Generalitat de Catalunya
Institut d'Estadística de Catalunya

FUTURE TRENDS 1998-2003
NATIONAL EXPERT SURVEY IN THE AREA OF ELECTRONIC INFORMATION SERVICES IN SPAIN

Projections based on 1997 / 98 figures

A survey in the framework of the MSSTUDY II in 16 countries, supported by the *European Commission* and the *Institut d'Estadística de Catalunya*

Integrated report with the opinions a panel of 29 Spanish experts.

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Foreword

This report is one of the parts which integrates *MSStudy II* (second *Member States Study* --the first one was carried out with data of 1994--) about the ***"Situation of the markets of the electronic information in the countries of the European Economic Area"***, in this document referred exclusively to Spain. The other parts are:
- Exhaustive study to evaluate in economic terms the offer of electronic information (online, optical media, webs, etc.) carried out by means of questionnaires posted by surface mail and fax, interviews to key agents of the sector and searches in databases;
- Analysis of the demand by means of 1.600 useful telephone interviews –more than 11.000 tentative calls--, carried out in December 1998.
- Case study. In Spain it has been chosen: "Use of information in pharmaceutical laboratories", that has been carried out by mean of questionnaires posted by surface mail and fax.

MSStudy is 50% funded by the programme *Info2000* of the *DGXIII* of the *European Commission* (*EC*). The Spanish part of the study is being carried out by the *Institut d'Estadística de Catalunya*, in cooperation with *Asedie-Cindoc*, the organisations that compose the Spanish *Midas* node. *Midas* is a network of centres created by the *CE* with the aim to promote the programme *Info2000*, that, as it is already known, carries out actions that boost the market development of the electronic information, helping to manufacture products and services online and offline that could be easily marketed.

In Europe the project *MSStudy* is technically leaded by the German consulting firms *Institute for Information Economics* and *Infratest Burke*, that have designed a common methodology that was consensuated in various preparatory technical meetings and is applied in the 16 participating countries. With this, comparative results are guaranteed.

Electronic information. Spain. 1997-2003

Panel of interviewed experts

This report is the result of integrating 28 questionnaires answered by 29 Spanish experts (two of them fulfilled only one questionnaire) that have years of experience in The information sector --most of them are known because of their previous analyses and works--, that come from very different areas, like public administrations, big and small companies, universities, research centres, specialised journalism, etc. Their opinions have been interpreted, grouped and re-elaborated in two steps, the second one having received the approval of the participants (see the list in the final appendix).

To all of them we want to express our most sincere knowledge because they have afforded their time altruistically. Specially we want to thank them for their valuable opinions and ideas.

The criteria to choose these specialists have been in all the cases their notoriety and because they pertain to environments very different of the sector of the electronic information. Although we are very satisfied of the great professional category of the panel that we have been able to join for this study, evidently we could had asked the collaboration of other many good professionals of our country. Part of the "selection" came facilitated by their proximity to *Asedie* and to the *Centro de Información y Documentación Científica* (*Cindoc*), of the *Consejo Superior de Investigaciones Científicas* (*Csic*), as well as the journal *El Profesional de la Información*, which is devoted to these matters. Also we must say that some persons to whom we asked for collaboration apologised for not being able to answer the questionnaire in the period of time when the operation was carried out.

Following the recommendations of the team that leads *MSStudy*, we chose a small panel in order to carry out a study more qualitative than quantitative.

Scope of the study

We have to remind that, as the rest of the *MSStudy*, this questionnaire always addresses the information **market**. I. e., information **not free of charge** for which users are prepared to pay directly for it. In principle we exclude, thus, the information free of charge produced by the public administrations. Although the information paid indirectly by mean of advertising (of which in Spain there are already some cases, far from being 100% self-financed) is also treated, this study is based primarily on the information services paid by the own end-user, be it institutional or private.

As it happens often in this sector, all the concepts treated in the questionnaire are very interrelated, what (the reader will notice) has caused that some experts refer to the same topics in different sections. We have thought more appropriate to leave the answers in their original place.

1. Electronic business information services(1) and consumer services(2)

DEFINITIONS:

(1) **Business information services or professional electronic information for companies**
Information services online and offline (cd-rom, etc.) used mainly with professional purposes in the work place (i. e.: in a business, a research institute or an institution of the administration). Examples: *Dialog*, *STN*, *BOE*, *Informa*, *MyNews*, *Cindoc*, *Baratz*, *Dun & Bradstreet*, *Reuters*, *EFE*, etc.

(2) **Information for the consumer (general public)**
Information services online and offline (cd-rom, etc.) used mainly by individuals for private scopes in their homes. Examples: *CompuServe*, *Servicom*, *Sarenet*, newspapers in web, encyclopaedia in cd-rom, courses, educational works, etc. Games, music only CDs, movies and other fiction or entertainment works **are excluded.**

1.1. How will business information services (including scientific, technical and medical information and consumer services participate in the development of the markets for electronic information services in Spain between 1997 and 2003 (in terms of revenues):

1997	2003
60% *	**50,6%****

* Estimation of the *Institut d'Estadística de Catalunya*
** Average value obtained by the panel.

Distribution of the 28 answers received to this question:

% 20 x 25 30 xxx 35 xx 40 xxxx 45 xxx 50 xxxxxxx 55 x **60** x 65 xxx 70 x 75 x 80 85 x	the average value obtained by the panel was **50,6 %,** that is, most of them think that the proportion of the markets professional information/consumer information will decrease from 60% to 51% (approximately) in the next 4 years.

1.2. Reasons for this assessment

In order to analyse the answers to this first question we have sorted the questionnaires according to the percentages assigned to the professional information in relation to the total market, beginning from the lower ones. Nevertheless many personal aspects and observations appear: some experts base their figures on their own previous forecasts much higher or much lower, and because of that there is not a correlation between the figure and its justification. Thus, for instance, in spite that two experts give the optimistic amounts of 65% and 70%, respectively, for the volume of professional services over the total (quite higher on the average), they believe "that these services will experiment only a moderate increase".

We think, then, that the obtained average figure (50,6%) results indicative, but it is appropriate to read the opinions that follow.

As it can be seen in the above ranking, 72% believe that the information for companies will decrease its current market share and 28% believe that this segment will keep the same proportion or even will increase.

Those who propose the lower amounts, or at least lower than the current 60%, think that the professional market has reached its maturity (**Hogge**). On the contrary, the consumer market will experiment proportionally a more important development ("explosive" says **Rodríguez Rovira**). **Rey** agrees with this future preponderance of the domestic market, but believes that "gradually the companies have more capacity to develop or to use their own information services". this is an interesting idea: the companies could have less expenses buying external information if at the same time they would organise appropriately the internal one, as well as the external information that they might continue getting from outside the company.

Companies supplying the domestic market (or mass market) are much more dynamical and carry out new systems and services like tele-shopping, economic management, health, travelling and hobbies, what in the long term can evolve in the sale of more information services (**Beitia**).

J. À. Borràs thinks that the key issue for the increase of the consumer market is the adequacy of each type of publication to the electronic media and not simply to adapt previous works thought and published initially on paper.

Up until now it seems that it has been both poor imagination and too much caution, and as a result, there have been developed few products genuinely electronic that convince people about the advantages of this media. A simple screen full of text can not demonstrate any advantage over a printed page of paper with the same text.

Hípola considers that, although both sectors professional and general public can increase in absolute figures, the relative participation of the first will decrease until to settle at one third. **Codina** and **Rodríguez Seoane** even lower the professional information to one quarter of the market, stabilising this proportion in the gap 25-33%. With higher or lower percentages, practically all the experts agree with this, although, as already was said, it is expected that their proportion still be around 50% in 2003.

On the other hand we have to take into account the price reductions that are happening in the business information (legislation, directories, catalogues, news, patents...). Databases that some years ago were very expensive, currently are given for free, or nearly. The amount and the use of professional information could increase but their market value could decrease.

This is a topic very interesting. It do not seems that **all** the professional information will be given for free, not at all. Which types of information should be considered?

Nevertheless, something similar can occur with the public users in general, says **García-Sicilia**: "no doubt, the number of these users will augment, but as it just has been said, one thing are the quantities and other very different the sales value. It is possible that the information for the consumer be free or be paid by advertising, but on the contrary some special information of great added value for companies, that is, really *professional* information, probably will be much more expensive in the future".

Split opinions...

Abadal, who places his forecast about the increase of the professional information quite lower than the panel average, affords an interesting idea that should be analysed deeper: "it would be sensible to think that the trend will be to reach the same proportion that currently exists in the printed environment". Is this a guideline about the future electronic market behaviour? Will the electronic market be a reflection of the printed one?

J. À. Borràs, one of the experts that places the proportion of professional information lower (20%), believes that one have to observe what is happening in the countries that presently are the electronic publication motors, and affords figures of a study by *Simba* (*http://www.simbanet.com/www2/products/*), --although this takes more in to account the multimedia information industry, much more thought for the consumer--. "Probably the professional / consumer rate still would be lower, but the imminent explosion of the electronic commerce, with systems addressed to the professionals (what is known as *business to business*), will lead to the creation and consolidation of new electronic information services. The consumer market will benefit from the success of these professional achievements".

Nevertheless the contrary can also be true. Many products (hard and soft) and services have become cheaper thanks to the massification... the professional market takes advantage of the dynamics that the consumer market creates. One could infer that there will be a synergy between both markets. This is not a surprise, because it has been observed (in general) since various years ago, not only with the type of information but also with the different technologies and media used. Far from competing, they have given mutual support each other.

It is interesting to record an opinion of **Guillem** about the positive effect of advertising over the production of electronic information: "advertising not only will allow to offer more information products to the consumer but besides will impel their flourishing". That is, not only we would depart from an information product and would look for advertisements to finance it; besides in many cases the advertising agents would create or revitalise information systems in order to channel their ads through them.

It must be admitted that in the printed world, with the exception of some big and prestigious scientific journals, advertising has to fund publications in variable amounts very different from one to the other. For the case of the average daily newspapers the income for advertising can be 60% of the total. Some local newspapers are 100% financed by advertising. Also the percentage is very high in mass journals sold through news agents. Thus, the importance of advertising is clear for the printed periodicals.

As we are hearing the opinions of the experts' panel that assign medium and high rates to the consumer information, we note that in general they tend to have more into account the new technological options, the ways of distributing information, the cheapening and improvement (performances, speed) of hard, soft and lines (**Benjumeda / Mira**, **J. À. Borràs**, **de The Viesca, Jáudenes and Molinero**), the extended installation of terrestrial links and other developments of the telecom industry (**Aguillo** and **Rodríguez Seoane**). This last one foresees many new opportunities in the business field "to make more dynamical the sale of bespoken information products, multiplying the possibility of new clients and markets, that even can become end users of the domestic environment". **Álvaro** agrees in these lines and afford one list of these and other factors that will contribute to the flourishing of the market "general public":

- price reduction (hard, soft and communications),
- easy use of computers,
- easier information retrieval,
- more important offer of information interesting to consumers,
- better communications infrastructures (higher transmission speeds, etc.),
- increase of teleworking and of autonomous work (this point is shared by **Aguillo**).

"Nevertheless", continues **Álvaro**, "these changes are taking place quite more slowly than it had been foreseen, because in spite of the increase of the number of computers in the homes and the success of the web among the general public, the consumption of information for private use will not reach the same level as the one for the companies in 2003" (for this date **Álvaro** foresees that company information will represent a 55% of the market).

As it is quite known, Spain suffers an important lack of "information culture" (the reading level is low –newspapers, books, scientific-technical reports...--, and much management is carried out "by intuition" without having the proper information). Are we also technofobic? Until now, neither *Telefónica* nor the computer prices have helped very much; it has been easier for other countries. Probably we have been the worse treated users in Europe.

Cornella believes that it has to be taken into account the future appearance of information needs that currently are not-existent. Also, more and more there will be education and training needs both general and in the business environment. In relation with the "virtual educational" market, **J. À. Borràs** (who, following the *Simba* report, considers it as a separate segment of both the business and the consumer markets) thinks that increase much more than the strictly "professional". The foreseen figure of 4,5 millions of internet users in Spain in the year 2000 (*), credits a bright future for tele-education, because surely there will be a market for this activity among this mass of people.
(*) *Computer industry almanac. Over 300 million Internet users in year 2000 http://www.c-i-a.com/199809iu.htm*

Portela analyses what is happening in the world: "the international industry is betting for the consumer market and the new products and the promotion campaigns are addressed to this sector".

Bravo reminds that progressively are being incorporated to the electronic information market segments of population that traditionally had been marginalised (the people's informational level increases thanks to the price reductions, the generic access tools and the advances in training). This will affect all kinds of information.

Majó expresses a similar line of thought: the increase will continue being important in both sectors, and he expects to be 50-50 in 4 years. **Bustelo** believes that in 2003 the rate between both markets will be similar to the present one, keeping a balance of the respective sales volumes: "The consumer (market) will increase a lot, but consumers will pay very low prices. On the contrary, the professional market will incorporate the smes, that today are kept aside because of various reasons". Indeed, is of expected that the managers and other personnel of the small and medium size companies, so numerous, which currently use very scarcely the information systems –after they have been fruitless objective of many actions of the *CE* and the national governments--, will enter, at the end, the internet and the information waves by simple immersion in the environment where they behave.

It is interesting the fact that the habit of using information is being introduced in the companies mainly through the staff trained individually externally to their business (at home, in the university), but not by actions addressed to the companies. This is the experience observed on the ground by **García-Sicilia**, who explains it in her answer to the question 2.2.

Lauzière conditions the future of the professional information to the quality of the sources and the networks. Incidentally introduces an interesting contrast with what has been stated by **Rodríguez Seoane** and **Álvaro**, who speak about tele-working and autonomous working in of the group "general public", and on the contrary he situates it as a continuation of "micro-sme". At present the trend is still minimal but we have begun to see cases, not exactly of teleworking –for what it is necessary to set up much more a new business culture— but of autonomous work. Companies merge and restructure, beginning to work networked, or simply outsourcing services. As a result a loss of jobs is produced –at less by now--. The affected workers sometimes do not find another outcome than to work autonomously from home. Nevertheless it is to see if people from home will be important consumer of paid professional information sources.

Aguillo bets firmly for the multimedia edition from "small" actors: individual professionals and SMEs. This will favour the diversity of products, although not necessarily will increase the economic volume of the market, because many of the contributions will be "altruistic". In parallel to the main channels there will be an impressing information offer less visible but with enough quality to deserve to be catalogued.

Rodríguez Seoane says that the domestic market is yet to be created, in spite of having been the segment where more have been invested. The contents industry has not found its path yet --in spite of that no big "inventions" are necessary, as most of the needs that appear are the traditional ones, without prejudice to other new that might arise, as **Cornella** said. The technologies for the home market are not suitable as well --because are too much complicated--.

Practically all the experts believe in a *boom* of the consumer market, bringing forward for their forecast the conjunction of various factors:

- online systems more and more versatile, powerful and cheap,
- translation of more and more information into digital formats,
- inter-operativeness: decision taking based on the creation, participation and processing of information flows.

To what extent this last statement is favouring also the consumer market?

