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# Pleonastic exclusion in the European Information Society

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## Abstract

The dramatic changes in communication technology and the media this last decade of the century have inspired enthusiasm among business community, policy makers and academic scholars. Visions of prosperity and social wealth have become the core arguments for defending the strong emphasis on the Information Society “project”. Europe is working hard towards research and development but is it taking the right way?

A lot can be said about the differences of the communication infrastructure between the rich North and the poor South (Vincent, 1998), but not much attention is paid to the situation in the countries of the Periphery. This paper intends to focus specifically on this area and to take a look at the Greek experience. Greece is an EU member State but at the same time is part of the Periphery standing inbetween the rich industrialised North and the poor developing South. The paper argues that, despite the citizens’ needs and wishes, the promotion of the European Information Society (IS) in Greece is characterised by disproportionality. Another kind of capital difference between groups with different socio-economic status is emerging. The ‘Knowledge-Gap’ phenomenon becomes evident in that a high percentage of the population is excluded as users of the new media, due to reasons related to their educational and financial status. Additionally, a new phenomenon of “pleonastic exclusion” is taking place, as a result of the enormous numbers of channels of communication, which forces audiences to a continuous selection-exclusion of information sources.

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The paper investigates the consequences of the IS as it is currently planned departing from data of a local level, exploring the Greek experience, and relating them to issues of global significance such as the emergence of new classes. © 2000 Elsevier Science Ltd. All rights reserved.

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## 1. Introduction

In the following pages we are going to explore the ways in which, new technologies applied under the current circumstances, with the emphasis placed on their marketability, contribute towards the reinforcement of inequalities in the acquisition of knowledge. In order to appreciate the extent of the significance of information technologies in the global economy, we briefly examine their various applications and their complications in Greece. By projecting the main issues of concern on the European policies we attempt to show the implications of the application of ICTs on society. We are looking at the current policy initiatives on a European level that attempt to regulate the emerging Information Society, examining the extent to which they are able to cover public interests and in regard to the problems mentioned here. We then take a step further and discuss the implications of the new conditions on a social and political level and we give an account of how the production and regeneration of inequalities in accessing and processing information results in the creation of a dual society that uses knowledge as the nominator of economic and political power. Differences based on inequalities of access to information are created in multiple levels. Based on Fortner's definition we call the exclusion from information sources in general "pleonastic exclusion". Fortner makes a distinction between three kinds of exclusion: "impedient excommunication" on the grounds of economics, "pleonastic excommunication" based on an overload of information, and "ascetic excommunication" as exclusion by choice (Fortner, 1995). We use the term "pleonastic" in its double meaning as a continuous, repeated exclusion due to economic and educational factors on the one hand and as an exclusion based on the overload – *pleonasm* – of information.

## 2. Do we need the European Information Society? Great – and not so great – expectations

A wonderworld of new opportunities and dynamics driven by technological advancement called "the information revolution" is the new myth, that dominates economic and political life in Western societies. Technological capacity, such as Research and Development (R&D) and human resources necessary for technological innovation and utilisation of the latter constitute the core pattern of global economy (Castells, 1996, p. 103). Within a rhetoric of euphoria about new opportunities, vital

issues of employment and wealth arise. For the unemployment stricken European Union (EU) the first opportunity seen in the new technologies is the creation of new jobs. According to some estimates IT industries will be the biggest employer of the next century: today in the EU alone there are 500,000 vacant positions for IT, while during the three years between 1995 and 1997 another 300,000 new jobs were created in the field of information systems. For example, the mobile phone industry claims to offer an additional 150,000 new posts by the year 2002 while 300,000 new jobs are expected to be created in the EU in the audio–visual sector by the year 2005. According to Datamonitor almost one million people are working in telephone service centres in the EU. The demand for this kind of service is so high that 40% of French companies are planning to introduce it. This is regarded as a very dynamic sector of the economy which already represents 5% of the GDP of the EU and it is developing with a rate 5% higher than the average of the EU economy. (Tetradia Oikonomias, 1999). According to the European Commission there are two to three million EU citizens who are teleworking today, a number that is estimated to reach 10 to 20 million by the year 2005.

Another aspect is that teleworking can also change the traditional concept of the office, by saving time, space and ultimately money, while there is a positive effect for the reduction of traffic and pollution, since employers will not need to be physically present at their work. Furthermore, information technology eventually allows the development of better forecast and prevention systems from natural disasters, the development of ‘smart’ environmentally friendly cars or even the better – more sophisticated designing of traffic. Other opportunities for better living standards would include improved services for physically challenged people, and those who live in remote areas and are unable to reach several services. Moreover, optimists of electronic democracy argue that the IT promotes the trust of the citizens to the public sector and improves the services that the latter can offer. The democratic institutions will be empowered. Mechanisms such as elections and votes count will be faster and more accessible to the public. More citizens will be able to participate in the decision making process which would lead to the developing of a new model of democracy (Tetradia Oikonomias, 19 April 1999). For peripheral, developing countries like Greece that lack a strong economic structure based on heavy industry or minerals or a competitive agricultural sector in the EU, the opportunity that IS offers for the development of a Service sector would be highly beneficial.

