discussion leading to a set of indicators of electronic communications products, irrespective of the industries producing them. In due course, analysis of the industries producing the electronic communication products could lead to an industry-based definition of the communication product sector. A second task, then, is to identify a set of industries which produce eCPs, as part of identifying an economic sector like the already defined ICT sector.

When such a definition is combined with the existing definition of the information communication technology sector, the two define the electronic information sector. This can be restricted to a definition of the electronic information economy, with the exclusion of products that are not traded. The electronic information sector, along with measures of socio-economic impacts, provides an operational definition of the electronic information society.

The task for the reader is to review the paper and the lists in Appendices 3 and 5, and to propose modifications to the approach and to the lists of CPC products and ISIC industries, with a rationale. In addition, the reader may wish to comment on the terms used in the paper, and in the glossary, and to propose alternative or additional terms. Comments can be sent directly to 'Jean-Marie.Nivlet@stji.premier-ministre.gouv.fr', who leads the WPIIS working group on content, or contributed to the electronic discussion group at 'www.olis.oecd.org/edg/iccpssp.nsf'

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APPENDIX 1

Definition of the ICT Sector using ISIC, revision 3 (United Nations 1990).

Manufacturing

- 3000 Manufacture of office, accounting and computing machinery
- 3130 Manufacture of insulated wire and cable
- 3210 Manufacture of electronic valves and tubes and other electronic components
- 3220 Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
- 3230 Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods
- 3312 Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment
- 3313 Manufacture of industrial process control equipment

Services -- goods related

- 5150 Wholesale of machinery, equipment and supplies⁴
- 7123 Renting of office machinery and equipment (including computers)

Services -- intangible

- 6420 Telecommunications⁵
- 7200 Computer and related activities

4. Where available, countries should only include those subsectors of this industry that directly provide ICT wholesaling services. This will avoid the inclusion of extraneous wholesaling activity. For example, using the NACE nomenclature, only NACE categories 5143, 5164 and 5165 should be included.

5. In those instances where countries include telecommunication activities as part of radio and television activities (ISIC 9213), radio and television activities (9213) should be included in this definition. Otherwise, it should not be included.

APPENDIX 2

Product Classification Example: The Video Game

Although not cultural, the "public content" aspect of the product is in no doubt; among CD-ROMs sold all over the world, video games are certainly at top of sales.

One who looks for video games in the Central Product Classification (CPC)⁶ can find, first, the class "CPC 3858 - Video games of a kind used with a television receiver"; this class is a subdivision of the group "385 - Games and toys" which includes inter alia dolls, toy electric trains, puzzles, playing cards. Such a video game is a transportable good and it is necessary to look at the explanatory notes of the Harmonized System (HS)⁷ in order to get some more information. The note attached to the corresponding HS position, code 9504.10, confirms that only "*video games of a kind used with a television receiver or with an incorporated screen, as well as games of chance or of skill with electronic display*" are taken into consideration here.

What about a video game usable on a PC? By deduction, one will find that this product should be classified in the "CPC 4752 - Records, tapes and other recorded media for sound or other similarly recorded phenomena (except cinematographic film and cards with magnetic stripe)".

As in the previous case, these video games are transportable goods, but there are now 10 corresponding SH positions⁸, listed hereafter:

8524.10	Gramophone records
	- Discs for laser reading systems :
8524.31	- - For reproducing phenomena other than sound or image
8524.32	- - For reproducing sound only
8524.39	- - Other
8524.40	- Magnetic tapes for reproducing phenomena other than sound or image
	- Other magnetic tapes :
8524.51	- - Of a width not exceeding 4 mm

⁶ Central Product Classification (CPC) - Version 1.0. Statistical Papers Series M No. 77, Ver. 1.0. United Nations - New York, 1998.

⁷ World Customs Organization, The Harmonized Commodity Description and Coding System, 1996 version (Brussels, 1996).

⁸ excluding Cards incorporating a magnetic stripe (8524.60).