1.3. Please tell if you agree with this statement:
"For providers of business information services it will be more profitable in the near future to offer consumer services additionally"

	Answers
I agree with this statement	8
I agree with this statement only to a certain extent	7
I do not agree	11

1.4. Reasons for this assessment:

In the answers of the experts it is perceived once more how difficult is to separate "professional" and "consumer" in the information field. The same mater in a business database can be converted in consumer information if it is treated in a more superficial, amusing and/or popular way.

[x] I agree with this statement (8 answers)

Current business information suppliers have not other option. The contrary would be like selling tomatoes only to restaurants and not to the fruit shops. And the "consumers" are going to be shops that buy both row and sophisticate cooked tomatoes by the supplier. In this comparison we refer to the restaurants and pre-cooked food companies as if they were "information manufacturers": they join ingredients to obtain new products, with much more value added, ready to use.

It is their only option for broadening their market share, trying that their information reaches directly the end users / consumers (**Molinero**).

The base of the consumer market is very wide, and although the consumption per capita is small, the total amount can be enormous (**Hogge**). Likewise, **Martín Mejías** believes that the greater sales volume will compensate the lower prices of the business information suppliers.

Companies are made out of people and these can appreciate to have information considered "for the consumer" that more or less relates to their work area, jointly integrated to other typically business oriented products. Professional information suppliers have vast amounts of information that can be used directly by the end users. "Consumers" also have professional needs when they situate themselves as "workers" (**Cornella**, **Portela** and **Van den Brule**).

Internet has demonstrate the important market possibilities that the "free of charge" services offer, which can generate benefits both direct and tangible and intangible, especially in a more long term (**Aguillo**). A commercial supplier could offer additionally more *light* information services, paid or not, that would act as a lure and as advertising of other more complex or sophisticated services.

Producers could obtain synergies and more economic yield generating different versions of the same information products, what is known as "versioning" (**Cornella**). See also comments about this in the following section.

By pure arithmetic: if it seems that the suppliers that address their products to the consumer market are going to increase much more in the next years, it could be expected that if business suppliers include some attractive database of general scope this could report them also more important benefits (**Martín Mejías**).

[x] I agree with this statement only to a certain extent (7 answers)

It depends on the chosen marketing strategy by the supplier. In some cases, depending on the type of information offered, it could be appropriate to address it to a great mass of clients, additionally to professionals and intermediaries. In other cases the sales strategy could be based on offering a specialised service only to business (**Bravo**).

There are suppliers that perhaps may opt to have two types of clients based on the same sources of information, but offering two "brands", one of them marketed for the general public with simplified versions of their databases and of their retrieval system. This already has been essayed some years ago big hosts like *Dialog* (service *Knowledge Index*, afterwards sold to *CompuServe* and renamed *I-Quest*) and *BRS* (service *After Dark*) and they failed, although those were ascii-only times, with a context very different (first half of the eighties). It would be advisable that the sales persons or departments marketing those products were different (**Lauzière** and other).

There is another aspect very important, the distribution channel, which in past times caused problems, but today is a solved matter: currently there is a well established platform universally available to everybody: internet, electronic mail, web... (**Lauzière**).

The scale economies due to the fact of having many databases gathered into a big host can lower the costs; and this "supermarket" theory has been true in the online era. This has been evidenced by the disappearance of many of the small hosts that we have seen along the last years. Also it is true that certain hosts were able to make money with a few and expensive specialised databases (*Maid*, currently known as the service *Profound*, of *The Dialog Corp.*), but "one flower does not mean summer", as it is said in Spain. *Maid* was a success with a specific information product in a specific moment. It is not a general example (unfortunately like it is not in almost everything in this information sector, so diverse and changing).

At present the technical situation is different. There exists, as it has been said, a unique platform in the internet environment. Servers can be multiple and the software scalable. In fact, some of those that already tried it now are trying again (webs of *DialogSelect*, STN*Easy*...). After all, what currently perhaps is more crucial is the image and the marketing strategy (**Bravo** and **Hípola**).

"Theoretically it is possible, but the true is that business information suppliers do not know very well if they are ready to compete with the consumer suppliers. Perhaps to a short term, with low investments, they will not be able to obtain any benefits. Nevertheless I believe that the resources that they should dedicate to this new sector necessary to keep themselves competitive in the long term would cause that they would not been able to dedicate enough effort to their niche in which they are really the specialists, a segment that they know well (both their products and their clients). Another option for they to take into account is signing commercial agreements with other suppliers..." (**García-Sicilia** e **Hípola**).

"I agree, but not in a *short term*. To serve the consumers requires differences in strategies very important. The services to companies are approached in another way in terms of types of products, tariffs, advertising, distribution, etc." (**Jáudenes**).

"They should to it but I believe that the success depends on one condition: the information suppliers must produce information products that result attractive to telecommunications companies which at the long term will be the ones who will reach the end users or consumers. The telecommunications sector still is not considering seriously to sell contents in a short term, but surely it will do it" (**Rodríguez Seoane**).

"On the other hand", continues **Rodríguez Seoane**, "big publishing groups, of media, banks, distribution or mixed ones, with different business units --some specialised in consumers and other in business--, are purchasing contents. We already have various examples in Spain with the juridical information producers [*Ciss*, *La Ley*, *Praxis*, *Colex...*, bought by *Wolters-Kluwer*]; search engines [*Olé*, bought by *Telefónica*]; internet access suppliers [*Servicom* and *RedesTB*, bought by *Retevisión*]; etc. Also *Microsoft* is making up a contents repository".

"As we said, if electronic advertising can be a motor engine to produce information, it can also be a motor to convert information that today is labelled as being for business or professional (i. e., for being used in companies) into information for the consumer. It is not unthinkable that the same information could be distributed in two versions: a paid one for the business, without advertising, and another version 'free of charge' sponsored by the advertisers" (**Guillem**).

[x] I do not agree (11 answers)

The proposed sentence could become true in some cases, but in general it is not, say most of the experts.

They are different market segments, with different needs. Moreover the business sector requires a higher specialisation, and the marketing strategies are different. In this case, one can only be effective in one type of service –"cobbler take care of your shoes", tells a Spanish saying—.

Diversification or versioning could be an erroneous strategy. Business products are not suitable for the home sector in most cases. There will be the need to choose one or other market, because each one has their own optimal approach. To be present in both is not easy and require important investments. Some companies will find their market niche, that can be very profitable, if they keep clearly in the business sector (**Abadal**, **Álvaro**, **Beitia**, **Benjumeda / Mira**, **J. À. Borràs**, **Bustelo**, **Codina**, **Mañà**, **Molinero**, **Rey** and **Rodríguez Rovira**).
The consumer market has to be based on very low prices, which seem not compatible with the information offer for the business (**J. À. Borràs** and **Majó**).

On the other hand, sometimes the development of products for the home market can not be done easily. Investments of between M PTA 300 and 1.000 to launch applications addressed to the general public are not unusual (**J. À. Borràs**).

2. Development of the markets of electronic information in Spain

2.1. What will be the average annual growth rate for the market for electronic business information services in Spain between 1998 and 2003? (between 1995 and 1997 it has been estimated as 8% annually)

Years	Average annual growth in %
1998 – 2003	**11,96** **(average value obtained by the panel**

% of annual increase	
8 xx	
9 xxx	
10 xxxxxxxxxxx	All the panel members believe that the increase of the business electronic information will accelerate.
11	
12 x	
13 xx	
14 x	On the average they think that it will pass from the current 8% annual increase to 12% annual in 4 years.
15 xxxxxx	
16	
17	
18	
19	
20 xx	

2.2. Reasons for this assessment:

As it have been said in section 1.2., neither here there is an exact correspondence between the prospective increase figures and the reasons given in each case. Some experts consider with optimism increases somewhat higher than the current 8% and, on the contrary, other make pessimistic commentaries to increases of "only" 12%. Again it is important to read the personal hints and estimations.

Reasons of the experts that believe that the increase will be smaller than it should be. Negative factors:

It is possible that the figure be higher in the USA, Anglo-Saxon countries, etc., but in Spain still there is much way to go (**Van den Brule**). We do not observe that business electronic information is going to exit from their present poor situation. Our impression is that it even has stagnated (**Benito**, **Benjumeda / Mira** and **Rey**). This stop can be perceived not only in the demand but also in the offer, as we can see few new products created. Besides, although they are a free of charge product, "The online library catalogues (opacs) are also reaching their saturation, as long as retrospective conversions are already done, and distributed access with Z39.50 implemented" (**Benito**). It is a relatively mature sector that can not grow much more (**Abadal**).

Jáudenes, nevertheless, think that still there exists quite a number of libraries and documentation centres which stocks are not yet automated, and that are in a process of integrating the catalogue with existing databases. These actions will reinforce the paid retrospective online information.

One real ballast here are the habits. Customs change is produced slowly. We have to incorporate the electronic information to our work procedures, to our learning methods and to our entertainment (**Bustelo**). Along the same lines, **Abadal** and **García-Sicilia** take the view that the business market already know the services but in spite of this use them very little. **García-Sicilia** adds that the problem does not rely purely on habits but also on money, and in order the companies invest in information it is necessary to succeed in that managers and end users use the information services. This will happen mainly with the rising generation, therefore being a relatively slow process. **Hogge** believes, moreover, that the development of the *electronic culture* is very low.

In Spain telematic technologies and networks still are too expensive (**Molinero**) and the networks are too much slow (**De la Viesca**).

Without a planning and with small knowledge about the needs, the offer is unbalanced. "On some topics there is an over-production and on other there is a need. In general I believe also that the information quality is low" (**Molinero**).

Rodríguez Seoane, as already remarked previously, believes that the solution to this general stagnated situation referred by **Benito**, **Benjumeda / Mira** and **Rey** could be that big companies begin to sale also contents. Their dynamic and aggressive marketing would be able to break the existing traditional barriers (habits, information culture, technologies). "This means that the type of products offered by these big companies should change drastically. Information suppliers to these companies should be able to provide them the information on any media".

Reasons of the experts that believe that the increase will be higher. Positive factors:

There will be an increase in the number of users, technological availability (lines, equipment), suppliers and types of uses of the same information (**J. À. Borràs**, **Hípola**, **Mañà** and **Martín Mejías**).

Martín Mejías, **Aguillo** and **Portela** believe that the economy globalisation, the euro zone and the economic integration will be important factors to increase the use of the information, because they will compel companies to look for data about the external markets. **Cornella** and **Jáudenes** are the opinion that the competitiveness will be also a decisive factor that will oblige to use more information; nevertheless, contrary to **Cornella**, **Jáudenes** take the view that the demand is already quite aware. In the same line of thought, **Benito**, **Bravo** and **Martín Mejías** believe that the "revolution" internal to the own companies (knowledge management, intranets, electronic documents management systems) will to emphasise the importance of contents.

Bravo believes that synergies and multiplying effects will be produced between the diverse development lines, both technologic and contents. In particular, the integration of internal and external information in the intranets and in the planning and decision taking systems of the organisations will improve the information use.

Cornella puts into evidence the existence of a market not satisfied, a tacit demand that is expecting for information products and services really useful.

Bravo comments that the foreseen growth in information usage could be more important if the economic conjuncture was better. Currently the economic increase is positive but we are in a des-acceleration phase with respect to the previous period. It is not bad, but it is significantly worse than the years 1995-97. To this respect **Codina**, is not very optimistic: in spite of admitting a low increase, he underlines the tight linkage between the information expenses and the economic situation: all depends on the future of the euro and other currencies, both in our country and in the UE.

At present, accessibility, standardisation, technologies prices (which are decreasing continuously, easy handling, flexibility, user friendliness –quite good, but still improving day by day— and power of software applications, browsers and other tools used for accessing remote databases and electronic information services –internet--, are a reality. After the year 2003 its annual increase will accelerate (**Beitia**, **J. À. Borràs**, **Hípola**, **Jáudenes**, **Lauzière**, **Majó**, **Portela**, **Rey** and **Rodríguez Rovira**). Markets are expanding and accept more information in electronic format "although probably the demand will go behind the offer for many years", says **Aguillo**.

Beitia and **J. À. Borràs** believe that internet and all its related technologies will allow to exploit informative resources which access is currently restricted because of technical (and economic) problems.

The [foreign] scientific publishers already have taken off to the electronic environment, distributing full text documents, specially journals. An associated factor is the company concentration process that we are seen (a recent example in Spain is *DoymaNet*) (**Benito**).

Also it is very positive the fact that both public administrations (to be taken into account to this respect the recent *Green Paper* of the *EC*) and companies are publishing documents that previously were only for internal use, not for confidentiality reasons but for lack of budget or because the printed publication channels are more complicated. Nevertheless there is a great amount of work to be done in order the public administrations adopt uniform criteria in relation to information services tariffs or given for free –compare, i. e., the availability of the patents, promoted by the *European Patent Office*, with the reticence shown by *BOE* (the Spanish official gazette)-- (**Benito**).

Currently there are not any reasons for the non-availability to general public of the sometimes very costly technical studies carried out by the public administrations or outsourced to private consulting firms. Unfortunately too often they are "forgotten" inside a drawer of the desk of a civil servant or a politician (of course, unless it is a classified matter). It is very easy and there is not any excuse now to offer any kind of document through the web of the institution or public body.

Álvaro coincides with many of the opinions expressed by the above experts, but besides she makes the following remarks:

- augment of the information refined with respect to the row information (currently most of the information offered is of the second type). "What it matters is that the information matches more and more the consumer needs (both in contents and format)", adds **Guillem**. In the same direction **Cornella** claims "value added services that help to overcome the information over-dose that business are suffering".
- augment of the security of the Network (this will encourage many producers, especially public administrations) to offer more information,
- facilitation of payments through the Network (micro-payments, secure card payments),
- financial support to the entrepreneurs of new information services,
- improvement in the telecommunications infrastructures.

"Not advancing in any of the above points would be a negative factor for the use of electronic information, as negative is currently", continues **Álvaro**, "that the telecommunications costs in Spain are much higher than in other advanced countries".

Aguillo and **J. À. Borràs** are confident that the definitive liberalisation of the telecommunications, with their subsequent quality increase and price decrease, will foster tele-education and tele-working, and will facilitate the distribution of contents.

3. Markets for electronic business information services in Spain Online and offline

3.1. How will the different distribution media (or channels) participate in the development of the markets for electronic business information in Spain between 1997 and 2003 (in % of the total markets)?

Market shares in %:

	1997*	2003**
Online real-time (news, finance information)	**63%**	**70%**

60 xxxx
65 xxxxxxx
70 xxxxxxxx
75
80 xxxxxx

85 x

	1997*	2003**
Online retrospective	**20%**	**19%**

5 x
10 xxxx
15 xxxxxxx
20 xxxxx
25 xxxxxx
30 xxx

	1997*	2003**
Offline (cd-roms, etc.)	**17%**	**11%**

5 xxxxx
10 xxxxxxxxxxx
15 xxxxxxxx
20 x
25 x

* Estimations of the *Institut d'Estadística de Catalunya*
** Average amounts obtained by the panel

3.2. Reasons for this assessment:

The internet explosion, the liberalisation and subsequent telecommunications price reduction, and the major bandwidth available will be decisive for the online "winning" over the offline. Nevertheless the optical media still will play some rol at less during some years more (**Bravo**, **Guillem**, **Mañà** and **Rey**).