### **3. What kind of IS do we really need? The reality of impeding excommunication**

Legitimate questions are raised as to the customer and companies profile of the IS. Do Small and Medium Enterprises benefit from the IS? Is the IS a tool in the hands of citizens and companies from developing or peripheral countries? How does the public sector benefit from that, if at all? The data for Greece does not offer support for any positive claims. It is often argued that the convergence between information

technologies and telecommunications will have a similar effect in social life and economy as that of the railways in the 19th Century. According to the Internet Industry Almanac, at the end of 1998, Internet users numbered more than 147 million around the world, more than twice the number of those in 1996 (61 million). The number of users is estimated to reach 320 million by the year 2000 and more than 720 million by 2005. By that time the use of Internet in the world is expected to be as widespread and common as the use of cars (Internet Industry Almanac, 1998). But who is the owner of a car in our planet? And who is the ‘user’ of this information technology? It is worth pointing out that while the EU policy makers are talking about the IS revolution and the ‘race’ between the two main Internet users, the US and the EU (in 1997, 70 million people were connected to the Internet, twice as many in the US than in the EU. The gap appears to be closing and at the end of the new millennium; both areas will have the same numbers of users, approximately 140 million each.) today only 25% of the population of the planet has access to a telephone. Accordingly the PC owners comprise a small fraction of this population, whereas more than 50% of Internet users live in the fifteen most developed countries in the world (Tables 1 and 2).

On the other hand, there are other levels that the EU is not likely to catch up with, such as business investment in information technologies. In 1997 in the US 55% of the total investments were in the IT sector compared with the 17% in the EU. In Greece, investment in the ICT sector is of the lowest in Europe with 0.63% of the GDP.

Table 1  
Top 15 countries in PCs-in-use worldwide at year-end 1998

Rank	Country	PCs-in-use (millions)
1	US	129.0
2	Japan	32.80
3	Germany	21.10
4	UK	18.25
5	France	15.35
6	Canada	11.75
7	Italy	10.55
8	China	8.26
9	Australia	7.68
10	South Korea	6.65
11	Spain	5.71
12	Russia	5.63
13	Brazil	5.20
14	Netherlands	5.13
15	Mexico	4.60
Total	Top 15 countries	287.8
Total	Europe	112.1
Total	Worldwide	364.4

Table 2  
Top 15 countries in internet usage per capita, 1997

Rank	Country	Internet users per 1000 people (millions)
1	Finland	244.5
2	Norway	231.1
3	Iceland	227.3
4	US	203.4
5	Australia	178.0
6	New Zealand	155.9
7	Canada	148.9
8	Sweden	147.3
9	Singapore	141.2
10	Denmark	125.6
11	Switzerland	107.1
12	United Kingdom	99.5
13	Netherlands	88.9
14	Hong Kong	64.9
15	Japan	63.1
Total	Top 15 countries	148.5
Total	Europe	44.1
Total	Worldwide	16.9

It is obvious from the above that the already developed countries are leading the race and at the same time they are the ones profiting the most, a profit that simultaneously reinforces the widening of the gap between the information-rich and information-poor nations. In order to fully appreciate the complications of this phenomenon, it is vital that attention is paid to the significance of the IS in the market through the following figures (see Figs. 1–5). Information and information technology constitute the future means of production: it is estimated that in 1996 electronic commerce (e-commerce) reached \$1.1 billion, while the most conservative estimates for the year 2000 predict that e-commerce will reach the amount of \$13.6 billion and in the year 2005 the amount of \$1 trillion. Furthermore, at the end of 1998, 48% of America On-Line Internet provider customers have made purchases using the Internet (Tetradia Oikonomias, 1999).

A new service in the net is the Internet Protocol telephone services that cost less (in the UK, 70% less) than the conventional ones. This service is expected to capture 36% of the international telephone calls market by the year 2003, putting in danger one of the main sources of income for the conventional telecommunication industries (Tetradia Oikonomias, 19 April 1999). All these services create an ever increasing pressure in the telecommunication infrastructure which is unable to keep up with copper networks of 56 Kbps maximum capacity. The digitisation of these networks improves the quality of the services but not their capacity to carry more information. In the EU the solution seems to be the ISDN networks with a total capacity of 128 Kbps, as well as the expansion of fibre optics, digital subscription lines DSL and the