- 8524.52 - - Of a width exceeding 4 mm but not exceeding 6.5 mm
 8524.53 - - Of a width exceeding 6.5 mm
- Other :
- 8524.91 - - For reproducing phenomena other than sound or image
 8524.99 - - Other.

The two last explanatory notes of the chapter should not be neglected. They concern subheading 8524.39, which "*includes, inter alia, recorded discs for laser reading systems for reproducing representations of instructions, data, sound or image, recorded in a machine readable binary form, and capable of being manipulated or providing interactivity to a user, by means of an automatic data processing machine*". and subheading 8524.99, which "*includes, inter alia, recorded media (excluding discs for laser reading systems, magnetic tapes and cards incorporating a magnetic stripe) for reproducing representations of instructions, data, sound or image, recorded in a machine readable binary form, and capable of being manipulated or providing interactivity to a user, by means of an automatic data processing machine*".

Then, the video game registered on a disc for laser reading systems is in the subheading 8524.39, and the one registered on a cassette in the subheading 8524.99, because of their **interactivity function**.

More generally, the previous SH list distinguishes between recorded products mainly according to the type of **supporting medium**. The only characteristics of the content which are recognizable are: the content which is **sound only** can be isolated ; also, the content **capable of being manipulated or providing interactivity to a user** can be isolated, and probably the content which is picture only⁹.

The corresponding Industries

For the "TV-Video game", the situation is simple : it is considered as a manufactured product and the corresponding ISIC sector is "3694 - Manufacture of games and toys". When discussing the delineation of the ICT sector, a principle among others was adopted, according to which an ISIC sector had not to be included in the list of ICT industries if only a minor part of

⁹ Another subclass of the CPC, "86922 - Reproduction services of recorded media, on a fee or a contract basis" proposes the three following categories:

- reproduction services from master copies of gramophone records, compact discs and tapes with **music and other sound recordings**,
- reproduction services from master copies of video-tapes or laser discs with **motion pictures and other video recordings**,
- reproduction services from master copies of **software and data** on all kind of discs and tapes. Where are interactive products?

its outputs could be considered as ICT products. Is this principle sufficient to exclude the ISIC 3694 from the provisional list of content industries?

What about the industries involved in the elaboration of the "PC-Video game"? The corresponding table of CPC Version 1.0¹⁰ is rather ambiguous with three possible alternatives:

- 2213 - Publishing of recorded media,
- 2230 - Reproduction of recorded media,
- 7220 - Software consultancy and supply.

In order to precise the classification of the publisher of the video game, it is useful to have a look at the European counterparts of United Nations classifications, the Classification of Products associated to Activities (CPA), and the Revised Statistical Classification of Economic Activities in the European Community (NACE Rev. 1). Within the class "72.20 - Software consultancy and supply services", the subclass "72.20.1 - Recorded data bearing media of a kind used in automatic data processing machines" seems to be the right one. Finally, this choice is confirmed by an explanatory note in the French Classification des Produits Française (CPF), which, under the same "72.20.1 subheading", states that here are included "*media (tapes, cassettes, diskettes, CD-Roms, and so on) bearing packaged software or data recorded in relation with a publishing activity*". So, the corresponding publishing activity is NACE "72.20 - Software consultancy and supply services".

However, the corresponding SH positions, as they are indicated in the CPA, are somewhat confusing: subheading "8524.39" is in front of an audiovisual product, "CPA 92.11.20 - Magnetic tapes with sound and vision recordings", and "8524.99" in front of "CPA 22.14.11 - Gramophone records and compact discs"; in the first case, when it is recorded on a laser disc, the video game becomes an audiovisual product, and in the second, when recorded on a cassette, it becomes a sound medium.

The following diagram summarizes the treatment of a "simple" product, the video game, through the five international classifications systems considered¹¹.

This illustrative case can be reproduced with other "off line" eCPs.

From the beginning, it has been assumed that the video game was registered "off line", on a physical supporting medium. Now, if a customer buys and downloads a video game on his PC, the product he has bought is not referenced in the existing classifications, and the corresponding trade transaction cannot be classified¹².