Right now, until the *push* systems (selective dissemination of the information and channels technologies) and the online virtual educational systems addressed to the consumer market are not becoming more popular become more popular the real time online services scene will be occupied by the very specialised finance information and newswire agencies (**J. À. Borràs**). Little by little it will be more normal to have access to information in real time (**Hípola** and **Mañà**), especially if the speed of lines improve; working well, online is more comfortable (**De la Viesca**).

The online distribution in general is clearly thriving, being the real time offer the one which is going to experiment more demand, because it has more unsatisfied needs. It emerges as the exact realisation of the *just in time* –to obtain the information when it is needed— (**Bustelo**, **Codina**, **Rodríguez Rovira** and **Van den Brule**).

Álvaro and **Cornella** takes the opinion that the offline systems will be overcome by the online ones, which cost less and are able to be always updated. Cd-roms have too many servitude (subscription, postal mailing, installation): once habituated to the online connection, if it works properly, it is more comfortable to get everything from the network. Cd-rom has had its rol in the age of bad connectivity. Nevertheless, optical media in general will continue being used while online downloading of big information volumes (images, video) still takes so much time (**Benjumeda / Mira**).

"Marketing has to be addressed to the big companies, which in their turn will dominate to their clients –other companies— and to the home sector. Therefore, direct sale and marketing (traditionally based on cd-roms) will disappear and small companies will be absorbed as it already occurs in internet" (**Rodríguez Seoane**).

Companies' information priorities are focused mainly on data (**Portela**), and the need of having updated time series available to carry out strategic analyses will increase (**Cornella**).

The aggressive new information avalanche that we are "suffering" (perhaps causing problems to some of us) leave us little space, time and resources to be devoted historical and retrospective information. Companies (specially), are loosing interest in the "old" type of information and we, the professionals, do not have real means to make them to use retrospective information. Companies do not find enough economic reasons to maintain the past --in all senses--, because they already have sufficient problems trying to control the present and forecasting the future (**Van den Brule**).

The online retrospective will give up some field to the offline (**Abadal**, **Aguillo**, **J. À. Borràs** and **Rey**). The offline segment will be able to maintain a niche in the market thanks to the new platforms like DVD (**Abadal**), and –leaving aside entertainment, games— will be confined to big databases, referral works (dictionaries, encyclopaedias, directories, catalogues, business annual reports, manuals) and didactic materials (**Bustelo** and **Rodríguez Rovira**).

There exist online information services based on cd-rom platforms. Users of such systems outsource to an external supplier the sometimes complex operation of a cd-rom service (juke-boxes, cd-rom downloading to high capacity hard disks, local network connection, etc.) (**Lauzière**).

The cd-rom market has been partly destroyed because of piracy. Current it is very easy and cheap to copy cd-roms. Many publishers are afraid of launching a costly product because they know that in a few weeks there will be hundreds or thousands of illegal copies. DVDs will be able to solve this problem.

Nevertheless this easy copy possibility could be an attractive factor for their use as home storage media, being the units sold at low prices. Of course, there should be a minimal guaranteed commercial margin for the publishers (**Martín Mejías**).

There will be a clear increase of the offline services addressed to the home market (**J. À. Borràs**).

It is possible that the "property sense" (still existing) typical of the printed age will prevail and endorse the continuity of the optical media, in contrast with the intangibility of online information that obliges users to trust that it will be accessible somewhere on the Net.

For the home market and for specialised documentation centres, cd-rom still is a cheap option, easy to spread and to mail, that allow to avoid the problems inherent to telecommunications (**Van den Brule**).

Afterwards we got the opinion of **Segimon Borràs**, General Secretary of the *Gremio de Editores de Catalunya*, who transmitted us also some comments of **Josep Mª Puig de la Bellacasa**, responsible for the *Area de Edición Multimedia* of the said *Gremio*. Both know very good the situation in Spain:

"Currently the one forth of the main publishers launch products also in other media besides paper. Nevertheless in most cases they do not market them independently, but as a complement and/or integrating a unique product with the traditional paper. This situation do not allow to know the business volume for these new media. Some publishers have begun also the contents exploitation directly through the Net".

"Asking to forecast the future about the usage of one and the other media is like as asking to read in a crystal ball. It was only 3 years ago when everybody predicted a bright success to CDI, a technology that today is dead. Then it also was said: 'Cd-rom is the only platform with a clear and solid future'. Currently it seems that it is being superseded by the DVD, although some experts doubt about DVD speak about Divx."
"It seems that everybody agrees that" continues **Segimon Borràs**, "the future of scientific or technical contents works, databases (dictionaries, juridical repertoires...), encyclopaedias and of reference works will be based on electronic publishing. At a medium term in "material" media and at long term in the networks".

"Regarding fiction and literary works we have to see the incidence that they might have the electronic books; its success will depend directly on their quality, performances and price".

3.3. In the "Online retrospective" submarket there will probably be the following developments between 1998 and 2003 (in terms of average annual growth in %).

Area	More than 20%	15-20%	8-15%	0-8%	Stagnation / Decline
Networks					
Internet	19	4			
Iberpac X.25		1		5	16
InfoVía	4	4	5	7	2

Retevisión	4	2	7	7	1
Cable	9	5	2	7	
Other networks*	1			3	
Content					
Credit information	9	2	5	8	
News, Press	7	5	9	2	1
Other business information	11	3	4	5	
Legal information	9	2	5	8	
Scientific, technical and medical information, patents	6	4	4	9	1
Other areas*					

* Please specify

* Some experts propose various topics that we consider already integrated in the section "Other business information (management, information systems) or in "Scientific information..."
Other experts refer to the retrospective online information for entertainment and addressed to the home consumers, rating it with an increase of more than 20%.

3.4. Indicate some reasons for the assessments, for the networks and for the contents

Networks

Everybody agree that the future is in internet ("internet is unstoppable", says **Portela**) and that the use of *Iberpac*, the public switching packets network X.25, will decline "with the consolidation of the more modern access systems" (**Hípola**). The basic reason for this is that there is a trend to redesign all the systems to convert them web accessible, as well as public administrations general plans to incentive their use (**Álvaro**, **J. À. Borràs** and **Rey**).

It is difficult to draw general validity conclusions from the other answers, because an overlap of trademarks, systems and telecommunications technologies have been produced, which is one of the characteristics of the present times: we can receive data or professional information through the television set, and entertainment (for i., video) through the telephone.

The investments in the different types of cable (coaxial, fibre optics), terrestrial radio-links, satellite, etc., both digital and analogical, are increasing by banks and finance groups, power supply companies and other big firms. All they can benefit from the internet development. Telecom networks of the existing operators will grow and will interconnect to allow and universal access, because cable and internet at the end will merge. All platforms and vias to obtain information will gather their efforts and will standardise in order to offer joint products and services. The user will be able to have access to a great amount of information sources with a minimal computer device (**Aguillo**, **Álvaro**, **Guillem**, **Lauzière**, **Martín Mejías** and **Rodríguez Seoane**). **Beitia** comments: "There is a trend the permanent connection, as it is the unique solution for the networks be used. Networks will not be fully accepted while in homes people have to switch on the PC and the modem to connect, having to wait for various minutes in the process. The only future is the PC permanently connected to the Net".

Rodríguez Seoane: "It is not possible to build up an important consumer market based in the PCs like they are at present; in the next future we will see a new type of domestic appliance more similar to the television set than to the PC".

It is obvious that those who are in favour of *InfoVía* (a service implemented and operated by *Telefónica* since September 1995 as a closed Spanish tcp/ip network) refer to the new improved *InfoVía Plus* version. On the contrary, many other to not think that this network, even with newer evolved versions, is going to have any future and say it is an obsolete idea.

Although most experts are not very enthusiastic with *Telefónica*'s competitor *Retevisión* either, some believe that this and other smaller competitors will gain much market share due to the continued and persistent failure of *InfoVía*.

In relation to cable the are two groups: those who takes the view that it will increase about 15-20+% and those who situate the growth in the range 0-8%. It seems an extended idea that cable is going to be the unique information "pipeline" both for companies and homes, but the more "pessimistic" do not think that this is going happen before the year 2003.

J. À. Borràs says that the success key of cable systems will be its payment system, adapted to the domestic economies. **Abadal**, **Aguillo**, **Bravo** and **Rodríguez Rovira** believes that cable, already available in many Spanish cities, will be the type of network with a major increase due to its high data transmission speed, but currently it is still too much expensive. This aspect is crucial to forecast any scenarios. "It is difficult to find an explanation to the delay produced in the cable installation in Spain", says **Aguillo**, "but it is clear that their massive use will occur soon". In the same direction **Codina, Molinero** and **Rey** extrapole the current situation in Spain and base their opinion on the model of the more advanced countries.

Finally **J. À. Borràs** also foresees an increase of the big companies that will install their own nodes and networks (as currently *Dun & Bradstreet*, *Reuters* and other have done) thanks to the free competition in the telecommunications market.

Contents

The formulation of this question, ambiguous on purpose, has risen various comments both from the standpoint of the users and of the producers and distributors, not always coincident.

The important development experienced by all the networks, say **Aguillo**, **Benjumeda / Mira**, **Majó**, and **Rey**, will trigger the appearance of many new suppliers. And "more offer mean more consumption", **Beitia** adds. Nevertheless most of the experts (**Abadal**, **Álvaro**, **Bustelo**, **Codina**, **Hípola** and **Mañà**) think that, particularly classical retrospective professional information will increase quite moderately, slower than the other types of information, and as it already was said in section 1.1., because it is the kind of information that was developed earlier, --and their use is more steady "being used mainly in research centres and in the public administration", says **Jáudenes**--. **Codina** refers to the trends that already are perceived since some time ago: stagnation of the STM information and increase of business and managerial information. **Abadal** predicts an important augment of news information, possibly paid by advertising.

Álvaro believes that the current wide scale process of digitising information and having it accessed via internet – already abandoning the cd-rom— will, at the end, make possible their penetration in the companies: "these have begun to discover their advantages thanks to the affordable low costs, in a web environment that is becoming to be 'familiar'".

Bravo, **de la Viesca**, **Martín Mejías** and **Rodríguez Rovira** foresee a great boost of the strategic information demand (planning information for companies: legal, statistics, newspapers, regulations, managing, marketing) –specially because of the global dimensions of the economy- and lower increase of the "tactical" or operational information (technological, credit). In particular **J. À. Borràs** underlines as being very positive the fact that there are ongoing projects to exploit the regulations and the legislation in various Spanish public administrations. Another dynamic factor is the interest of the financial entities to offer online information searching services to their clients.

However, **Rey** believes that the scientific, medical and technical information, and no need to say the important opportunities contained in patents, is used still by a minority, no exploiting fully their possibilities and advantages. The rising generation, more accustomed to use information, will make the STM segment to grow noticeably.

Equally **García-Sicilia**, in line with **Codina**, says that in Spain will grow the consumption of the information types that currently are underdeveloped, f. i. market reports.

Molinero and **Rodríguez Seoane** believe that the future depends on the amount of added value to the information and/or databases, because texts and other "row" materials already are (or soon will be) in the Network. What it is needed are good and effective indexing and searching systems, both free and paid. The "value added" can be in the way how the information is delivered to the user, and in that sense **Molinero** pleads for a greater development of *push* systems. **Rodríguez Seoane** adds: "Although the quality of the information and their searching systems (*pull*) are very important, the key is the customisation and adequacy to the needs of each type of user".

Rodríguez Seoane insists on the idea, already said, that it will be necessary a redefinition or reorientation of products and services. Otherwise the big companies will absorb the current small suppliers. **Aguillo** annotates positively that currently there exist many small information providers that are trying to market their products satisfying user needs and at the same time they are creating another new ones. Some start the service by offering their informatin free of charge, expecting to get some benefits later in the future. **Rodríguez Seoane** continues: "In the same way as the electricity is sold only by big companies, information –independently of a coexistence with some other minority or marginal information— will be a market own by big structures (big companies)".

3.5. In the "offline" submarkets probably there will be the following developments between 1998 and 2003 (in terms of annual growth in %)

Area	More than 20%	15-20%	8-15%	0-8%	Stagnation / Decline
Cd-rom	3	3	5	7	8
Diskette			1	2	19
DVD-rom	9	4	6	5	
Other formats*	1				

* Please specify.

3.6. Reasons for the assessments:

For one or another of the reasons given below, practically all the asked experts foresee a clear future for the optical media –especially the DVD-- but in the domestic market only.

Bustelo and **Portela** are of the opinion that the universality that cd-rom has reached will allow it maintain its situation along the next years, even as an alternative to the diskette, but nevertheless the incipient DVD (until now existing only a few titles in this platform), "is going literally to blast" (**Aguillo** and **Van den Brule**).

Lauzière and **Mañà** refer to the drastic price reduction of the optical media (discs and readers). Two years ago a disc cost between PTA 800 and 1.200, and a CD reader-recorder between PTA 500.000 and one million. Currently the prices are, for the first, between PTA 200 and 300, and for the second between PTA 15.000 and 25.000.

Nevertheless not all depends on the price reduction. When cd-rom readers were very expensive everybody thought that price was ***the*** barrier that was impeding their mass usage. At present all PCs have a built in cd-rom reader but its use has not exploded as imagined.

The major problems that have slowed down the development of new titles –already annotated before--, are the great investment needed for the productions and the important risk of being illegally copied (these problems have been told personally to us by various cd-rom publishers).

PCs are starting to be sold with DVD readers (cd-rom compatible), but according to **Álvaro** we can expect to see a slow development, at less in Spain, because people do not change their equipment each year nor the publishers are very active yet. To say the truth, until now the cd-rom stage has been quite deceiving for some –in terms of sales—. Possibly we will have to wait the cinema industry to develop and then to take advantage of its popularity.

Nevertheless **Aguillo**, more optimistic, underlines that "DVD will substitute cd-rom as a distribution media in the short term of 24 moths".

The evolution of DVD is still unforeseeable –it depends on the availability of products and on the future marketing campaigns (**Bustelo**), quite poor until now (**Portela**)--. Nevertheless it has to be taken into account that it will solve storage capacity and security (protection against fraudulent copies) problems (**Abadal**, **J. À. Borràs**, **Bravo**, **de la Viesca** and **Rodríguez Rovira**).

Offline publishing technologies requires more and more high capacity storage media. There will be a shift from diskette to cd-rom and from cd-rom to DVD. Thanks to the compatibility of DVD readers it will be possible to keep the current volume of cd-rom production and its market.

Rodríguez Seoane sees DVD simply as a starting point, as the philosophic procedure for the future design of new reading-writing formats oriented to the consumer and compatible with computers and digital television environments.

Benjumeda / Mira and **Jáudenes** believe that offline technologies will be simply a storage media and that most of the information will be distributed online. Besides it will be more comfortable to have all the information sources through a unique system. "Although users (and producers) do not change their habits easily, we begin to observe the trend that the offline professional information products are being transferred to the Network" (**Álvaro**). **García-Sicilia** also states an inverse relation between the progressive quality gain of the internet connections and the use of local media.