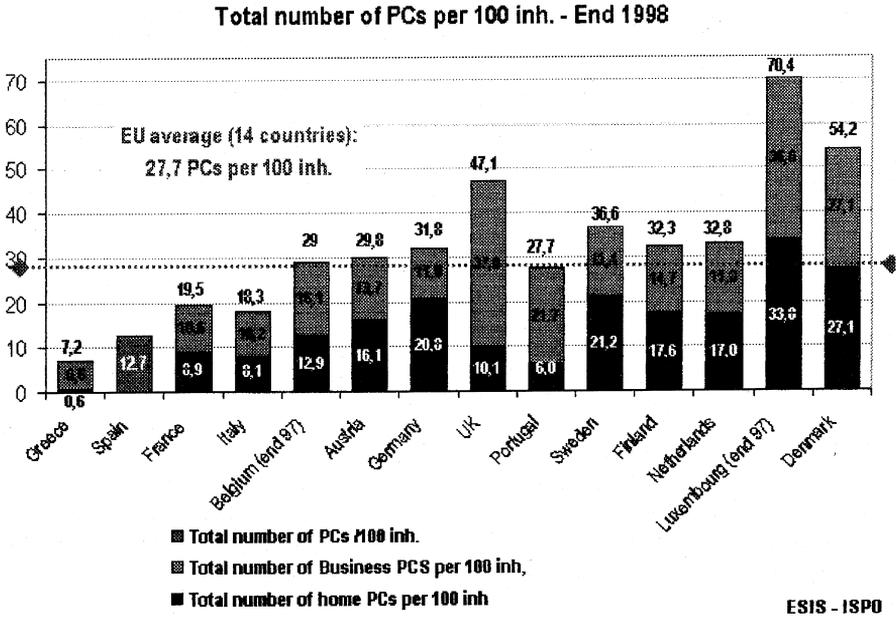


Fig. 1.

use of satellites. The prospects of the telecommunications industry become obvious if we look at the mergers of different business sectors. The new developments in the IS are in favour of the big conglomerates, while they may prove disastrous for smaller

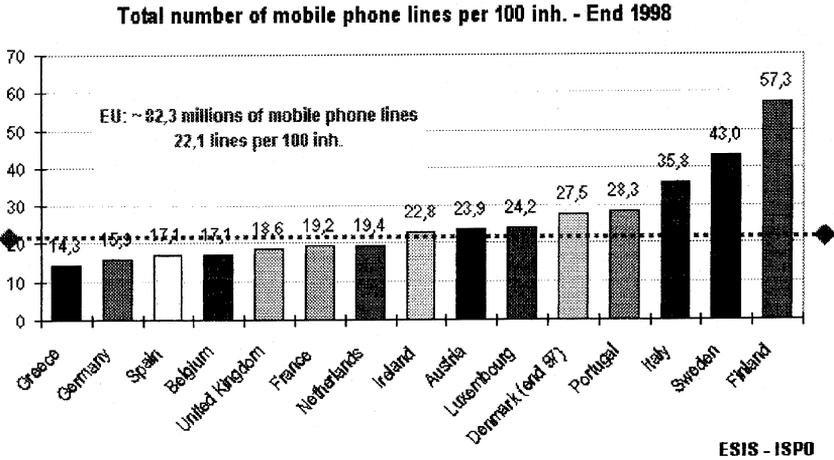


Fig. 2.

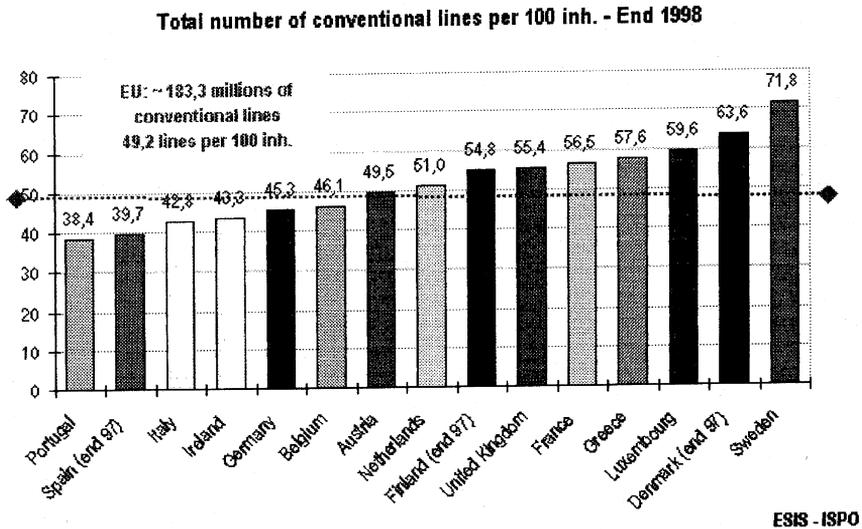


Fig. 3.

companies and the public sector. In order to stand the pressure and at the same time compete in the international market with AT&T, Deutsche Telekom recently invested \$18 billion in order to be able to offer all its services through the Internet. In