¹⁰ The printed version of CPC is referenced here. An electronic version proposes the sole ISIC 2213 class as the corresponding activity.

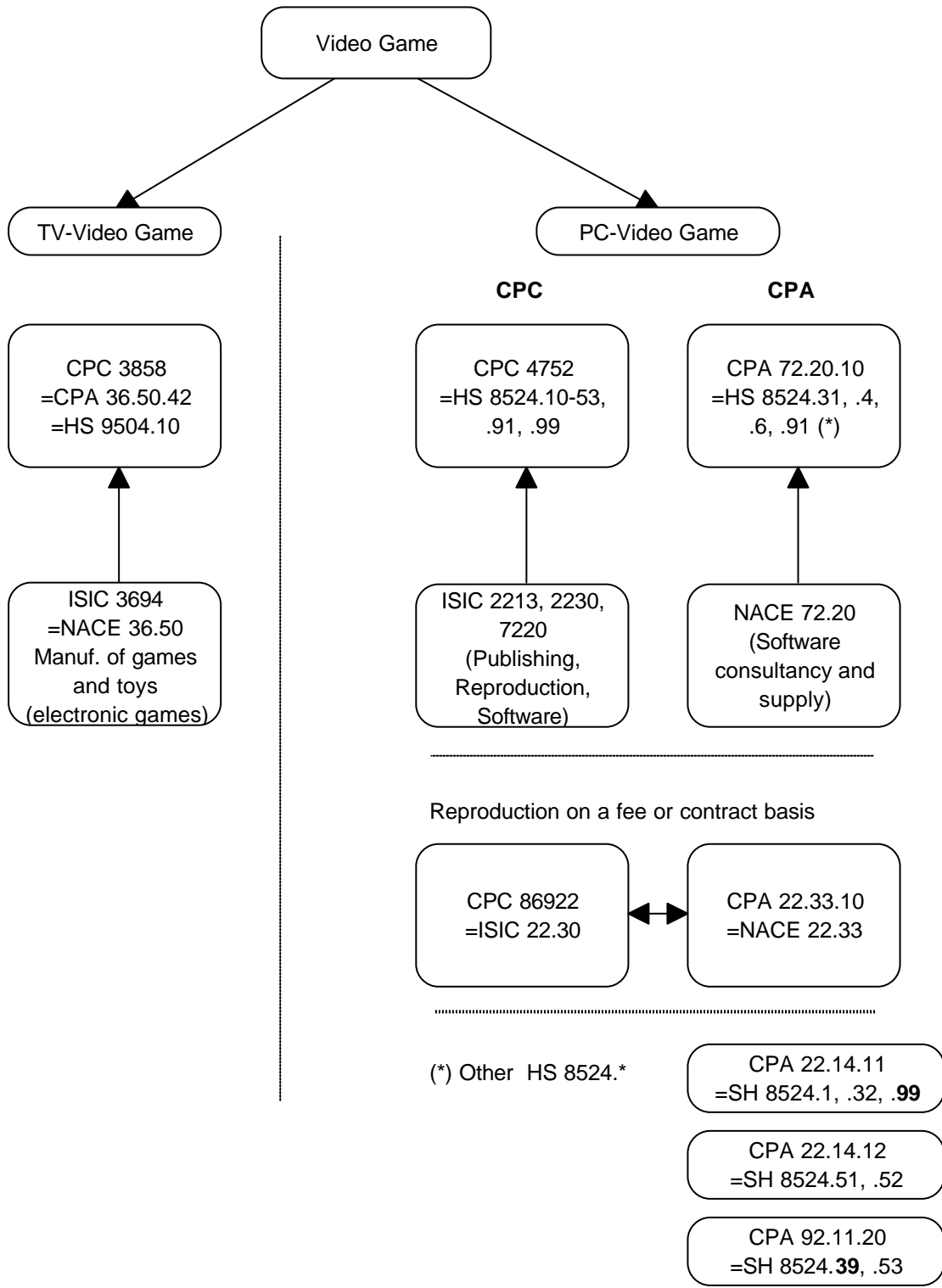
¹¹ Finally, a PC-video game is neither a video product, if it were so, it would have been classified among audiovisual products, nor a game, if it were so, it would have been classified among manufactured products!