The diskette is considered to be in clear declining because of its limited storage capacity in relation to their cost ["it will be soon a relic of the past" (**Rey**), "it is not an alternative any more" (**Abadal** and **Aguillo**), "even the today simpler programmes can not be stored in a diskette" (**J. À. Borràs**)], but **Lauzière** take the view that if the equipment manufacturers eventually would want to install compatible slots for magneto-optical diskettes it would allow to continue using them for more some time as an storage media for small information amounts (i. e., database updates).

Summarising, then, "the offline segment will grow noticeably from nowadays until 2003, but not as much as the online" (**Hípola**).

4. New business areas

4.1. Electronic advertising
Providers of electronic information services (online and offline) will be able to earn more than 20% of their total income (on the average) in the year 2003 with electronic advertising.

	Answers
I agree with this statement	11
I agree with this statement only to a certain extent	12
I do not agree	6

4.2. Reasons for the assessments:

[x] I agree with this statement (11 answers)

According to **Hípola** "we face a new paradigm of the information economy: the users expense tends to zero, and it is the supplier who tries to obtain more financing". **Lauzière** agrees: "The market is lowering the prices of the services and as a consequence the suppliers need an additional income source: advertising".

Codina establishes an analogy with broadcasting: "Information services seem to having found their new business model in other electronic services like the television, which is financed almost exclusively with advertising". **Jáudenes** and **Lauzière** compare this phenomenon with other communication media: some newspapers, technical journals, etc. experiment a similar situation. If the future behaviour of the electronic information is going to be similar to the printed media, the advertising investments will be billionaire.

Benito quotes some figures of the *Internet Advertising Bureau*. According to it the internet advertising contracts have increased by 126% between 1997 and 1998. Therefore, we are at the beginning of fact that promises to accelerate, according to what is happening in other advanced countries (**Majó**).

Molinero says that is necessary to distinguish among various topics, services, social environment and geographical area. In this sense, **Cornella** points out that the electronic advertising market will no be ready to finance all the contents until some years later, at less in Spain. **Van den Brule** thinks that it is not easy to reach the proposed milestone of 20% of the total income with electronic advertising in 4 years only: "we have to plan a very good electronic mailings campaign, to try to be present in the various directories and motor engines, etc."

Hogge bases his opinion on the rationality of taking advantage of the full capacity of the channel used to distribute information. The adverts inserted in webs can subsidise especially the cheaper services (**Beitia**).

[x] I agree with this statement only to a certain extent (12 answers)

Bustelo believes that nobody knows exactly what is going to happen really with the electronic advertising; available statistics differ among them. **Bravo** also alludes to the current emerging market, where there are more questions than answers, and everything can happen. With such a turbulent situation it is difficult to sustain empirical market analysis and therefore this can lead to important strategic mistakes. **Rodríguez Seoane** believes that in the new environment dominated by banks and multinational big companies the income due to electronic advertising will be one among many other factors, and at the moment it still results difficult to advance figures. "We base our forecast too much on the current model. In 2003 probably there will be a new one".

On the same lines expressed before by **Beitia**, **García-Sicilia**, **Guillem** and **Molinero** see advertising possible with cheaper information products addressed to the consumer, and i. e., news, but "not with those more sophisticated and/or having more strategic value, addressed to specific business sectors". **Aguillo** thinks that it is difficult to extent advertising to STM information, although currently there are some important examples (f. i., *Prous*, in Spain).

Álvaro, **Benjumeda / Mira**, **Portela** and **Rey** believe that in the long term newspapers and other press services will self-finance by advertising but the proposed percentage (20%) will not be reached before of the year 2003.

J. À. Borràs thinks that the 20% figure can be attained, in spite that the situation is changing and forecasting difficult. New technologies like *Web Washer*, by *Siemens*, are having a quick acceptation because allow the users to eliminate the adds of the web pages that they read. The advertisers will have to find new ways to insert their ads without increasing the download time of the information pages, nor being too much "aggressive" into the searching interface, thus hindering information searching.

Abadal and **Benito** do not refer to any type of advertising but to the advertising of products and services sold in the Net. "The trend is beginning to be clearly perceived, but when secure e-commerce is available then advertising will grow quickly".

All the experts associate advertising to online distribution, considering as unnoticeable the advertising with/within cd-roms.

[x] I do not agree (6 answers)

All the experts agree with the viability of inserting electronic advertising in webs and databases, although most of them considers different aspects that have been stated in the previous paragraphs.

In particular, those who have answered "no" to this question do not believe that advertising impossible. What they disagree is that a 20% of the income can be earned in this way the next 4 years short term, as it has been asked in the question.

"Considering the electronic information sector globally, the main activity is to distribute contents, not advertising. In our professional segment probably advertising will grow in the next years, but much more slowly" (**Rodríguez Rovira**).

"The experience we have, although scarce, shows that the professional information services hardly can be financed with advertising" (**Mañà**).

4.3. Electronic commerce
Providers of electronic information services (online and offline) will be able to earn more than 5% of their total income (on the average) in the year 2003 with electronic transaction services (electronic commerce).

	Answers
I agree with this statement	22
I agree with this statement only to a certain extent	4
I do not agree	2

4.4. Reasons for the assessments:

[x] I agree with this statement (22 answers)

Hípola, **Lauzière**, **Mañà** and **Van den Brule** underline the advantages of electronic transactions:
- total accessibility (24 hours a day / 7 days a week),
- payment with electronic money,
- personnel cost reduction,
- minimal infrastructure,
- elimination of intermediaries (this allows more competitiveness),
- global reach, etc.

Bravo and **Hogge** take the view that over the substrate of circulating information (be it called via or channel) from the supplier to the user, it is sensible to imagine that eventually can be sold other services or products carrying out ad-hoc transactions. These can be full text documents, photos, books or any other type of document or related object. There are already various examples of online shops, that have had a big success, and the information suppliers should take advantage of this possibility both for themselves –getting the most from their installations— and for the benefit of their users –offering them a more complete service--. **Benjumeda / Mira** consider that "if an product is offered online, all the services inherent to it should be offer also online, and of course their sales and their payments. Any other options are a loss of time".

Other opinions to this respect are: "The electronic transactions are very suitable and recommendable for the online information services, because they already have the necessary structure or can implement it with low additional investments" (**Hípola**). "This is the sector where this new form of commerce could be applied more easily", says **Martín Mejías. Cornella** and **Bustelo** corroborate this, pointing out that already there is a trend in this sense: "We are only in the beginning". **Molinero** believes that the electronic information sector can be less reluctant to use e-commerce because they are habituated to the same equipment. I guess they will have a fair spreading in a few months.

Codina agrees and considers that the electronic transactions will be thoroughly exploited, specially by the services with more traffic amount. **Aguillo** goes further and the qualify them as "a key service". **Guillem** has the opinion that in the 2003 the percentage will be even higher than 5%. **García Sicilia** refers to a *Forrester Research Inc.* study that forecasts a volume of US$ 1,300 billion (expressed in the original: US$ 1,3 trillion) –i. e., PTA 202 billion— in world-wide electronic online sales in the year 2003 (*http://www.forrester.com/*), the major part being transactions between companies (consumers, although important, would represent only a small fraction of this amount). For the current year 1999 *Forrester* calculate already a figure of PTA 6,600 billion. This forecast of *Forrester* (considered to be the main authoritative source in comercio-e information) means annual increases near to 150%. Evidently, it is difficult to know how this is going to impact the information market, but certainly it will make an important difference.

Majó says that, although with some delay, in Spain we are emulating what is happening in other countries.

Benito agrees with the given proposition but he echoes the reticence expressed by the companies (in questionnaires distributed by the *Club de Marketing de Barcelona*) to carry out electronic transactions, both purchases and sales. According to the *Asociación Española de Comercio Electrónico*, the reasons would be based on the lack of security and confidence on the Network, as well as the lack of reliability in obtaining enough returns of the investments in information technologies (currently quite low, especially in smes).

Jáudenes sees the reticence and the fears more in the buyers or users side, probably because of the sensationalist treatment that the press has given to this matter. To send a credit card number through the Network is not more risky than to give it, f. i., to the restaurant waiter. "Independently of the implementation of secure systems, clients of electronic information services will demand this service".

J. À. Borràs reports about the progressive consolidation of the certifying entities (like the Spanish *Fábrica Nacional de Moneda y Timbre*) and about the availability in a few months of secure protocols to pay electronically. Their current absence is a major obstacle for the development of the e-commerce: "confidence is essential". **Álvaro** adheres to this opinion.

[x] I agree with this statement only to a certain extent (4 answers)

Beitia and **Rodríguez Rovira** alert over the fact of that the commercial margins will diminish more and more due to the competitiveness and to the use of shopping robots. Following the same thought line, **Rodríguez Rovira**, who do not believes that the proposed 5% be reached before of 2003, states that "The desintermediation process will accelerate; many big publishers already have implemented this policy (wanting to reach the end users by themselves) and competitiveness among them will be fierce".

On the contrary **Rodríguez Seoane** says: "It is evident that the electronic commerce will grow very much and it is who will understand this fact who will be able to overpass that percentage. Nevertheless the solution for avoiding the current reluctance to the e-commerce needs the support of the finance organisations for the transaction and payment systems. The solution is in their hands, and the information suppliers are only eventual beneficiaries".

"Not all the products and services are equal. In specific cases the consumer needs to know directly what is he/she to acquire. Although it is true that the steps previous to a purchase could be done electronically" (**Lauzière**).

[x] I do not agree (2 answers)

Abadal has not doubts about the increase but "the electronic commerce is still in the early stages in Spain", says. Similarly **Portela** notes that in our country no information supplier has implemented e-commerce yet.

4.5. Value added and "repackaging"

Providers of electronic information services and intermediaries (information brokers) will make more money by refining, analysing and repackaging information products than by delivering "raw data" in coming years. Give examples for the "refining" of information products which are commercially promising during the coming years .

Yes = **23** Not = **1** May be = **3**

General remarks

Most experts comment about the difficulty of imagining new services and one of them even says "if I would know them perhaps I would not tell anybody and I would try to implement them myself". Nevertheless many of them propose various improvements and evolutions based on current information services.

Some consider the re-elaboration of the information as taking place in the same production phase, and other think on it as a task carried out *downstream* by professionals intermediaries or by other different organisations.

The segments with more opportunities for this type of services seem to be printed media, legislation and information for the business.

Beitia refers to the desintermediation and to the general simplification of online information searching as fundamental reasons for doubting of the future viability of the intermediary services managed by humans: "being realistic we can observe how each time there exists less intermediaries –all types, but especially the autonomous ones, those that make their lives searching or elaborating information for third parties"-.

Benjumeda / Mira comment: "more than re-elaborating information we believe that the usefulness of the intermediaries is to fulfil the existing gaps in the chain between the supplier and the end user, that not necessarily have to be informative products but (in addition) a personalised and customised treatment, speediness of the service, confidentiality, one-stop access point for various sources, etc.".

Lauzière says: "added value in some cases is fundamental, specially if it is taking into account that the user has to cope in many occasions with a great volume of information and do not know how to use it to serve his objectives. In the present 'information revolution', like in most revolutions both industrial, economical, technological, etc., there is a period of explosive evolution during which the information suppliers offer an important amount of products and services originating some confusion and uncertainty. This is why information re-elaboration, re-packaging and refining is necessary specially in some databases (i. e., news databases) in order to facilitate the extraction of the information that the end user requires".

J. À. Borràs, Hípola, Mañà and **Martín Mejías** expect a great future in the SDI services and *push*. On the other hand **Mañà** believes that the offer of the suppliers of standard information services have to be broaden enough in order the users can choose the products that better suit their needs, as if they were specially made (see also **Álvaro**'s note under the Legislation paragraph).

Hípola thinks also that automated systems will carry out more and more tasks:

- Information systems that will act as searching "intermediaries", the same as *shopbots* or shopping robots. Users can take profit of these softwares to locate the product and the price that suit their interests.
- Information bulletins "specially made on demand". Users will benefit from the new filtering systems in order to free themselves of the current information "bombardment" and saturation that impede them to assimilate more information.

Aguillo feels confident about the future of the automatic filtering systems, translation and customisation of the information, although still having human experts to evaluate and supervise the results.

Codina believes that the selection, evaluation, description and/or cataloguing of digital information resources will constitute an important source of income (as it is already for companies like *Dow Jones*, *Encyclopaedia Britannica*, etc.).

The description can be carried out with the strict quality levels typical of libraries and documentation centres, and respecting the international standards (i. e. *FirstSearch*, of *Oclc*).

Finally **Codina** suggests the creation of databases on any topic, but incorporating "metadata based on classification systems and documentary languages (thesauri and classification schemes, both traditional and evolved and adapted to the new digital environment)".

An expert proposes that the scientific information be offered in a less "neutral" or abstracted form, trying that it appears more situated in its context for various possible applications. This would contribute to their spreading and popularisation among the general public.

Rodríguez Seoane believes that professional intermediaries with a polyvalent background are needed to offer high value added services, qualified specialists and consultants to work joint to the direction, involved in the corporate strategy and knowledgeable about the market where their companies act. On the other hand there will continue to exist the professionals that work in basic developments.

In relation to the bigger suppliers he believes, like **Roberto Beitia**, that they will not need intermediaries to sale most part of their information offer.

Examples for the "refining" of information products which are commercially promising during the coming years:

Printed media:

- selective dissemination of information (specific interest profiles),
- press dossiers
- news with links to the cited companies and organisations,
- news with links a encyclopaedias to expand concepts,
- flexible services similar to *MyNews* (this Spanish company is mentioned by various experts),
- analyzed and commented news, with the main data underlined.

Legislation:
As **Mañà** previously said**, Álvaro** proposes the "elaboration of information products as if they were done specially on demand, but with a potential interest for a large user group. This would allow to produce them cheaply, because the clients would share the production costs. In the law field an example could be "Intellectual property", that currently it is a hot topic. In such a report, specific legislation should be included as well as commented jurisprudence (it is not necessary to include the full sentences but the essential parts in relation with the main topic)".

"Exactly the same would be with the bibliography", continues **Álvaro**, "it is not necessary to include all the published articles and books, but only the paragraphs more interesting, that in most cases will not have copyright because they will be citations only. Afterwards one will have to learn to market these products, but if the topics and the targets are well chosen I see here a short or medium term success".

Suggestions of other experts:

- to offer adapted or shortened texts together with the full text of law and regulations (documentary consolidations),
- interpretations,
- law comments and abstracts,
- case law analysis,
- specialised juridical information.

Information for companies:

- international contacts for possible join projects, representations, etc.
- lists of manufacturers of a specific equipment,
- lists of manufacturers of components or parts,
- prices of the competitors in a given sector,
- analysis of competitors (competitive intelligence),
- analysis of manufacturing standards,
- analysis of sales, exports, etc.,
- study of distributors both in Spain and in other countries,
- crossdata of the *Registro Mercantil (Companies Register)*,
- sectoral studies (multi-client or not) national and international (i. e., petrochemical, finance), marking trends, needs and/or emergence of new products, business opportunities, risks analysis, etc.
- portals and webs specialised by topics or areas of activity,
- exploitation of patent documents,
- to take profit of the available statistics and economic conjuncture to carry out market analysis.
- information specially made for managers, delivered simply through the telephone (and fax),
- information from *call centres* (centres specialised in carrying out telephone interviews),
- knowledge management systems for smes, associated to self learning about sales (training about the products offered) and knowledge of market shares,
- information integral management services that can be outsourced by smes.