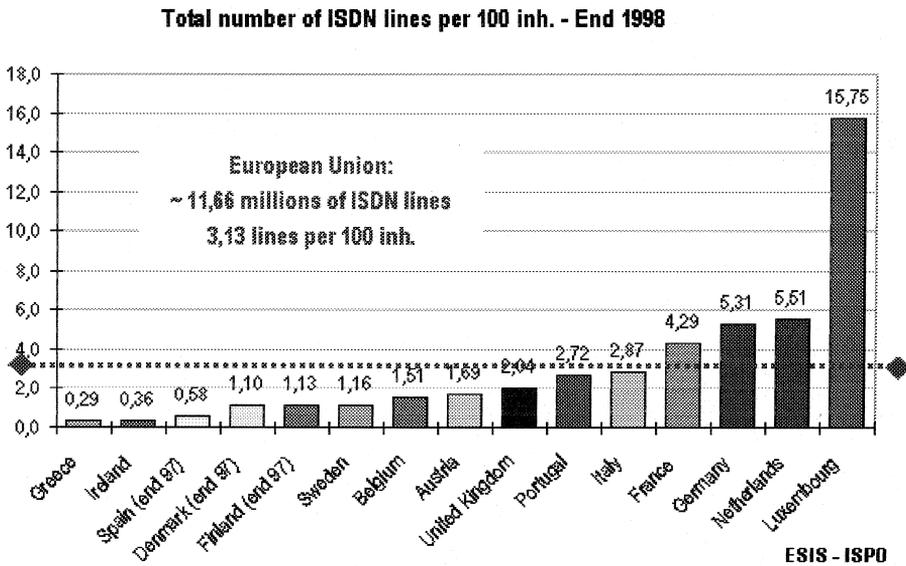


Fig. 4.

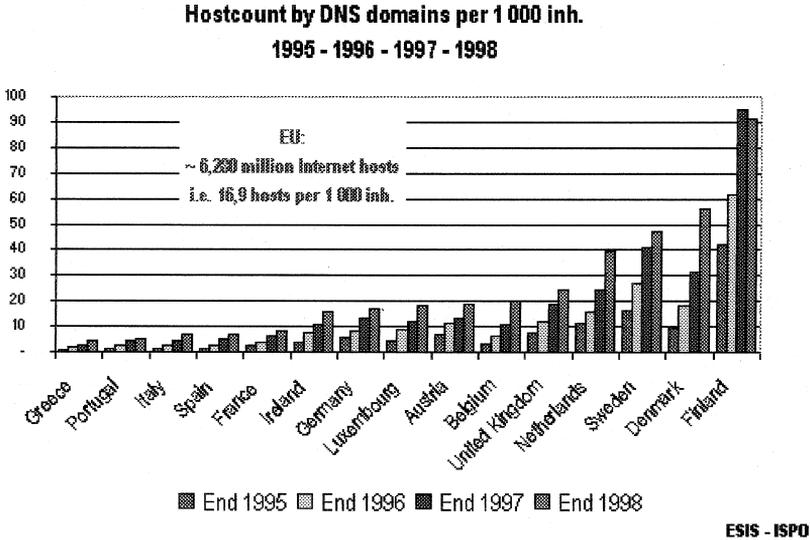


Fig. 5.

April 1999 the Deutsche Telekom announced its intention to merge with Telecom Italia. If this happens, they will create a telecoms-giant with a market capitalisation of about \$175 billion and 300,000 employees (The Economist, 1999, p. 69). It is interesting to note that three out of the ten biggest mergers or buy-outs of companies in general take place in the telecommunications sector. It is doubted that smaller national telecommunication organisations such as the public Greek Telecommunications Organisation (OTE) can compete and survive in highly competitive and extremely deregulated international markets.

Further on in the public sector, a very small percentage of the Greek doctors are using IT – only 20% – when the figure is as high as 80% for Germany and France and 90% for UK. Out of 143 general hospitals and 173 small municipal ones in Greece only 15 of them use computers, mainly as word processors, and not for the purposes of telemedicine. In the education sector things are not better. Until the end of 1996, 1187 out of 1777 high-schools used computers for educational purposes but most of them were of second and third generation computers (286, 386) that are unable to support new programmes or sophisticated software for the introduction of the IS.

Do consumers from peripheral countries profit from the IS services? Not today, is the answer taken from data on the situation in Greece. The main problem in Greece, also observed in a different scale but in the same form in Africa and other developing countries, is that the services of the IS are much more expensive than the ones offered in the developed countries. Also adding the difference of the average salaries in these countries the results are tragic. In Greece the prices are five