¹² In the CPC, trade concerns goods only. The subdivision 623 - Mail order retail trade services includes "*mail, catalogue or internet sales services by stores that accept orders of new or second hand*

And if he pays only for playing "on line"? Is it a rental service concerning video games (CPC 7322), the purchase of a data bank service?

goods by mail, telephone, e-mail etc., and ship or deliver products to the customer's door."

DIAGRAM



APPENDIX 3

Example Products from the UN Central Product Classification (CPC)

ISIC	ISIC TITLE	CPC	CPC TITLE	Corresponding HS
22	Publishing, printing and reproduction of recorded media	86910	Publishing, on a fee or contract basis	
22		86921	Printing services and services related to printing, on a fee or contract basis	
2211	Publishing of books, brochures, musical books and other publications	32210	Printed books, brochures, leaflets and similar printed matter, in single sheets, other than advertising material	4901.10
2211		32220	Dictionaries and encyclopaedias, and serial installments thereof	4901.91
2211		32230	Printed books (except dictionaries and encyclopaedias and serial installments thereof), brochures, leaflets and similar printed matter, other than advertising material, not in single sheets; children's picture, drawing or colouring books	4901.99, 4903
2211		32240	Atlases and other books of maps or charts	4905.91
2211		32250	Maps and hydrographic or similar charts (including wall maps, topographical plans and globes), printed, other than in book-form	4905.10, .99
2211		32260	Music, printed or in manuscript	4904
2212	Publishing of newspapers, journals and periodicals	32300	Newspapers, journals and periodicals, appearing at least four times a week	4902.10
2212		32400	Newspapers, journals and periodicals, appearing less than four times a week	4902.90
2213, 2230, 7220	Publishing of recorded media, Reproduction of recorded media, Software consultancy and supply	47520	Records, tapes and other recorded media for sound or other similarly recorded phenomena (except cinematographic film and cards with magnetic stripe)	8524.10 - .53, .91, .99
2219	Other publishing	32510	Unused postage, revenue or similar stamps; stamp-impressed paper; cheque forms; banknotes, stock, share or bond certificates and similar documents of title	4907
2219		32520	Printed or illustrated postcards; printed cards bearing personal greetings or messages, with or without envelopes or trimmings	4909
2219		32540	Printed pictures, designs and photographs	4911.91
2219		32560	Transfers (decalcomanias) and printed calendars	4908, 4910
2221	Printing	32530	Trade advertising material, commercial catalogues and the like	4911.10
2221		32590	Other printed matter	4911.99
2221		32600	Registers, account books, note books, letter pads, diaries and similar articles, blotting-pads, blinders, file covers, forms and other articles of stationery, of paper or paperboard	4820
2230	Reproduction of recorded media	86922	Reproduction services of recorded media, on a fee or contract basis	

3694	Manufacture of games and toys	38580	Video games of a kind used with a television receiver	9504.10
7240	Data base activities	84300	On-line information provision services	
7413	Market research and public opinion polling	83700	Market research and public opinion polling services	
7430	Advertising	83610	Planning, creating and placement services of advertising	
7430		83620	Purchase or sale of advertising space or time, on commission	
7430		83690	Other advertising services	
8090	Adult and other education	92900	Other education and training services	
9211	Motion picture and video production and distribution	38950	Cinematographic film, exposed and developed, whether or not incorporating sound track or consisting only of sound track	3706
9211		96130	Audiovisual production support services	
9211		96141	Motion picture, video tape and television programme distribution services	
9211		96142	Film and video post-production services	
9211		96149	Other services related to the production of motion pictures, video tapes and television and radio programmes	
9211, 9213		96121	Motion picture, video tape and television programme production services	
9211, 9213		96122	Radio programme production services	
9212	Motion picture projection	96151	Motion picture projection services	
9212		96152	Video tape projection services	
9213	Radio and television activities	96160	Broadcasting (programming and scheduling) services	
9220	News agency activities	84410	News agency services to newspapers and periodicals	
9220		84420	News agency services to audio-visual media	
9231	Library and archives activities	84510	Library services	
9231		84520	Archive services	
9249	Other recreational activities	96111	Sound recording	
9249		96112	Audio post-production services	