Other:

- articles condensed and evaluated (or extensive abstracts of them), extracting the main data,
- scientific bibliographies commented by specialists (states of the art),
- events transcription,
- to add value to bibliographic and catalographic records, evaluating the works, compiling or linking revised abstracts and descriptions, establishing relations with other translations of the same document...

- electronic journals designed as information products, being possible to search for the summaries and to acquire only the desired articles.
- public administrations should give out all their information updated and integrated in a unique system to the citizens; these should have to be able to carry out any procedure and, if necessary, to pay the taxes through the network.
- travel agents and offices of electronic buying-selling, real estate, auctions, etc.; the client could receive information about all the available offers with added value up until now not very much usual as, i. e., multimedia presentations of the products, services, places, etc.

Services cited as a model by various experts:

Ei Village
FirstSearch (*Oclc*)
SilverLinker (*SilverPlatter*)
SwetsNet (*Swets*)
Web of *Arthur Andersen*

5. Product Policy

5.1. In 2003 providers of electronic business information will earn 20% of their income with multimedia products (multimedia = including audio or video elements)

	Answers
I agree with this statement	8
I agree with this statement only to a certain extent	12
I do not agree	5

5.2. Reasons for the assessments:

[x] I agree with this statement (8 answers)

The multimedia is an area increasing constantly, as it can be observed in the evolution of the production of optical discs since 1990 (see the *Tfpl* directory). At the beginning most products were addressed to the general public but currently there are many professionals applications as well (**Abadal**).

If information suppliers want to stay in the market they will have to incorporate multimedia in all their products (**Portela**).

For psychological and cultural reasons (we are in a consumer economy) the client tend to value more and more the mean (multimedia) through which he/she receives the information (**Hípola**). Multimedia is attractive for the consumers, independently if they are in a business or not, and it will be a quality and differentiation factor among various products (**Codina**). It has not to forget the life is "multimedia"; it would be absurd to limit ourselves only to the text. After so many centuries of text we are becoming acquainted with the images: information is not well digested easily if not in multimedia form (**Bustelo**).

Multimedia presentations are not, in general, unnecessary "luxurious": users appreciate that the information can be understood rapidly and intuitively (i. e., having graphics or having the possibility of doing them easily over a selected data set) (**Hípola**).

[x] I agree with this statement only to a certain extent (12 answers)

Up until now companies and organisations have preferred simple and austere services that can offer them the same content but at a minimal cost. This has been due to the existing technical limitations. Nevertheless important investments are being carried out in multimedia products; with the thrust of the home sector we are having available at relative low prices new powerful computers with high process capacity for audio, video and 3D; and internet is multiplying its bandwidth. Professional users and suppliers can take advantage of this trend (**Lauzière**).

To offer information in multimedia format will be soon a priority for all the suppliers, but not all of them will be able to convert their products immediately. For some the conversion could take some years. Moreover there are areas much more easy and adequate to be converted than others (**Aguillo**).

The multimedia concept will grow especially in the home market, but more via online (digital TV, cable) than offline (cd-roms, DVDs). Also it can penetrate in the companies but not at the proposed rate for 2003 (**Rodríguez Seoane**). It will depend on how the compression technologies will evolve, adds **Guillem**. The previous starting of the home market is obligatory for the starting of the professional information behind (**Martín Mejías**).

To imagine future multimedia professional products we can take as a guideline the current broadcasting media (radio and TV). Multimedia production is very expensive and this is an important barrier for their success. The economic investment can only be justified in a few cases (**Beitia** and **J. À. Borràs**).

The evolution from the current services to the multimedia ones requires a diversification that at present still have a high commercial risk. Probably we will see some more professional applications in very specific scientific research areas (like the already known in anatomy, chemical stereo-molecules, abnormal noises of mechanical equipment to diagnose failures, etc.), in specialised training applications, and in popularisation and education. Therefore I believe it is not reachable the proposed 20% of income due to multimedia products for the information purely 'professional' in only 4 years time (**Bravo**).

Some experts only foresee immediate viability for some training applications in the business environment, but these should be referred with certain reservations because they would be more specially made applications than products intended for the general public, which basically is the case of our exercise.

It depends on the information products, on the "mix" and on the users to whom they are addressed. For instance, medical information sales can be increased adding audiovisuals, as long as they are useful to improve the comprehension and not being mere unnecessary decoration. In the Network there are good examples of professional multimedia products, that frequently are unknown to most of us, whether because we are stuck to the traditional systems and/or because lack of time to experiment them and to evaluate their effectiveness-friendliness (**Álvaro**, **Jáudenes**, **Majó** and **Rodríguez Rovira**).

[x] I do not agree (5 answers)

A slow down has been produced in multimedia. When started many thought it to be a *boom*, but the developments have partially stopped (**Van den Brule**).

The reasons already have been commented in other sections: lack of maturity both in the offer and in the demand, as well as difficulties in production, lack of a legal framework, etc.

Business people do not demand this type of format yet, which moreover has a "non-serious" image like games and entertainment applications, negative in companies (**Mañà**).

Although it is true that "multimedia sector" in general took off strongly –according to the *European Audio-visual Observatory*--, it has to be taken into account that very often the audio-visual industry figures are included also in the same statistics. Therefore some electronic multimedia figures sometimes are distorted. Also there are optimistic data in the *Annual Conference of Interactive Newspaper* (1996), as well as in some book fairs –but not in the last *Liber* in Barcelona, Sep.-Oct. 1998--. Nevertheless, the documents distributed by the traditional electronic information services can not escape easily of a certain "paper dictatorship". Their production conditions are in most cases modest and the STM information sub-sector, specially focused to journals, do not seems to be leaning to strong investments. The existence of publications like *Víideo-revista de Cirugía* has to be considered very exceptional (**Benito**).

In the mentioned *Feria Internacional del Libro*, *Liber 98*, the fair guide electronic version in cd-rom was abandoned because lack of demand. Organisers claimed "both visitors and exhibitors prefer the printed guide"--. We think that this is a very significantly fact that illustrates the general situation of lack of interest of the traditional publishers to this kind of media that was not attributed any value to help to promote the fair, their exhibitors and their products, in spite of the cd-rom functionality (database, mailing, products samples, etc.) that the usual thick printed version can not offer.

5.3. Examples for trends in the improvement and control of the quality of the electronic information products and services which will play a special role from now to the year 2003.

GENERAL COMMENT

Some experts consider positive the advances in the last years, but many think that they are not enough, in especial if they compare Spain with the rest of the first world.

Guillem and **Van den Brule** indicate that unfortunately quality is not taken seriously in many of its different facets (contents, presentation, searching friendliness, performances, etc.), and it would be necessary to devote more than 50% of the total investment to correctly finishing and polishing the information product. Many publishers and database producers launch negligently their products and databases to the market when they still are incomplete. Afterwards they should not complain because an eventual lack of acceptation.

Benjumeda / Mira, Jáudenes and **Majó** stress the importance of a good selection of the information in the sources, and in their authentication, accuracy and reliability, indexing coherence (a process where too much frequently errors are discovered) and especially in the constant update of databases. If it is not taken in this way some information systems will not be able to go out of a vicious circle because they do not reach the necessary quality and effectiveness thresholds.

Rodríguez Seoane says "Quality indicators will be more focused to the end user, being one of the main ones the answer time for elaborating a report or to offer *just in time* service. Most of them will be services oriented to assure client's fidelity, gaining new markets and managing to differentiate themselves from competitors. The traditional statistical indicators of pertinence, recall, etc., will be less important in the future information industry". Technical indicators will be addressed to control the suppliers (delivery terms, costs, etc.).

POSITIVE ASSESSMENTS

Improvements in the edition and presentation of the services have been observed, which incorporate multimedia and user friendly applications, allowing the use of natural language for searching. This affects also to contents structure and to the way how they are shown to the user. Some systems even can take into account which is the situation of the user and the objective that he pursues doing the search (**J. À. Borràs, Guillem, Hípola** and **Mañà**).

Where the user obtained a tabular record with numerical information, now he obtains an ofimatic spreadsheet that he can integrate in his document, changing or not the formulae, or simply cutting and pasting the data in their own spreadsheet (**J. À. Borràs**). In particular there exists the possibility of download statistic information online and/or in cd-rom (as f. e., *Eurostat*) and then to treat it with statistic calculus packages (**Bravo**).

Easiness and speediness in the online access to the full document (**Hípola** and **Rodríguez Rovira**).

Online after sale customer help (i. e. *Barcelona Multimèdia*). User support and instant problem solving (*help-desks* and *hot-lines* –telephone lines 24/7, available permanently-), webs with *faqs* (*frequent asked questions*) (**Abadal** and **Mañà**).

Online updating of cd-roms (*Encarta*, *Enciclopèdia Catalana*, *Enciclopedia Universal* by *Micronet*, etc.) (**Abadal**).

Progressive implementation of new *push* or SDI services (**J. À. Borràs**).

Customisation, already possible with many professional products. Specially made or searched information with more added value (**J. À. Borràs**, **Cornella** and **Mañà**).

Inrush of universities, research centres, professional associations, and other entities, offering webs with compilations of information sources, statistic data, etc. (**De la Viesca**). Availability of complete online union catalogues (i. e., *Consejo Superior de Investigaciones Científicas* (*Csic*) libraries network; *Ccuc* of the Catalan universities) (**Bravo**).

In Spain, coverage and exhaustiveness of databases have increased gradually. They are greater and more complete (**Aguillo**). Particularly, juridical databases constitute a good quality offer (**Hípola**).

We observe the appearance of much more multilingual information in the official languages of the European Union (**Aguillo**). The multilingual semantic networks are a big challenge of the information services in order to be able to cope with the peculiarities of the different audiences (**Martín Mejías**).

NEGATIVE ASSESSMENTS

Searching precision. Internauts are fed up of the lack of accuracy or even uselessness of the internet searching engines (although it has to be admitted that many people has not learned how to use them properly, **Aguillo** remarks). Systems and/or tools that allow end users to obtain precise results are needed –better browser, online help— (**Bustelo** and **Jáudenes**).

We have not observed too much improvements in the past years in Spain. We continue suffering lack of pertinence in the information searches and, in some cases, we see that the database are not enough updated (**Álvaro**, **Benjumeda / Mira** and **Portela**). A case was told by one of the experts: as a consequence of serious claims about quality that were expressed by an information broker to a Spanish information supplier (which compelled the broker to continuously seek for the errors before delivering the results to the clients) the supplier decided to rescind the contract, instead of making up for the mistakes.

"Regrettably we have not observed many improvements in the information quality control" (**Cornella**).

6. Market Barriers

6.1. What are the three most important barriers for the further development of the markets for electronic information services in Spain?

LACK OF CLEAR AND/OR SUITABLE POLICY OF THE ADMINISTRATIONS
The current market is being developed by the investments and the *know-how* of the big multinational companies around telecommunications, cable, etc. (in all cases foreign operators are present). Spanish smes are being marginalised and the local market will suffer from this situation. It seems like if all R+D and marketing in the global market are left to these initiatives and to the occasional European subsidies.

Governments have carried out cosmetic actions only, just for stay in the fashion, and – except some specific and unconnected projects— there is a complete absence of effective actions to develop a real "information society". Lack of interest of the public administrations to incentive the research and the development of technologies, products and information services (**Aguillo**, **Álvaro**, **J. À. Borràs**, **Portela** and **Rodríguez Seoane**).

Delays in the incorporation of the new technologies in education and training. Pedagogic methods continue ignoring the new technologies and in the teaching centres they to not dedicate enough resources to it. Governments should carry out more awareness campaigns and the effective use of PCs in the schools should be a daily reality and not simply occasional character as up until now (**Abadal**, **Bravo** and **Hogge**)

MARKET
Smes have not infrastructure, aggressiveness and to challenge its competitiveness in order to launch themselves in this market. Current information policies (non-existent and/or ambiguous, with undefined and unclear lines) of the administrations do not help enough. The Spanish bureaucracy penalises harshly to companies: the cost to create and to maintain a business in Spain is a comparative handicap. Capital-risk formulae should be widely available in order to support the initiatives. In general, there is a lack of investments in new information products. Some have ideas but not money, and others the contrary (**Aguillo**, **Álvaro**, **Bustelo**, **Portela** and **Rodríguez Seoane**).

An effective evaluation and auditing should be done of the subsidies granted in this mater. Nowadays there is still too much work to do (**Rodríguez Seoane**).

Both public and private companies being part of this sector, especially distributors, should redefine their role in a realistic way to match the market (**Hogge**).

INFORMATION CULTURE

Most of the responsible people (senior managers) of public administrations, companies and other organisations have a "do-nothing" culture and even unconcern. Although in the best of the cases they try to cover the appearances, frequently they are defeated by the computer era and they pretend to ignore it. Their lack of interest or incompetence are transmitted to all levels, so that many big companies continue without clearly betting for the electronic information. Politicians and top managers still base their management on non orthodox systems, intuition and unstructured information that they obtain following their traditional methods (telephone and personal contacts). Although people is getting more acquainted with computer, specially among the younger generations, the electronic information is not a well recognised topic in the society.

Most part of the national agents (Administration and companies professionals) have the opinion that the strategic value of the information is only to have the organisation's annual report on time, the economic balance sheet and the sales figures, or to have a good client's mailing list. Probably, thanks to internet and to the cultural fashions like “knowledge management”, in the next years this barrier will fade (**Álvaro**, **Beitia**, **Codina**, **García Sicilia**, **Mañà** and **Molinero**).

There are too much inertia in the users as well as a certain techno-phobia that causes that only a low proportion of homes have a PC available –as the statistics show, the first reason to buy a computer of the Spanish families are the children's school studies--. It takes a lot of effort to change the information usage habits, specially among the professionals. Taking into account the scarce inclination to reading and the low and inadequate use of the libraries, we can state that in Spain there is clearly a lack of tradition. In general the systematic and disciplined use of information to properly carry out any task has yet a low level of esteem and value. And using information in electronic form still is worse.

Additionally, the technologic paraphernalia still inherent to electronic information requires an excessive extra training about equipment, software and telecommunications that do not helps to facilitate the habit of using information.

For many companies where the informational culture has not penetrated, to obtain information has little sense because nobody can and/or know how to use it. On the other hand, the reality shows that users are not prepared to pay for the information –something that is direct consequence of not knowing its value--, in a context where there exists many social reticence and confusion (**Abadal**, **Aguillo**, **Benjumeda / Mira**, **J. À. Borràs**, **Cornella**, **Guillem**, **Hípola**, **Jáudenes**, **Majó**, **Mañà**, **Molinero** and **Rodríguez Rovira**).

Little by little, those who believe of themselves being the great gurus of the electronic information because they speak about electronic commerce and marketing systems that allow to know, f. i., which kind of clients do prefer a violet coloured tooth paste, will realise that without a cognitive information infrastructure it has no sense to speak about the strategic value of the information (**Codina**).