times higher than the ones in Sweden, four times higher than the ones in Finland and three times higher than the ones in UK. On top of these differences we have to add the fact that the average income in Greece is 69% of the EU average. The Greek population (especially the non-privileged parts) will be forced to stay out of the IS. (Tetradia Oikonomias, 19 April 1999). At the same time further ISDN services in Greece are in an embryonic stage. Only 330 customers have required ISDN services. Of these 36% of the subscribers are involved with foreign companies and 28% are subsidiaries of foreign companies. Besides, a significant part of those connected, 37%, have not yet used the services because of a serious lack of ISDN equipment and lack of information offered by the provider, the Greek Telecom (OTE) (Gaglia and Yannelis, 1998, p. 262). Of the 330, only 3% are private customers, that is not connected with companies. Furthermore prices are very high estimated to be 2.5 times higher than the international average and 25% more expensive than a basic telephone line. Furthermore, the rapid development and availability of different kinds of devices create problems of technical compatibility and cost. It is estimated that in 1994 investing in hardware, depending on the sophistication of the system cost between \$3700 to \$18,000 in the States. To this one must also add service charges (Fortner, 1995, p. 143). It is evident that investment of this cost can only be considered by high income groups. Low income groups cannot have access to alternative sources of information and find themselves in a disadvantaged situation, even if they have access to television and telephone. The reason for this is that the sources of information theoretically available, are significantly reduced on the practical level for strata with low purchase power. Similarly even the use of lower cost forms of communication, such as cable or satellite TV, fax-machines, VCRs and mobile phones is restricted to a great extent to the people who can afford these extra costs, and for businesses. In daily life, for low income classes, such as manual workers, unemployed and homeless and people who live under the poverty line new technologies are of secondary importance since basic needs have to be met first.

#### **4. Further exclusion: pleonastic and ascetic excommunication**

Exclusion of information from various sources of information, such as satellite television channels or Internet sources, is class specific. The immediate consequences of this phenomenon are the handicap of people in their role as citizens, being de facto denied access to all available information. Only 12% of the Greek population uses a PC in their everyday life – compared to 56.7% in Denmark – while only 2.9% are connected to the Internet – compared to 39.6% in Sweden (INRA, 1999). Similarly the use of other information technologies such as fax is low with just 2.6% compared to 7.8 in former East Germany and 13.8% in Luxembourg (ibid.). It is also evident that ascetic excommunication is directly relevant to people's interest in new technologies. In Greece the interest to use the Internet as source of information is the

lowest in Europe with approximately 4% of the population choosing it as preferred source compared to 22% in Sweden (Standard Eurobarometer 49). This data should be compared to 76% viewership of television news – one of the highest in Europe – and 32% of newspapers readership – one of the lowest in Europe (*ibid.*). It seems that people are not so much interested in new sources of information other than those available in traditional forms, or at least they are not as interested as the industrial and governmental prophecies claim them to be. EU citizens do not want to receive information via the new IS technologies, rather they show a strong preference to the traditional media (*ibid.*) (see Table 3).

At the same time ascetic excommunication resulting from an overload of information becomes clear when we compare the amount of time spent on consumption of media with other activities such as sleeping and working. Increasing the amount of information will mean that people will have to drop some sources in order to concentrate on others. Americans spend up to 9 h per day with the media compared to 8 h of sleep. That is 3256 h a year of which 4 h a day of television, 36 min of recorded music, 28 min of newspaper compared to 1824 h on the job (Fortner, 1995, p. 138). Greeks spend 4 h a day or 1307 h a year with television – consumption of other media is not included – compared to similar patterns of work and sleep (AGB, 1999).

## **5. The question of IS opportunity cost**

More recently (May 1999), in order to show the future power of IS, four ‘human guinea pigs’ have volunteered to be locked up virtually naked, “equipped” only with a computer and a credit card each, in an attempt to discover the effectiveness of the Internet as a market factor. The project organised by Microsoft’s *msn.co.uk* webpage envisages that the cyber-adventurers will be locked in separate rooms for 100 h and will have to rely exclusively on the Internet to feed, clothe, communicate and entertain themselves. The volunteers would also try to continue living their everyday lives, one plans to play chess while another aims to find a job. The ultimate goal is to “put the current Internet services to the test and see if it really is possible to survive with nothing but the Web and a credit card” (BBC News, 1999). But while the industry of the IS is working on ‘survival IS’ projects, even the proponents of the IS recognise that there are certain dangers from IS. The difference is that they mainly concentrate on the problems deriving from not introducing the IS fast enough or fully. We would like to focus on the dangers of the introduction of the new IS technologies. The most significant consequence of the inequality in the IS is increasing the Knowledge–Information Gap between different groups in the society and between societies from the centre – developed world and periphery and developing countries. In order for the IS to improve living standards, people will need to have the appropriate education in order to transform the tools of IS into productive professional or recreational solutions. But here we are facing a new issue. The fact

Table 3  
Preferred method for receiving information – results in % by country (Full question text on previous page). Supports d'information préférés – Résultats en % par pays (Texte complet de la question en page précédente)