APPENDIX 4

Examples from the French Enterprise Annual Survey EAS

1. Audiovisual Products concerning Video Publishing

AES	AES TITLE	CPA	CPA TITLE	CPC	CPC TITLE
921D51	Images de synthèse et trucages vidéo numériques pour le cinéma	92.11.32	Prestations techniques pour le cinéma et la télévision	96142	Film and video post-production services
921D56	Images de synthèse et trucages vidéo numériques pour la télévision	92.11.32	Prestations techniques pour le cinéma et la télévision	96142	Film and video post-production services
921D5A	Images de synthèse et trucages vidéo numériques pour les programmes de commande	92.11.32	Prestations techniques pour le cinéma et la télévision	96142	Film and video post-production services
921G10	Édition de CDROM ou de CDI	72.20.22	Progiciels applicatifs	83142	Software consultancy services
921G10	Édition de CDROM ou de CDI	92.12.10	Distribution de films	96141	Motion picture, video tape and television programme distribution services
921GA1	Édition de films cinématographiques français sur vidéogrammes destinés à la vente	92.12.10	Distribution de films	96141	Motion picture, video tape and television programme distribution services
921GA2	Édition de films cinématographiques français sur vidéogrammes destinés à la location	92.12.10	Distribution de films	96141	Motion picture, video tape and television programme distribution services
921GA3	Édition de films cinématographiques étrangers sur vidéogrammes destinés à la vente	92.12.10	Distribution de films	96141	Motion picture, video tape and television programme distribution services
921GA4	Édition de films cinématographiques étrangers sur vidéogrammes destinés à la location	92.12.10	Distribution de films	96141	Motion picture, video tape and television programme distribution services

921GB1	Édition de fictions télévisuelles sur vidéogrammes destinés à la vente	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GB2	Édition de fictions télévisuelles sur vidéogrammes destinés à la location	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GB3	Édition de fictions à caractère pornographique sur vidéogrammes destinés à la vente	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GB4	Édition de fictions à caractère pornographique sur vidéogrammes destinés à la location	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GB5	Édition d'autres fictions sur vidéogrammes destinés à la vente	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GB6	Édition d'autres fictions sur vidéogrammes destinés à la location	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GC1	Édition de documentaires sur vidéogrammes destinés à la vente	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GC2	Édition de documentaires sur vidéogrammes destinés à la location	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GD1	Édition de programmes d'animation sur vidéogrammes destinés à la vente	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GD2	Édition de programmes d'animation sur vidéogrammes destinés à la location	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services

921GF1	Édition d'autres produits audiovisuels (films institutionnels, ...) sur vidéogrammes destinés à la vente	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GF2	Édition d'autres produits audiovisuels (films institutionnels, ...) sur vidéogrammes destinés à la location	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services
921GF9	Autres recettes de l'édition vidéo	92.12.10	Distribution de films	96141 Motion picture, video tape and television programme distribution services