LANGUAGE CULTURE

The average Spaniard do not read comfortably any other language than Spanish, and this is a serious problem to participate in the global information society and to use information sources vital for the industry that are available only in English (**García Sicilia**). If to this we add the narrow mind of many database producers –without entering in the political linguistic "wars"--, who do not care about offering their information also in other languages, we find a Spanish "industry" very weak, incapable of exporting their own products. Dreadfully, the linguistic problem, is being fostered by political parties treating it as "safeguard of the national and/or autonomic sovereignty", isolates our specialists and hamper their participation in international fora.

Absence of a global dimension of the Spanish suppliers. Although they offer information products intended for the local arena, they should address, directly or by means of collaboration agreements, to more wide markets (**Martín Mejías**).

LACK OF KNOWLEDGE AND DISPERSION OF THE OFFER

Spanish information sources and their contents are quite unknown. There are not intermediaries or information managers that know the business needs and the external information sources. There is a need for quality "portals" and reference "hosts", with a information well organised (**Abadal**, **Benjumeda / Mira**, **Mañà** and **Martín Mejías**).

QUALITY

The quality of the information content and the presentation of most products existing in the market still have to improve very much. Quite a number of Spanish suppliers are in a vicious circle as they are not capable to have enough sales to self-finance or get profits in order to keep the quality of their products. The user perhaps see clearly how much the information cost, but then he has serious difficulties to evaluate which benefits the acquired information reports to him (**Bustelo**, **Cornella**, **Guillem** and **Martín Mejías**).

INFORMATION SHORTAGE

The amount of information in electronic format still is scarce and in many cases insufficient to substitute paper sources. Products are not adequate to the demand and if so, they are so expensive that are unaffordable by an important market segment (**Bustelo**, **de la Viesca** and **Guillem**).

TELECOMMUNICATIONS

Low quality and reliability of the telecommunications networks. Internet is unpredictable. In general the networks have too much servitude that the average user are unable to overcome or do not want to bear. No doubt, the future will be based on cable permanent connections (**Beitia**, **Benjumeda / Mira**, **J. À. Borràs**, **de la Viesca** and **Majó**).

In Spain the attitude of *Telefónica* has been an important barrier. This company has maintained always a position contrary to liberalizing the telecommunications market. The networks infrastructure is insufficient and "In *Telefónica* time seems not to pass". This very powerful company continues to be a *de facto* monopoly and unfortunately it seems that the present situation will remain as it is some more years because "competitors" have to fight very hard to get a market share (**Álvaro** and **Beitia**).

There is a need for telecommunications infrastructures that allow an adequate implementation of internet and its technologies. Spain suffers limitations of the networks, which are slow and expensive. To have a good connectivity can be a luxurious matter for some smes (**Aguillo**, **J. À. Borràs**, **Cornella**, **de la Viesca**, **García Sicilia**, **Hípola**, **Hogge**, **Jáudenes**, **Majó**, **Molinero**, **Rodríguez Rovira** and **Van den Brule**).

SUNDRY ASPECTS
Banks charge 6% commissions for the electronic commerce (**Beitia**).

Lack of definition in legal matters related to electronic commerce, the intellectual property, etc. (**Jáudenes**).

Vulnerability and weakness of transactions systems, which are not secure enough. Payment systems agile and secure: the users are afraid to send their credit card data though the networks (**Hípola** and **Molinero**).

6.2. What should be done outside the official national information policy to reduce or to eliminate these market barriers (for instance by information providers, brokers, professionals, users and their associations as well as information scientists)?

As it can be expected, some of the proposals (solutions) listed in this section are concepts similar to the explained in the previous one (barriers).

BETTER KNOWLEDGE OF THE OFFER
It would be very useful to have a contents fire like the London *Online Information Meeting* in Spain. As a default we could think on a "virtual fair" in internet. It would make possible to check all the existing information sources before carrying out an information searching. This could be one or more electronic information systems –journals, directories— with an analysis and a description of their offer. They could describe not only information products but also operational experiences of the information society developments –i. e., electronic signature, training and didactic methods, "civic electronic card" for all the services and payments...--. At this last respect it exists the initiative *European survey of the information society* (*Esis*), of the *Ispo* (*Information Society Project Office*) programme of the *CE* (*http://www.ispo.cec.be/esis*), that lists data and ongoing projects. The Spanish contact is *Sema Group*.

Professional associations should track continuously internet to select the most relevant information for their respective sector (**Abadal**, **Beitia**, **Benjumeda / Mira** and **Bravo**).

PROMOTION
Awareness actions (conferences, open-days, seminars, workshops, in-situ demonstrations, etc.). To offer free of charge product and service samples to facilitate

their knowledge. To organise frequent and continued promotional actions, trying to penetrate in companies (**Mañà** and **Portela**).

Through professional associations, chambers of commerce, trade unions and employer's organisations, to promote debates and seminars about the strategies to follow in relation to the information, their advantages and the costs of not applying it (**Bravo**).

To spread comparative statistics about the existing backwardness in our country and to analyse the reasons of this in public debates and reports that should have as much diffusion as possible (**Bravo**).

Current professionals should do their own marketing taking advantage of all the possible occasions and events that be held around them or at their influence circles to explain this profession and, at the same time, the benefits of using information. The recent implementation of official information-documentation studies in the Spanish universities, both low and high degrees, can help to make this profession more known (less "invisible") to the society, although currently this career has to compete in the labour market with many other new studies and professions. Even though this profession was more known as a degree, it would continue being very difficult for normal people to understand which functions does carry out an information specialist (*"documentalista"* in Spanish). This is a very important handicap both for the professionals and for the industry, offer and demand included (**Benjumeda / Mira**).

Independently of the autonomic and local branches, in Spain it should exist clear and well defined lines in the professional associations that would help to join the efforts and manage the associations more professionally (most are run in a bona fide basis and their management sometimes is not very efficient. A trade association to lobby and to protect the rights of the professional members in front of the public administrations should be considered (*colegio*). The economic and human power of a strong association would allow to carry out awareness campaign in the mass media (**Rodríguez Seoane**).

It has to be recognised that the associations "nation wide" had failed along the history because of the excessive Madrid centralism. This paved the way to the creation of local associations that carries out activities nearer to their members. Currently *Fesabid (Spanish Federation of Archivistics, Librarianship and Documentation Societies)* try to recover the estate dimension and to establish, at less, some coordination among the member associations.

MORE OFFER AND BETTER QUALITY

To increase the offer of electronic information in Spanish both by private and public sectors, would cause a price reduction. Public administration bodies should be compelled to make generally available the information that is public (**Aguillo**, **de la Viesca**, **Hípola**, **Rodríguez Rovira** and **Rodríguez Seoane**).

Real information needs of the smes should be studied, i. e., stimulating the elaboration of suitable and competitive products (good quality ones –with much more added value, underline various interviewed experts— and at reasonable / affordable costs) so that they become essential for the users. It has to be taken into account that, in companies and institutions, those who use information not are abstract entities but real people (**Aguillo, Álvaro, Bustelo, Cornella, Portela** and **Van den Brule**).

INFORMATION SYSTEMS

Improvement of information searching systems (**De la Viesca**).

Given the almost absolute primacy of the English language both as working language and as the global transmission platform of science and technology, we had to develop cheap and reliable translation systems. Current ones can not be considered as of "professional quality" because very often they produce results practically useless (**García Sicilia**).

TRAINING

To advance further in the goal of training people in order they become "literate in information", i. e., persons aware that without cognitive information all the marketing systems have little value –although the inverse is also true--. We should try that people get used to work producing more qualitative results with less effort. Certainly, this apparent "miracle" can happen if they learn to exploit (selecting, interpreting, processing) the adequate information sources for each occasion (**Codina**).

Training at all the levels "intelligent information consumers", specially the managerial levels, making them to understand the advantages of using information. But the teaching should begin already at the primary school in order to create the habit, both with printed media (school libraries well provided and being an integral part of the educational system) and with internet in all the classrooms (**Aguillo**, **Beitia**, **Cornella**, **García Sicilia**, **Guillem** and **Rodríguez Rovira**).

The career profile of the information professionals should change. They should be more open to the electronic information world, to be ready to work as a business information specialists (both topics and technologies) and less generic. The new rol of the documentalists has been already analysed in many fora and publications, but it should be underlined its rol as "facilitator" (at less in the next future years in which the new generations of people better trained and more aware of the information importance will have not reached yet the labour market): somebody that give advice and teach to others how to look for the information. This process, so vital and sensitive can not be depending of the skill and the availability of one or two persons (in general). An important terminological aspect: the name "documentalist" (widely used in Spain) and its meaning is not suitable for the information society, and it is not specifically adequate for the business (**Álvaro**, **Beitia**, **Martín Mejías** and **Rodríguez Seoane**).

MARKETING

Marketing is, perhaps, the aspect more neglected by the Spanish information suppliers. Their sales force should be very professional and to know in depth the information needs of their clients, offering the products or databases that match them (**Martín Mejías**).

There should be central hosts that gather the offer of many suppliers. Spanish databases continue to be too much scattered (**Martín Mejías**).

The finance sector should help to implement easy to use electronic payment systems for telematic information products and services. Currently it is too complicate, and almost discouraging for many potential users who occasionally might wish to search in some information services (**Álvaro** e **Hípola**).

To carry out a good marketing policy and to evolve to other markets. We almost do not have external commerce, we do not export. Because of fighting spirit, lack of knowledge, languages or export culture, this country is too much closed in itself. Even we are loosing the Spanish language information market (**Rodríguez Seoane** and **Van den Brule**).

We should carry out some pressure measures before the Administration and telecommunications companies (user protests because of the lack of quality or tariffs abuses) and to promote the real liberalisation and plurality of market options. To demand flat rates for accessing the networks (**García Sicilia**, **Hípola** and **Rodríguez Rovira**).

The current intermediaries (*brokers*), smes and one-person companies should consider not only becoming associate (as it happens sometimes), but also to merge (**Rodríguez Seoane**).

7. Information Policy

7.1. Please give examples about what should be done by the government (the "national information policy") to support the development of the markets for electronic information services in Spain. Please give some explanations for your recommendations.

GENERAL COMMENTS
Various interviewed experts express as their first and more important recommendation that there should be a national information policy, globalizing all the actions, and not patches for the different activities. This regulation should provide a framework adequate for the information market development that take into account training, infrastructures, tariffs policies, standardisation, legal aspects, etc.
When we say "globalizing" we underline also the current lack of global vision of the Spanish databases suppliers, specially in the scientific-technical area, which are permanently condemned to live out of the meagre subsidies received from the Administration.

We should carry out a positive information policy to plan all the activities, with a percentage of information experts (or, at less, advanced information users with real knowledge) members of the Government and the Parliament. Unfortunately we find too much politicians that are themselves compelled to speak unexpectedly about the "information society" because “it is a fashionable topic”, without any sight of the potential economic and social value of the electronic information.

Some timid steps have been done by the central, autonomic and local governments but they are clearly short in scope, because of their scarce budget and decision power. They give the impression of being more propagandistic (very counter-productive because their lack of credibility among the citizens, who receive them sceptically) than real actions aimed at transforming the society. Nevertheless it has to be admitted that the fact that something policy has begun is important. We have to wait some months to see the results and to evaluate their practical impact, but we should not to forget that most of the countries have also begun some time ago and have implemented more deep reforms. A real danger exists that our distance to them perhaps do not decrease.

One possibility to be considered is the integration of all the domains related to the information sector and to elaborate a strategic participating and activating plan, assuring their proper implementation and monitoring, introducing the necessary adaptations that the experience and the eventual changes that are taking place continuously might suggest.

Anyway, some experts consider that not all the actions should be addressed especially to the information in electronic format because it is now the one more attractive in the media with the internet wave. Spain should try to equal the same level of other more advanced European countries in basic information and documentation infrastructures, i. e.: school libraries rate, public, university, documentation centres and archives, and ratios of volumes, reading posts, space, etc., by citizen or by reader.

We still suffer the consequences of the unfortunate phrase coined under past regimes "that invents be made by them (the foreign countries)", which was a reflection of the prevailing practical policies not investing in research and paying royalties (if not copying). That policy allowed the Spanish industrial development from the fifties to the seventies, until our country passed the new patents law *Ley of Patentes* [*Ley 11/86, BOE 26.03.86*], that imposed more respect for the foreign patents. Many of our politicians are blind to the reality of inventions begin to be incepted in library schools and encouraging the culture interests, not precisely the football one, that incredibly is flooding more than ever the television channels, both public and private. And with these statements we do not want to attack any particular type of persons, it would be too simple: politicians are just mirroring the whole of our society--.

Information is also culture (a very strategic one) and our society should take all kind of measures to increase the reading ratios of books, newspapers and journals, as well as to increase the interest for using referential and retrospective information sources in order to solve problems to citizens and professionals. Any other policy that do not solve these basic infrastructure problems, would be to throw away the tax payers money and to continue staying in the present situation of technologic dependence and backwardness in which we are.

The occasional discoveries and successes do not should be attributed to the topical Spanish "geniality" and to the praise the supposed Spanish improvisation skills, ridiculing sometimes the systematic and methodologically done work, and specially well informed of other countries. The wasting of our administrations in information (for not using it and for not exploiting it) is difficult to be evaluated but probably have an effect on all the sectors of our society and equals to multibillion pesetas.

LEGAL FRAMEWORK

To regulate clearly the legal aspects, specially the one related to intellectual property, as well as the ones that allow to integrate the responsibilities disperse in the different administration bodies, to regulate the planning, to evaluate the results of the current regulations over the transparency of the Administration and protection of the intimacy in order to further improve them and to correct distorted functions (**Bravo**).

Legislation should not be so strict that restrains and stops the productions, nor prohibits the libraries to continue carrying out a function equivalent to the one that they are doing with the printed materials. Perhaps its severity, intended to protect the individuals intimacy, should be decreased, otherwise it could lead to absurd extreme situations making unfeasible some information projects. To create a legislative regulation about the validity of electronic documents and their handling, both in public and private environments. To regulate the use of *EDI –electronic data interchange* for transactions-- and the electronic commerce (**Aguillo, J. À. Borràs, Jáudenes** and **Van den Brule**).

SUBSIDIES

- **Research and development**

R+D into the companies have to be augmented and improved progressively, because at present most of R+D activity is done at the university. We should redefine the investments in both environments, a matter that it is not easy. The subsidies given by the administrations should be addressed to the development of electronic products which use increase clearly the quality of the of all manufacturing and services processes (**Guillem**, **Molinero**, **Rodríguez Rovira** and **Rodríguez Seoane**).

The joint projects oriented to the global market have to reach more to the smes and to adapt to their needs, infrastructure and investment problems. The Government should complement the European subsidies policy in order that the Spanish companies do not arrive late to the information society opportunities (**Rodríguez Seoane**).

To give tax advantages by the investments, purchase and applications of new technologies and the use of the information. An advantageous fiscal treatment would cause an increase of the informative and cultural level of the country (**Aguillo**, **Bustelo**, **Cornella**, **Hípola** and **Portela**).

More important investments in optical technology (**Van den Brule**).