EB 50.0	B	DK	D		GR	E	F	IRL
			West	East				
1. Short leaflet	20	20	17	20	18	8	21	30
2. Brochure	37	31	30	30	27	24	34	22
3. Book	7	15	6	6	19	13	15	11
4. Video tape	11	7	4	4	3	7	8	9
5. On the Internet	6	24	5	5	8	5	6	8
6. CD-ROM	6	10	6	6	3	4	5	2
7. Computer terminal	3	5	3	3	2	3	3	4
8. Television	61	64	54	55	74	59	55	49
9. Radio	33	32	22	23	20	27	23	30
10. Daily newspapers	36	36	44	45	23	33	29	30
11. Other press	14	14	16	16	5	8	14	8
12. Does not want EU info <sup>a</sup>	9	1	6	5	3	7	4	5
13. None of these ways <sup>a</sup>	3	1	3	3	2	3	2	1
14. Don't know	2	1	5	4	0	5	3	4
	I	L	NL	A	FIN	S	UK	EU15
1. Dépliant	20	27	31	21	29	33	18	19
2. Brochure	16	28	34	33	25	28	23	26
3. Livre	14	13	5	11	10	12	9	11
4. Cassette vidéo	12	10	10	8	7	9	10	8
5. Sur Internet	7	9	19	6	17	22	10	8
6. CD-ROM	7	7	18	8	5	11	5	6
7. Terminal ordinateur	5	2	6	4	5	8	2	4
8. Télévision	61	53	49	44	57	56	51	56
9. Radio	19	33	22	28	26	27	17	22
10. Journaux quotidiens	31	38	42	33	43	45	33	35
11. Autre presse	16	11	16	14	17	13	11	14
12. Ne souhaite pas d'info sur l'UE*	2	1	2	9	1	2	5	5
13. Sous aucune de ces formes*	2	3	2	2	3	1	3	2
14. Ne sait pas	3	4	2	2	1	2	5	3

<sup>a</sup> Spontaneous response/Réponse spontanée.

that the education gap between groups with different social and economic status is widening due to the introduction of the IS under the current circumstances. The dangers of social isolation and exclusion due to the inability to use the new tools of the IS are very real. Millions of unemployed who are not able to join the work force anymore because they are not accustomed with the changes, are becoming part of the losers of the IS. Organised crime through e-commerce, harmful content in the Internet and hate speech are areas that cause controversial reactions from the policy-makers. Furthermore there is much doubt if culture, seen as a market product like any other, will benefit from the deregulation of the telecommunication and audio-visual industries, as small cultures run the danger of becoming dissident or extinct (still today the servers of the European Commission are not able to read Greek fonts, thus forcing the Greeks who want to write directly to the EU to use a degraded language called Greek-lish-Greek language with Latin fonts). Thus, we believe that while the IS industry can continue its fancy 'science-fiction' type of projects, academics and policy makers need not to follow them in the frenzy race of impressions. Instead, research needs to be introduced on what is the 'Opportunity Cost' of the IS. This should come as no surprise since more than one in six of the world's population cannot meet basic survival needs (Yeomans, 1999, p. 38). Communication technologies can hardly be regarded as a priority under such circumstances. What else can be done for the education in Greece with the same investments? What can be done for the underprivileged, unemployed or people with low socio-economic status with this money instead of the promotion of the IS? What are we missing in the area of culture by diverting money to the IS? What is the cost of the promotion of the hate speech in the Internet and the assistance offered to the organised crime through e-commerce?

## **6. EU policy and provision: claims and doubts about the IS**

Theoretically the possibilities of communication have never been more extended than now. Information appears to be the moving force behind these developments and the necessary ingredient for all this to make sense. The production of goods as well as services are increasingly becoming knowledge-based. However as we observed above, the speed of introduction of ICTs varies between countries, regions, sectors, industries and enterprises. The benefits, in the form of prosperity and the costs, in the form of burden of change, are unevenly distributed between different parts of the Union and between citizens. First immediate concerns regarding the effects of the information society regard unemployment and accessibility. On a macro-level concerns about democracy, accountability and equality arise. Will the complexity and cost of the new technologies not widen the gaps between industrialised and less developed areas, between the young and the old, between those with know-how and those without? Policies in the EU about the Information Society began with expert reports and action plans, that were distributed to maintain contact