2. News Agencies services

AES	AES TITLE	CPC	CPC TITLE
924Z1A	Services des journalistes indépendants	84410	News agency services to newspapers and periodicals
924Z1B	Services des photographes de presse indépendants	84410	News agency services to newspapers and periodicals
924ZA0	Services d'agences de presse photographiques	84410	News agency services to newspapers and periodicals
924ZB1	Services d'agences de presse "chaudes" - Diffusion d'informations générales :sur support texte	84410	News agency services to newspapers and periodicals
924ZC1	Services d'agences de presse "froides" et photographiques - Fourniture sur commande d'articles et rubriques clés en mains	84410	News agency services to newspapers and periodicals
924ZC2	Services d'agences de presse "froides" - Conception de journaux, sous-traitance de pages	84410	News agency services to newspapers and periodicals
924ZC3	Services d'agences de presse "froides" - Fourniture de publi-reportage et de dossier de presse	84410	News agency services to newspapers and periodicals
924ZD1	Services d'agences de presse "chaudes" - Informations spécialisées (économiques, financières, sportives) : sur support texte	84410	News agency services to newspapers and periodicals
924Z20	Fourniture de produits audiovisuels servant à la presse sur commande ou catalogue	84420	News agency services to audio-visual media
924ZB2	Services d'agences de presse "chaudes" - Diffusion d'informations générales : sur support audiovisuel, sonore ou multimédia	84420	News agency services to audio-visual media
924ZC3	Services d'agences de presse "froides" - Fourniture de publi-reportage et de dossier de presse	84420	News agency services to audio-visual media
924ZD2	Services d'agences de presse "chaudes" - Informations spécialisées (économiques, financières, sportives) : sur support audiovisuel, sonore ou multimédia	84420	News agency services to audio-visual media

APPENDIX 5

Candidate Industries for the Electronic Communication Product Sector (ISIC.3)

Manufacturing

- 2211 Publishing of books
- 2212 Publishing of newspapers
- 2213 Publishing of recorded media
- 2219 Other publishing
- 2221 Printing
- 2230 Reproduction of recorded media

Services

- 7220 Software consultancy and supply (partly)
- 7240 Data base activities
- 7413 Market research and public opinion polling
- 7430 Advertising

- 80 Education

- 9211 Motion picture and video production and distribution
- 9212 Motion picture projection
- 9213 Radio and television activities
- 9220 News agency activities
- 9231 Library and archives activities
- 9232 Museum activities and preservation of sites and buildings

Explanatory Notes

Manufacturing

221 Publishing

This group includes publishing whether or not connected with printing. Publishing involves financial, technical, artistic, legal and marketing activities, among others, but not predominantly. The breakdown into classes is based on the type of printed matters or recorded media published.

Exclusions: Printing is classified in class 2221.

Reproduction of recorded media is classified in class 2230.

Publishing of motion pictures and video tapes is classified in class 9211 (Motion picture and video production and distribution) and of computer software in class 7220 (Software consultancy and supply).

Preparation and production on a fee or contract basis of master copies for records or audio material are classified in class 9249 (Other recreational activities).

2211 Publishing of books, brochures, musical books and other publications

This class includes publishing of books, textbooks, atlases and maps, brochures, pamphlets, musical works and other publications.

2212 Publishing of newspapers, journals and periodicals

This class includes publishing of newspapers, journals and periodicals of a technical or general contents, trade journals, comics, etc.

2213 Publishing of recorded media

This class includes publishing of records and other recorded audio media.

Exclusions: Publishing of motion pictures and video tapes is classified in class 9211 (Motion picture and video production and distribution) and of computer software in class 7220 (Software consultancy and supply).

2219 Other publishing

This class includes publishing of photos, engravings and postcards, time tables, forms, posters, reproduction of works of art, or other printed matters. This class also includes all micropublishing.

2221 Printing

This class includes printing of newspapers, magazines, periodicals, journals, books, music pamphlets, maps, atlases, posters, playing cards and other material for others on a fee or contract basis, e.g. catalogues on account of machinery producers; postage, revenue stamps or currency on account of governments; books, albums, diaries, business forms, etc., on account of stationers.

Printing includes reproducing material by means of duplicating machines, computer controlled reproduction, embossers, photocopiers or thermocopiers.

Exclusions: Printing of labels of paper or paperboard is classified in class 2109 (Manufacture of other articles of paper and paperboard).

Publishing of printed matters is classified in group 221.

Producing original material by authors, musicians, engineers, architects and others is classified in the industry appropriate to their technical or artistic activity.

2230 Reproduction of recorded media

This class includes reproduction of records, audio, video and computer tapes from master copies, reproduction of floppy, hard or compact disks, reproduction of non customized software and film duplicating.

Exclusions: Reproduction of printed matters is classified in class 2221 (Printing).