- **Training**

The Administration should do a budgeting effort in education and in research, with special intensity in the innovation and in the technological transfer. Besides, it should carry out educational actions of all types: to subsidise education centres, libraries and other civic centres for incorporating information and communication technologies (ICTs) –i. e., computers and internet—. The possibilities of the technologies have to be profited to improve the didactic procedures (using ICTs to teach the different matters) and, simultaneously, to train people on ICTs as necessary tools for any other career or job (**Abadal**, **Aguillo**, **Beitia**, **Bravo**, **de la Viesca**, **Jáudenes**, **Martín Mejías**, and **Rodríguez Rovira**).

To invest in information training for the business area. Currently the *Forcem* (*Foundation for the Continuous Training*, institution closely related to the *Ministry of Labour and Social Affairs*, employer's organisations and trade unions) and European projects only finance mainly technology investments, and very little contents projects. We should assure their continuity but paying more attention to the information needs (**Rodríguez Seoane**).

The regulated or official education system should adapt to the new market environments leaving aside old schemes initially thought almost exclusively for public and university libraries, which, moreover, constitute a nearly stagnated labour market (**Rodríguez Seoane**).

MARKET

The trend should be to continue giving support to liberalization and safeguarding the free competition without favouring any type of suppliers. The best situation for a good market development is a competitive one. The Government should undertake the proper measures to improve the networks and to lower telecommunication prices for to be available to everybody: companies, schools and homes. Networks should be considered as a public service of strategic interest and each citizen should have an e-mail address, equally as a passport or national identity card (DNI).

To create or to promote the implementation of infrastructures of all types (networks, information systems, electronic commerce...) so that the companies producing contents find them available and ready to use for marketing their information products. To many of them, that is the unique way of being able to sell information products economically viable.

To promote contents industries in general and autochthonous in particular. Companies that recover the cultural heritage and circulate the bibliographical and document resources in all the environments (scientific, technical, humanistic). To avoid the "intrusion" of foreign companies in the contents offer.

To aid to develop hosts and big referencing portals, specialised in economic sectors (**Abadal**, **Aguillo**, **Beitia**, **J. À. Borràs**, **Bustelo**, **Codina**, **de la Viesca**, **Hípola**, **Jáudenes**, **Mañà**, **Martín Mejías**, **Molinero**, **Rodríguez Rovira** and **Van den Brule**).

PROMOTION

To foster the use of the information and the new forms of correctly implement the different tasks using the adequate information through campaigns in the public television stations and other mass media. The Spanish society should overcome the atavistic and socio-cultural barriers that impede to evolve and to surmount its informative and technological "illiteracy" (**J. À. Borràs**, **Guillem** and **Molinero**).

PUBLIC INFORMATION SYSTEMS

To preach with the example: to put into practice the "revolution" of passing from the public office window to the web. To encourage a complete information transparency, basing the information policy to the citizen on the electronic systems. In that way he would be "compelled" to use them. The citizen should be able to find all the needed information and to carry out the corresponding procedures in internet. The own administrations should be an example and a motor engine for the rest of the country implementing management systems (i. e. *EDI* between their agencies and the companies), and information systems both administrative and cognitive (facilitating the access to all the information that they produce through user friendly interfaces) and heavily using external electronic sources. The joint and unified action of all the administrations would contribute to the establishment of common standards (**Beitia, Bustelo, García Sicilia, Guillem, Hípola, Jáudenes, Majó** and **Mañà**).

Nevertheless the administrations should care about not overlapping their actions with those of the private sector, respecting the principle of subsidiarity: "what can be done by private business should not be done by the public sector". In cases of duplication it is likely that the administration do it worse, a market opportunity be lost and altogether, taking into account the cost of the civil servants involved, the product be more expensive for the country (**Beitia, Bustelo, García Sicilia, Guillem, Hípola, Majó** and **Mañà**).

The position of the Public Administration respect to the distribution of their products is confuse, uncoordinated and stingy --some experts address criticisms to the ministries of *Industry* and of *Fomento*, and also, but to a lesser extent, to the *Ministry for the Public Administrations*--. The tariffs topic seems to be a tabu one, although frequently various reasons justify its difficulty:

- lack of a general policy that guide the actions;
- ignorance of the rol to be played by the Administration in the provision of information. The civil servant or the politician in charge of a service is, not more not less, a fruit of the society in which we have lived up until now --with a low information culture-- and do not have any guideline that guide him (he do not publish "his" information, or he "sales" it at unrealistic prices, etc.);
- when offering the information to the public, the corresponding service acquires a compromise over the quality (both on contents and formal) and over their necessary continuous updating. I. e., he sees himself "compelled" to establish a quality control that causes him probably to do much more work than it was supposed to do when he got the post. Sometimes, an intermediate solution, quite frequent, is to give the information for free, but without any compromises about the quality;
- In the opinion of various experts asked about this topic, some autonomic administrations are responding better that the central one.

Administrations should effectively to hand over their information, which has been costly acquired and that it is absolutely infra-used, to private companies (by means of public calls or auctions) in order it is exploited, re-elaborated (if it is necessary) and in that way they are able to obtain information products and services to be sold in the market (**Aguillo, Cornella** and **Martín Mejías**).

7.2. Examples about what should be done by the *European Commission* to support the development of the markets for electronic information services in the European Union.

GENERAL POLICY AND INFRASTRUCTURES

The *EC* should exert its main function harmonising the situation in the Member States, reducing their differences by mean of the opportune directives, recommendations and standard proposals agreed by consensus (i. e., on electronic commerce). This means that, f. i., in the Spanish case, the *EC* should carry out all kind of actions in cooperation with the Spanish Government –obviously, avoiding the "intrusion" and respecting the subsidiarity principle— in order to create infrastructures (libraries, documentation centres, archives), to plan information distribution systems, to eliminate as much as possible both cognitive (classification systems easy to use, searching systems based on natural language, etc.) and economic barriers (public funds support to incentive both the demand and the offer).

The *EC* should avoid the concentrations of power that can limit the free competition both in information technologies and in contents (see section SUBSIDIES POLICY).

Similarly more support should be given to pedagogic innovation and to continued training. With the European plans Spain would obtain a two fold benefit: direct improvement, and emulation of the more advanced countries. The *EC* should study the Scandinavian countries model of information society development, and to try it to be applied to other regions.

Also the Spanish telecommunications sector has a good example to follow in some EU countries, especially the United Kingdom where liberalization began many years ago. *EC* has driven and managed to extend the British example to the rest of countries, but in Spain *Telefónica* still have excessive de facto monopolistic prerogatives and privileges.

Europe is conscious of its delay regarding the USA in the use of the new information technologies, as well as in the bandwidth (capacity) of the telecommunications networks. It should be priority for the *EC* the installation of high capacity backbones. It is true that some policy have made in that sense and that some practical results have been achieved, but they are not enough. It is regrettable that the Europeans see our progress being hindered because these technical difficulties, that are added and produce a bad feedback with the lack of habit and culture, hampering our advance in the information society. The possibilities of the networks should go well in advance of the needs of the users in order to favour the development of new products.

To elaborate and distribute publicly reports about the development of the electronic information in the Member States –usage statistics, type of products by interest areas, etc.— and analysis of strong and weak aspects in each country (**Aguillo**, **Álvaro**, **Bravo**, **Codina**, **Cornella**, **Bustelo**, **Guillem**, **Hípola**, **Mañà** and **Rodríguez Rovira**).

TO REDUCE THE INTERNAL BUREAUCRACY

The *European Commission* has converted itself in a bureaucratic complex that in occasions slow down its activity or even menaces to collapse it. We could say that the *EC* has overcome a first "young" phase during which the civil servants of the different countries integrating the EU have meet in Brussels or Luxemburg with the idea not very fair of mainly looking advantages for their respective home countries. It has to be admitted that some "reigns" and duplications were quite real. With the real augment of the European cohesion, lack of confidence and susceptibilities seems as if are disappearing. Also the cleaning operation obtained after the scandals unveiled by the *European Parliament* in March of 1999, there is the hope that the European government will increase its effectiveness and transparency in the forthcoming months. Precisely it should take advantage of the information technologies to reduce the administrative running costs.

In the past 4 years the *EC* has improved very much in the control and practical exploitation of the results of the subsidised projects in the markets, but it still should continue advancing in quality control and in cost auditing.
The *EC* should create and to provide funds for private project management offices, specialised in specific topics.

SUBSIDIES POLICY
Although in recent years the *EC* is putting special care in taking into account smes in the public calls, the trend should be stressed. To give money to smes is a decision much more risky, because there have been many cases of project non-fulfilment, but on the other hand the *EC* should favour more to smes and less to big and consolidated publishing groups that do not need so much the subsidies. There are many small companies with new ideas and innovating contents but they see almost impossible to overcome the complex bureaucratic procedures to submit proposals to the European calls. To introduce themselves in the system results economically not viable, both because of the needed amount of time and the initial investments for travelling, consulting, etc. A demonstration of this drawback is the small number of subsidies obtained by smes.

As a general rule, the *EC* should not give subsidies for commercially viable projects to public administrations nor to multinational companies.

The formula followed by the *EC* in recent years of giving subsidies only to projects carried out jointly by various countries of the EU has yielded very good results in spite of their servitude (more expensive coordination, travelling time and costs, expanded execution time because of language difficulties and translations, almost unavoidable leadership and preponderance of wealthy countries over poorer ones, etc.), as is has contributed enormously to the mutual knowledge and to the homogeneity of a continent so diverse (**Bravo**, **Guillem**, **Rodríguez Rovira** and **Van den Brule**).

INFORMATIVE CONTENTS
Currently the *EC* can not to pretend already to win the technological race to the North Americans and should promote action lines like *Info2000* for encouraging the production and sale of contents, as well as efficient translation systems in order to alleviate its great problem: the linguistic diversity that makes difficult the economic viability of any information product, being the market so fragmented. The linguistic problem is an undeniable reality, a heritage of the past and the only thing that we can and should do –applying pure democratic rules and equal human rights— is to look for solutions to it, favouring the access both to the information expressed in "minority" languages and the access to the world information of the inhabitants in the zones where those languages are spoken. This implies as well to give support to the development of products with non-English contents. We have to foment and to subsidise the development of automatic translation tools, and multilingual products.

Subsidies for the construction of "one stop windows" and "portals" for searching information about the community. To foster the accessibility of the national public administration information, creating a common European integrated system where it was easy to see the absences or omissions of the different States.

The audio-visual industry should be an example to follow in Europe. information providers should receive subsidies to the production and to the distribution (**Abadal, Aguillo, Beitia, Bustelo, Codina, Cornella, Jáudenes, Hípola, Mañà, Portela** and **Rodríguez Seoane**).

PROMOTION
Diffusion and awareness actions, organising workshops, conferences and seminars, etc. The information culture should be improved in general but with special emphasis in information systems for the smes (**Bravo, Mañà** and **Rodríguez Rovira**).

8. Other Trends
Describe other important trends for the development of the markets for electronic information services from now to the year 2003.

The key element will continue to be the information smes (smes producing and selling information), communication and knowledge, because they are able to be dynamical and flexible to win the challenge to settle themselves for a rapid offer of new information products that at any time can be demanded by the market.

In Spain there very much task to be done in the public administration area and in relation to the democratic access of the citizens to the information (archives, defence, public health...). The knowledge management and team support, development of corporate image and products should be the first step. The organisations "that are able to learn continuously" (*learning organisations*) will be responsible for the development of the more important new trends (**Rodríguez Seoane**).

Public administrations will augment the quality of life of the citizens through the information. This trend should increase and be able that citizens can access all the information about themselves that they need at any time so that they have the capacity to take well informed decisions. Examples: to know the situation and the contents of the own administrative record, data of the history archive of a city, to carry out electronic procedures, etc. (**Codina**).

We see things to be done, technologies penetrating little by little..., but what are difficult to see are clear trends about where there will be business opportunities in this sector (**Benjumeda / Mira**).

Telecommunications and the electronic information will allow teleworking, disseminating people and resources. There will be working teams separated by long distances.

There will be a great advertising increase in internet, and at the same time, a dangerous audience segmentation according to personal preferences.

The knowledge management will be an important hit.

We will have high speed access to multimedia product via cable and internet.

We will see more and more the introduction of intelligent agents with capacity to be customised and automated to recover a very selective information (**Aguillo**).

The markets, the information one included, will continue their globalisation process and North America will flood Europe with their products.

Little by little they will appear new information needs that will generate new business opportunities.

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ASEDIE
ASOCIACIÓN MULTISECTORIAL DE LA INFORMACIÓN

INFORMACIÓN ELECTRÓNICA 1998-2003

PANEL DE EXPERTOS EN SERVICIOS DE INFORMACIÓN ELECTRÓNICA
España

Entrevistas realizadas en el marco del informe *MSStudy II* --en 16 países europeos--, con el apoyo de la *Comisión Europea, la Asociación Multisectorial de la Información* (*Asedie*) y el *Institut d'Estadística de Catalunya.*

Por favor, devuelva este cuestionario cumplimentado a:

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Le rogamos responda a las preguntas que siguen.
Por favor añada análisis y consideraciones propias y adjunte en hojas aparte artículos, escritos o ponencias que considere adecuados para nuestro estudio.

1. Servicios de información electrónica para las empresas* y para consumo**

1.1. En qué proporción cree que estarán los mercados de información electrónica profesional o para empresas (información científica, técnica, médica, comercial, económica, legal, financiera, prensa, noticias, etc.) en relación con la información para el mercado de consumo en España en el año 2003 (en volumen de ventas):

	1997	**2003**
% sobre el total del mercado:	60%	____

* **Información electrónica para las empresas**
Servicios de información online y offline (cd-rom, etc.) usados principalmente con propósitos profesionales en el lugar de trabajo (p. ej.: en una empresa, un instituto de investigación o un organismo de la administración). Ejemplos: *Dialog*, *STN*, *BOE*, *Informa*, *MyNews*, *Cindoc*, *Dicodi*, etc.

** **Información para el consumidor (gran público)**
Servicios de información online y offline (cd-rom, etc.) usados principalmente por individuos para fines privados en sus hogares. Ejemplos: *CompuServe*, *Servicom*, *Sarenet*, diarios, enciclopedias en cd-rom, cursos, obras con finalidad educativa, etc. Se excluyen los juegos y los CDs solamente musicales, películas y otras obras de ficción o finalidad de ocio.

1.2. Por favor, indique las razones de su previsión:

1.3. Indique si está o no de acuerdo con esta frase:
"Los actuales proveedores de información para las empresas obtendrían más beneficios si a corto plazo ofrecieran adicionalmente servicios para los consumidores"

[ ] Estoy de acuerdo
[ ] Estoy de acuerdo hasta cierto punto
[ ] No estoy de acuerdo

1.4. Por favor, indique las razones de su opinión:

2. Desarrollo de los mercados de información electrónica en España

2.1. Teniendo en cuenta que el crecimiento medio anual del mercado de **información electrónica profesional** en España entre 1995 y 1997 se ha estimado en un 8% anual, ¿cuál cree que puede ser el crecimiento medio anual entre 1998 y 2003?