with interest groups. Instead of maintaining contact with public interest groups, the EU programme has been mainly shaped by bureaucrats and industrial corporate interests (Schneider, 1997, p. 350). Since 1986 a series of projects and liberalising measures for telecommunications reached the “high point” of the White Paper on Growth, Competitiveness and Employment – The Challenges and Ways Forward into the 21st Century (EC, 1993) that regarded the IS as the key-factor for growth. This resulted in the report known as “Bangemann Report” in 1994 conducted by a group of industrialists co-ordinated by Commissioner Bangemann, that proposed liberalising measures for open telecommunication markets. The main measure proposed was to leave the telecommunications sector to the private sector while governmental funding was proposed not to be limited to non-profit organisations. The policy initiatives taken until now within the European Union concentrate on the economic potential of the new technology, whereas provisions for the safeguarding of the protection of citizens and consumers are still in an embryonic stage, without any clear evidence that this will change. What characterises policy documents is the dedication to neoliberalist discourses that seek to legitimate control over the production and distribution of new technologies. The Green Paper “working and living in the Information Society” attempts to bring under focus key issues such as the organisation of work, employment and social cohesion. The rhetoric of “challenge” however distracts attention away from the social implications of the IS. It presupposes that the commercial uses of technology constitute the most important and main area for regulatory provision. Aims are limited in raising awareness of the potential of the new paradigm of work organisation for maximising competitiveness (Ch. 3), intensifying human resource investment and transforming the education system (Ch. 4). The Green Paper states that the liberalisation of telecommunications should proceed fully and rapidly across the Union and that the new regulatory framework should support cohesion objectives (EC, 1997, Ch. 4). Again, the document remains vague when attempting to give a humanist perspective in the provision of regulation for the IS, while at the same time repeats the same claims for wealth creation, higher living standards and improvement of services. The Economic and Social Committee criticised the lack of commitment on behalf of the European Commission towards a more holistic evaluation of the new technologies and stated that it “regrets that [the European Commission] focuses too little attention on ICT’s impact on daily life [...] without any specific suggestions as to how to remedy the situation” (CES, 1997). In 1999 the final report on the public consultation (consisted of 80 organisations mostly representing private interests) reveals the main concerns of access to networks and gateways facilities as a factor in securing effective competition and the need for homogenisation of regulation regarding transport network infrastructure. The aims are identified as the facilitation of free market regime, reach of audiences, (EC, 1999b) while earlier in the same year discussion about the form of provisions were made on accessibility, in terms of service providers, to government information and mediation (EC, 1999a). The Commission calls upon the example of the United

States and the “Freedom of Information Act” in 1966 where governmental information is available to the citizens, through private service providers, free of charge or for a very small fee.

It is however interesting to note some changes regarding public information: the latter available free from libraries or government agencies becomes very expensive when purchased from a computerised service. In the States an annual subscription to the Federal Code of Regulations costs \$21,750 in electronic form and \$400 in printed. Similarly the Federal Reserve Board’s quarterly reports on the financial performance of banks used to be free whereas now it costs \$500 a piece in electronic version (Fortner, 1995, p. 143). Euphoric statements and intensified interest in creating the circumstances for competitive growth of the new technologies constitute the dominant debate that surrounds the phenomenon named the “information society”. This gives rise to a certain approach of regulating provisions about the IS. It is often the case that major issues of concern are not given necessary attention. Drawing on technological potential as described above, the Fifth Framework Programme for research and development concentrates mainly on the “marketability” and the “hardware” of a whole new system of technologies. While stating as its primary aim to “help companies operate more efficiently” its provision for the public is limited in the promotion of “user-friendly” technologies, missing out totally the bigger issue of inequality and the consequences of this, as these will be discussed further on (EC, 1999a,b). The convergence in the field of tools accessing and processing information and content is itself regarded as critical to Europe’s competitiveness and quality of life (EC, 1999a,b).

According to the European Commission the new conditions can be successfully dealt with through a series of actions to stimulate productivity and the expansion of the use of technology through user-friendly technical means. The promises for benefits for the whole of society, generated and sustained as such by industrialists, technocrats and politicians, are used as the theoretical base or even the “utopia” that is called to justify astronomical expenditures and often one-sided (de)regulation. A “brave new world” of technology is supposed to transform people’s lives mainly through the use of speedy telecommunications that would provide access to a range of different products, from teleworking, transactions, and news coverage to teleshopping. However are these promises of wealth and prosperity for the citizens of Europe today; regarding the potential of the information society, any more realistic than the ones made at any point of technological innovation? Similar the arguments were made surrounding the use of telephone, in the beginning of the century, having predicted that communication between employers and employees through it would create a more democratic workplace. There has not been any evidence of that claim as there is very little that would justify an optimistic forecast of the consequences of the IS. In fact a series of problems gives rise to doubts about the validity of such claims. ICTs are already an integral part of daily life, providing tools and services at home and workplace. The Information Society is not a vision far away in the future, but a reality in daily life. Accessibility to the

new technologies, training, active rather than passive participation of the citizens are some of the main areas of concern. All these issues have a common nominator: information. This can be in the form of entertainment where television dramas and comedies provide an interpretation of the dominant values and ideas of society, to news coverage and comments provided by traditional means such as the press. Information about prices or events, developments or discussion for can be processed and transmitted via conventional or mobile phones, the Internet, satellite or cable television, fax machines, electronic post. The central word “Information” concerns not only transmitted data but also data about the use of the new technologies and information about their hardware that would lead to further development. The new avenues of transmission have the ability to interact with each other, therefore changing the until now clearly defined roles of sender and receiver. The boundaries between the different expressions of technology have also become of indistinct shape.