Production on a fee or contract basis of intermediate products such as master records is classified in class 9249 (Other recreational activities).

Services

7240 Data base activities

This class includes the following three types of data base related activities:

Data base development, i.e. the assembly of data from one or more sources.

Data storage, i.e. the preparation of a computer record for such information in a predetermined format.

Data base availability, i.e. the provision of data in a certain order or sequence, by on line data retrieval or accessibility (computerized management). The data can be of any kind, such as financial, economical, statistical or technical. The data may be accessible to everybody or to limited users and can be sorted on demand.

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

7413 Market research and public opinion polling

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

7430 Advertising

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

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

Market research is classified in class 7413.

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

Direct mailing activities are classified in class 7499 (Other business activities n.e.c.).

Production of commercial messages for radio, television and film are classified in the appropriate class of group 921 (Motion picture, radio and television and other entertainment activities).

7499 Other business activities n.e.c.

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

- bill collecting, credit rating in connection with an individual's or firm's credit worthiness or business practices.

- business brokerage activities, i.e. arranging for the purchase and sale of small and medium sized businesses, including professional practices.

- appraisal activities other than for real estate and insurance.

- stenographic, duplicating and mailing activities, including typing and other secretarial activities such as transcribing from tapes, discs or belts, proof reading, etc., copying, blue printing, multigraphing and similar activities; envelope addressing, stuffing, sealing and mailing, mailing list compilation, etc., including for advertising material.

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

- demonstration and exhibition activities.

- auctioning activities.

- editorial activities.

- translation and interpretation.

- microfilming activities.

- trading stamp activities.

- telephone answering activities.

Also included are activities carried on by agencies on behalf of individuals usually involving the obtaining of engagements in motion pictures, theatrical production or other entertainment or sports attractions and the placement of books, plays, artworks, photographs, etc., with publishers, producers, etc.

Exclusions: Extending credit through the use of credit cards is classified in class 6592 (Other credit granting).

Machinery and industrial design are classified in class 7421 (Architectural and engineering activities and related technical consultancy).

Display of advertisement and other advertising design is classified in class 7430 (Advertising).

M Education

DIVISION 80 EDUCATION

This division includes public as well as private education of all types, provided by institutions as well as by private teachers, as a full time education or on a part time or intensive basis, at day time or in the evening and at any level or for any profession.

The first three groups cover education which may be included under "the regular school system", i.e. a system of progressive school education for children and young people from the pre primary school level through the university level. The breakdown of the categories is primarily based on the level of education offered.

Exclusion: Education primarily concerned with recreation such as bridge or golf education is classified in the appropriate class of group 924 (Sporting and other recreational activities).

- 8010 Primary education
- 8021 General secondary education
- 8022 Technical and vocational secondary education
- 8030 Higher education
- 8090 Adult and other education

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

9211 Motion picture and video production and distribution

This class includes the production of theatrical and non theatrical motion pictures, whether on film or on video tape, for direct projection in theatres or for broadcasting on television. It usually involves production in a motion picture studio or in special laboratories for animated films or cartoons. The products may be full length theatrical films, documentaries, shorts, etc., for public entertainment, for advertising, education, training and news information as well as

religious pictures, animated cartoons of any kind, etc. Also included are auxiliary activities on a fee or contract basis such as film editing, cutting, dubbing, etc.

Distribution of motion pictures and video tapes to other industries but not to the general public is also classified here. This involves the sale or rental of movies or tapes to other

industries, as well as activities allied to the distribution of films and video tapes such as film and tape booking, delivery, storage, etc.

Exclusions: Film duplicating as well as audio and video tape reproduction from master copies are classified in class 2230 (Reproduction of recorded media).

Retail trade of tapes is classified in the appropriate class of group 523 (Other retail trade of new goods in specialized stores) or 525 (Retail trade not in stores).

Renting of tapes to the general public and renting of scenery and costumes are classified in class 7130 (Renting of personal and household goods n.e.c.).

Film processing other than for the motion picture industry is classified in class 7494 (Photographic activities).