Años	Crecimiento medio anual en %
1998 – 2003	________________

2.2. Por favor explique los factores que pueden influir positiva o negativamente en esta cifra.

3. Segmentación de los mercados de información electrónica en España

3.1. ¿En qué proporción cree que evolucionarán los diferentes medios o canales de distribución en España en % del total?

	Cuota de mercado en %	
	1997*	**2003**
Online en tiempo real (noticias, inf. financiera)	63%	____
Online retrospectivo	20%	____
Offline (cd-roms, etc.)	17%	____

* Estimaciones del *Institut d'Estadística de Catalunya*

3.2. Por favor, justifique las cifras señaladas para 2003.

3.3. Indique con una cruz el desarrollo que cree que se producirá en el segmento "Online retrospectivo" entre 1998 y 2003, tanto en redes como en contenidos, (en términos de crecimiento medio **anual** en %)

	Más del 20%	15-20%	8-15%	0-8%	Declinará
Redes					
Internet					
Iberpac X.25					
InfoVía					
Retevisión					
Cable					
Otras redes*					
Contenidos					
Información sobre crédito					
Noticias, prensa					
Otra información para negocios					
Información legal					
Información científica, técnica, médica, patentes					
Otras materias*					

* Por favor, especifíquelas

3.4 Por favor, explique algunas razones en las que basa su opinión, tanto para las redes como los contenidos

Redes

Contenidos

3.4. Indique con una cruz el desarrollo que cree que se producirá en el segmento "Offline" entre 1998 y 2003 (en términos de crecimiento medio **anual** en %)

Soporte	**Más del 20%**	**15-20%**	**8-15%**	**0-8%**	**Declinará**
Cd-rom					
Disquete					
DVD-rom					
Otros formatos*: ____________ ____________ ____________ ____________					

* Por favor, especifíquelos.

3.6. Por favor, indique algunas razones en las que basa su opinión:

4. Nuevas áreas de negocio o de actividad económica en información electrónica

4.1. Publicidad electrónica

¿Cree que como promedio los proveedores de servicios de información electrónica (tanto online como offline) podrán obtener más del **20%** de sus ingresos totales gracias a la publicidad electrónica en el año 2003?

[ ] Sí, estoy de acuerdo.
[ ] Estoy de acuerdo hasta cierto punto.
[ ] No estoy de acuerdo.

4.2. Por favor, explique el porque de su opinión:

4.3. Comercio electrónico

¿Cree que como promedio los proveedores de servicios de información electrónica (tanto online como offline) podrán obtener más del **5%** de sus ingresos totales gracias a realizar transacciones electrónicas (vender ellos directamente o facilitar las ventas de otros) en el año 2003?

[ ] Sí, estoy de acuerdo.
[ ] Estoy de acuerdo hasta cierto punto.
[ ] No estoy de acuerdo.

4.4. Por favor, explique el porqué de su opinión:

4.5. Valor añadido y "reempaquetado"

¿Cree que en líneas generales los proveedores y los intermediarios (*information brokers*) de servicios de información electrónica podrán aumentar sus ingresos totales re-elaborando, refinando o reempaquetando información en los próximos años (en vez de ofrecer resultados o datos sólo en "bruto")?

Sí [ ]   No [ ]   Quizá [ ]

Por favor ponga 3 ejemplos de re-elaboración de información que cree que pueden ser rentables comercialmente en los próximos años:

Primer ejemplo (con explicación):

Segundo ejemplo (con explicación):

Tercer ejemplo (con explicación):

5. Política de productos

5.1. ¿Cree que como promedio los proveedores de servicios de información electrónica profesional (tanto online como offline) podrán obtener más del **20%** de sus ingresos totales gracias a la venta de productos multimedia (multimedia = incluyendo partes de audio o vídeo) en el año 2003?

[ ] Sí, estoy de acuerdo.
[ ] Estoy de acuerdo hasta cierto punto.
[ ] No estoy de acuerdo.

5.2. Por favor, indique algunas razones en las que basa su opinión:

5.3. Por favor, ¿puede dar 3 ejemplos de tendencias que haya observado en la mejora del control de calidad de los productos y servicios de información electrónica que cree que tendrán un papel determinante en los próximos 5 años?
(exactitud de la información, actualización, precisión de la búsqueda...)

Primer ejemplo (con explicación):

Segundo ejemplo (con explicación):

Tercer ejemplo (con explicación):

6. Barreras al desarrollo del mercado

6.1 ¿Cuáles son los 3 impedimentos más importantes para que el mercado de la información electrónica se desarrolle en España?

Primera barrera (con explicación):

Segunda barrera (con explicación):

Tercera barrera (con explicación):

6.2. Aparte de la política de información oficial nacional, ¿qué se podría hacer para eliminar esas barreras (por parte de los proveedores, intermediarios, usuarios y sus asociaciones, así como por los documentalistas)?

Primera propuesta (con explicación):

Segunda propuesta (con explicación):

Tercera propuesta (con explicación):

7. Política de información

7.1. Por favor, ponga 3 ejemplos de lo que debería hacer el Gobierno (en su política nacional de información) para apoyar el desarrollo de los mercados de información electrónica en España. Por favor provea explicación a sus recomendaciones.

Primera recomendación (con explicación):

Segunda recomendación (con explicación):

Tercera recomendación (con explicación):

7.2. Por favor, indique 3 ejemplos de lo que debería hacer la *Comisión Europea* para apoyar el desarrollo de los mercados de información electrónica en la Unión Europea. Por favor provea explicación a sus recomendaciones.

Primer ejemplo (con explicación):

Segundo ejemplo (con explicación):

Tercer ejemplo (con explicación):

8. Otras tendencias

Por favor, describa otras tendencias que crea importantes en el desarrollo de los mercados para información electrónica desde ahora hasta el año 2003.
Razone por qué.

Muchas gracias por su cooperación

Por favor, devuelva este cuestionario cumplimentado a:

Tomàs Baiget
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Institut d'Estadística de Catalunya
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Generalitat de Catalunya
Institut d'Estadística de Catalunya

INFORMACIÓ ELECTRÒNICA 1998-2003

PANEL D'EXPERTS EN SERVEIS D'INFORMACIÓ ELECTRÒNICA
Espanya

Entrevistes realitzades per l'*Institut d'Estadística de Catalunya* en el marc de l'informe *MSStudy II* --que inclou 16 països europeus--, amb el suport de la *Comissió Europea.*

Si us plau, retorneu aquest qüestionari omplert a:

Subdirecció d'Assistència Tècnica Estadística
Institut d'Estadística de Catalunya
Via Laietana, 58
08003 Barcelona

Tel.: 934 120 088; fax: 934 123 145
baiget@idescat.es

NOTA PRÈVIA
Sobre la publicació dels resultats
Si us plau indiqueu si els vostres comentaris, opinions i suggeriments aportats a aquest qüestionari poden ser:
[ ] Publicats mencionant el vostre nom
[ ] Publicats anònimament o en forma agregada
[ ] Publicats mencionant el vostre nom tots, excepte els referits als apartats:
n^{os} ______________________

Us preguem que respongueu a les preguntes que segueixen.
Si us plau afegiu anàlisis i consideracions pròpies i adjunteu en fulls apart articles, escrits o ponències que considereu adequats per al nostre estudi.

1. Serveis d'informació electrònica per a les empreses* i per al consum**

1.1. En quina proporció creieu que estaran els mercats d'informació electrònica professional o per a empreses (informació científica, tècnica, mèdica, comercial, econòmica, legal, financera, premsa, notícies, etc.) en relació amb la informació per al mercat de consum a Espanya en l'any 2003 (en volum de vendes):

	1997	2003
% sobre el total del mercat:	60%	____

* **Informació electrònica per a les empreses**
Serveis d'informació online i offline (cd-rom, etc.) usats principalment amb propòsits professionals en el lloc de treball (p. ex.: en una empresa, un institut de recerca o un organisme de l'administració). Exemples: Dialog, STN, BOE, Informa, MyNews, Cindoc, Dicodi, etc.

** **Informació per a el consumidor (gran públic)**
Serveis d'informació online i offline (cd-rom, etc.) usats principalment per individus per a fins privats en les seves llars. Exemples: *CompuServe*, *Servicom*, *Sarenet*, diàris, enciclopèdies en cd-rom, cursos, obres amb finalitat educativa, etc. S'exclouen els jocs i els CDs solament musicals, pel·lícules i altres obres de ficció o finalitat d'oci.

1.2. Si us plau, indiqueu les raons de la vostra previsió:

1.3. Indiqueu si esteu d'acord amb aquesta frase:
"Els actuals proveïdors d'informació per a les empreses obtindrien més beneficis si a curt termini oferissin addicionalment serveis per als consumidors".

[ ] Hi estic d'acord
[ ] Hi estic d'acord fins a cert punt
[ ] No hi estic d'acord

1.4. Si us plau, indiqueu les raons de la vostra opinió:

2. Desenvolupament dels mercats d'informació electrònica a Espanya

2.1. Tenint en compte que el creixement mitjà anual del mercat d'**informació electrònica professional** a Espanya entre 1995 i 1997 s'ha estimat en un 8% anual, quin creieu que pot ser el creixement mitjà anual entre 1998 i 2003?

Anys	Creixement mitjà anual en %
1998 - 2003	________________

2.2. Si us plau expliqueu els factors que poden influir positivament o negativa en aquesta xifra.

3. Segmentació dels mercats d'informació electrònica a Espanya

3.1. En quina proporció creieu que evolucionaran els diferents medis o canals de distribució a Espanya en % del total?

	Quota de mercat en %	
	1997*	**2003**
Online en temps real (notícies, inf. financera)	63%	____
Online retrospectiu	20%	____
Offline (cd-roms, etc.)	17%	____

* Estimacions de l'*Institut d'Estadística de Catalunya*

3.2. Si us plau, justifiqueu les xifres senyalades per al 2003.

3.3. Indiqueu amb una creu el desenvolupament que creieu que es produirà en el segment

"Online retrospectiu" entre 1998 i 2003, tant en les xarxes emprades com en els continguts, (en termes de creixement mitjà **anual** en %)

	Més del 20%	**15-20%**	**8-15%**	**0-8%**	**Declinarà**
Xarxes					
Internet					
Iberpac X.25					
InfoVía					
Retevisión					
Cable					
Altres xarxes*					
Continguts					
Informació sobre crèdit					
Notícies, premsa					
Altra informació per a negocis					
Informació legal					
Informació científica, tècnica, mèdica, patents					
Altres matèries*					

* Si us plau, especifiqueu-les

3.4 Si us plau, expliqueu algunes raons en les que baseu la vostra opinió, tant per a les xarxes com per als continguts

Xarxes

Continguts

3.4. Indiqueu amb una creu el desenvolupament que creieu que es produirà en el segment "Offline" entre 1998 i 2003 (en termes de creixement mitjà **anual** en %)

Suport	**Més del 20%**	**15-20%**	**8-15%**	**0-8%**	**Declinarà**
Cd-rom					
Disquet					
DVD-rom					
Altres formats*: ____ ____ ____ ____					

* Si us plau, especifiqueu-los

3.6. Si us plau, indiqueu algunes raons en les que baseu la vostra opinió:

4. Noves àrees de negoci o d'activitat econòmica en informació electrònica

4.1. Publicitat electrònica

Creieu que com a mitjana els proveïdors de serveis d'informació electrònica (tant online com offline) podran obtenir més del 20% dels seus ingressos totals gràcies a la publicitat electrònica en l'any 2003?

[ ] Sí, hi estic d'acord.
[ ] Hi estic d'acord fins a cert punt.
[ ] No hi estic d'acord.

4.2. Si us plau, expliqueu el perquè de la vostra opinió:

4.3. Comerç electrònic

Creieu que en termes generals els proveïdors de serveis d'informació electrònica (tant online com offline) podran obtenir més del 5% dels seus ingressos totals gràcies a realitzar transaccions electròniques (vendre ells directament o facilitar les vendes d'altres) en l'any 2003?

[ ] Sí, hi estic d'acord.
[ ] Hi estic d'acord fins a cert punt.
[ ] No hi estic d'acord.

4.4. Si us plau, expliqueu el perquè de la vostra opinió:

4.5. Valor afegit i "reempaquetament"

Creieu que en línies generals els proveïdors i els intermediaris (*information brokers*) de serveis d'informació electrònica podran augmentar els seus ingressos totals reelaborant, refinant reempaquetant informació en els propers anys (en comptes d'oferir resultats o dades sols en "brut")?

Sí [ ] No [ ] Pot ser [ ]

Si us plau poseu 3 exemples de reelaboració d'informació que creieu que puguin ser rendibles comercialment en els pròxims anys:

Primer exemple (amb explicació):

Segon exemple (amb explicació):

Tercer exemple (amb explicació):

5. Política de productes

5.1. Creieu que en general els proveïdors de serveis d'informació electrònica professional (tant online com offline) podran obtenir més del 20% dels seus ingressos totals gràcies a la venda de productes multimèdia (multimèdia = incloent parts d'àudio i/o vídeo) en l'any 2003?

[ ] Sí, hi estic d'acord.
[ ] Hi estic d'acord fins a cert punt.
[ ] No hi estic d'acord.

5.2. Si us plau, indiqueu algunes raons en les que baseu la vostra opinió:

5.3. Si us plau, podeu posar 3 exemples de tendències que hagueu observat en la millora del control de qualitat dels productes i serveis d'informació electrònica que creieu que tindran un paper determinant en els propers 5 anys? (exactitud de la informació, actualització, precisió de la cerca...)

Primer exemple (amb explicació):

Segon exemple (amb explicació):

Tercer exemple (amb explicació):

6. Barreres per al desenvolupament del mercat

6.1. Quins són els 3 impediments més importants per a que el mercat de la informació electrònica es desenvolupi a Espanya?

Primera barrera (amb explicació):

Segona barrera (amb explicació):

Tercera barrera (amb explicació):

6.2. Apart de la política d'informació oficial nacional, què es podria fer per eliminar aquestes barreres (per part dels proveïdors, intermediaris, usuaris i les seves associacions, així com pels documentalistes)?

Primera proposta (amb explicació):

Segona proposta (amb explicació):

Tercera proposta (amb explicació):

7. Política d'informació

7.1. Si us plau, poseu 3 exemples del que hauria de fer el Govern (en la seva política nacional d'informació) per a donar suport al desenvolupament dels mercats d'informació electrònica a Espanya. Si us plau expliqueu les vostres recomanacions.

Primera recomanació (amb explicació):

Segona recomanació (amb explicació):

Tercera recomanació (amb explicació):

7.2. Si us plau, indiqueu 3 exemples del que hauria de fer la *Comissió Europea* per donar suport al desenvolupament dels mercats d'informació electrònica en la Unió Europea. Si us plau expliqueu les vostres recomanacions.

Primer exemple (amb explicació):
Segon exemple (amb explicació):

Tercer exemple (amb explicació):

8. Altres tendències

Si us plau, descriviu altres tendències que creieu importants en el desenvolupament dels mercats per a la informació electrònica des d'ara fins l'any 2003.
Raoneu per què.

Moltes gràcies per la vostra cooperació

Si us plau, torneu aquest qüestionari omplert a:

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