Agency activities are classified in class 7499 (Other business activities n.e.c.).

Production of films or tapes normally produced in television studios is classified in class 9213 (Radio and television activities).

Activities of own account actors, cartoonists, directors, consultants and other technical specialists, etc., are classified in class 9219 (Other entertainment activities n.e.c.).

9212 Motion picture projection

This class includes motion picture or video tape projection in theatres or in the open air and in private screening rooms or other projection facilities.

Exclusions: Renting of space in theatres, etc., is classified in division 70 (Real estate activities).

9213 Radio and television activities

This class includes production of radio and television programmes, whether live or on tape or other recording medium and whether or not combined with broadcasting.

The programmes produced and broadcast may be for entertainment, for promotion, education or training or news dissemination. The production of programmes generally results in a permanent tape which may be sold, rented or stored for broadcast or re broadcast. Also included are productions such as sports covering, weather forecasting, interviews, etc.

Exclusions: Cable television is classified in class 6420 (Telecommunications).

Radio and television transmission by relay or satellite are also classified in class 6420.

Agency activities are classified in class 7499 (Other business activities n.e.c.).

Production of movies and video tapes in movie studios is classified in class 9211 (Motion picture and video production and distribution).

9220 News agency activities

This class includes news syndicates and news agency activities consisting in furnishing news, pictures, features to the media and news reporting services to newspapers, periodicals, and radio and television broadcasters.

9231 Library and archives activities

This class includes a wide variety of documentation and information activities provided by libraries and archives. Activities of libraries of all kinds, reading, listening and viewing rooms, public archives, etc.

This usually involves the organization of a collection whether specialized or not, making catalogues, lending and storage of, e.g. books, maps, periodicals, films, records, tapes, retrieval activities in order to comply with information requests, etc. The services may be provided to the general public or to a special clientele, such as students, scientists, staff, members, etc.

Exclusions: Data base activities are classified in class 7240.

9232 Museums activities and preservation of historical sites and buildings

This class includes the operation of museums of all kinds such as art museums, museums of jewellery, furniture, costumes, ceramics, silverware, etc., natural history and science museums, technological museums, historical museums including military museums and historic houses and all kinds of other specialized museums.

Also included is the preservation of historical sites and buildings.9211 Motion picture and video production and distribution

Complementary list (?)

3694 Manufacture of games and toys

This class includes manufacture of:

- dolls representing people or other creatures and doll garments and accessories.

- wheeled toys designed to be ridden (other than bicycles but including tricycles).

- toy instruments.

- articles for funfair, table or parlour games, including pintables, billiards, special tables for casino games and automatic bowling alley equipment.

- electronic games (video games, checkers).**

- reduced size ("scale") models and similar recreational models, working or not; puzzles of all kinds; other toys.

Exclusions: Manufacture of children's bicycles is classified in class 3592 (Manufacture of bicycles and invalid carriages).

Manufacture of jokes and novelties is classified in class 3699 (Other manufacturing n.e.c.)

7220 Software consultancy and supply

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

Exclusions: Reproduction of non customized software is classified in class 2230 (Reproduction of recorded media).

Similar activities carried out as an integrated part of the reselling of software are classified in class 5239 (Other retail sale in specialized stores).

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

GLOSSARY OF TERMS

The following is a list of terms used in the discussion paper, with a short definition.

Communication Product: A good or a service resulting from a combination of content and medium.

Communication Sector: Those industries that produce communication products as part of their principal activity.

Content: Data, information or codified knowledge.

Electronic Content: Data, information or codified knowledge that can be displayed, processed, stored, or transmitted electronically.

Electronic Information Sector: Those industries in the Electronic Communication Product Sector and those in the Information Communication Technology Sector (Appendix 1)

Electronic Information Society: The socio-economic impacts of the products produced by the industries in the Electronic Information Sector, along with the economic activity of the Sector.

Electronic Medium: A means by which data or information Data, information or codified knowledge can be displayed, processed, stored, or transmitted electronically.

Product: A good or a service.