### **7. Through the looking glass: knowledge and the dual society knowledge and work**

Information creates knowledge. Knowledge cannot be consumed and cannot be sold the same way a car can. Once produced, knowledge can very easily be copied and distributed at low cost. The price of knowledge is very difficult to define, since it is invisible and purchasers have to buy first in order to realise the content of their purchase (Morris-Suzuki, 1997, p. 62). Intellectual property and copyrights are ways with which neoliberal economists try to overcome the difficulties of defining knowledge as a market product. Knowledge is also difficult to measure. In capitalism one way has been to distinguish between skilled and unskilled labour, manual and intellectual labour. Therefore, as soon as knowledge (considered as “skill”) becomes part of the labour sold on an hourly basis by a worker, it becomes a commodity, whose value remains indefinite. The reason for this is that skills gained cannot be measured in terms of time invested or ways in which they were gained: these can be gained through formal training, formal education, within a given period of time in. Most social skills however are gained through informal processes, indefinite time, and through unpaid labour such as child-rearing. Until now, the economic system has been based on material accumulation while at the same time an increase in knowledge has been taking place in various areas such as the sciences. Knowledge builds upon knowledge, this is why there are no real technological “breakthroughs”: technological development is a continuous process. Knowledge therefore has not been a formal commodity – not until the 1980s. It is the combination and interrelation of material production and knowledge that changed the situation. On these grounds much analysis redefines contemporary societies as “information societies” and the economy as “post-industrial economy” (Stonier, 1983, p. 21). Some characteristics of the post-industrial society are the shift towards a service economy rather than a manufacturing one, credit-based transactions rather than cash, transnational character and finally

the decline of the labour force as one dominated by people who work with machines and the subsequent rise of the information operators (Stonier, 1983, p. 31). If manual labour has been the core economic factor, the exchange value for accumulation of capital that served as the basis of capitalism in modernity, then it is apparent that this is now being replaced by information. Availability of and access to information, combined with the ability to analyse and evaluate information, are the new elements of power in western societies. Many studies are concerned with the end of labour as we know it. “The end of work” by Jeremy Rifkin, the “jobless future” by Stanley Aronowitz and William DiFazio or “shifting time” by Armine Yalnizyan, T. Ran Ide and Arthur J. Cordell all explore the change of the nature of work, projecting the replacement of full-time work with part-time jobs, the extension of the working day, instability and the growing gap between information or “knowledge” workers and the masses of the unemployed (Davis and Stack, 1997, pp. 133–134). These studies contradict the predictions of the high level group of experts of the European Community and policy documentation produced until now. Recall the estimations of the EC of 2,000,000 jobs by the end of the millennium, the creation of new jobs, even if it is realistically estimated and proclaimed in surveys and other policy documents, does not necessarily mean less unemployment. The claims for new jobs do not provide evidence of the latter nor do they provide a clear profile of the work situation in Europe at the moment. Jobs, such as in teleshopping services, are mainly part-time and unstable, with questionable social benefits, such as the provision of pension, health care or education. Other questions also remain open, such as if the new jobs will replace others and in what pace.

## **8. Work and lifelong learning**

The new nature of work in the Information Society creates new needs for training and the procurement of specific kinds of knowledge. Lifelong learning is presented as an imperative of the information society, placed on the very top of the priority scale in regulatory provisions. The central force and main characteristic of the information society is its nature as a “Learning Society” (EC, 1997) where education and skill acquisition are a lifelong process starting from school and continuing “at work and at home” (ibid.). According to Kroker and Weinstein, lifelong learning is a central ideological apparatus – a discourse for the promotion of the economic order now based on knowledge, gained through formal procedures. The quality of the required “learning” of the required knowledge has very specific characteristics. It is knowledge concentrated on instrumental learning, limited to managerial and technical courses, where human subjectivity and human experience are diminished (Falk, 1999). “Clonal” workers in Canada are provided lifelong learning opportunities through compulsory, short-term on-the-job training (Falk, 1999). Such training as well as other courses, are usually funded by the individual and by the workers themselves, instead of by the employer. Neither is it

the case that the new structures of learning will have a liberating effect, as education is usually expected to. Kroker and Weinstein (1994), Boshier (1997) and Falk (1999) all point out this has the commercial reconstruction of education and the consequences to individual freedom. Learning becomes compulsory and instrumental: those who are not able to, or who do not want to adapt, will be rejected from the work process. Disadvantaged social strata will remain disadvantaged, especially those people who are not “flexible” enough such as the elderly, the long term unemployed or people who have not been exposed to education for very long period if at all. Furthermore, the last vestiges of freedom to choose not to acquire education at all or one under the described circumstances, disappear in the light of the consequences that this would have: the radical reduction of life chances. The necessity of obtaining new skills while de-valuing knowledge and skills becomes increasingly a new condition that applies to all but the wealthy. Typical characteristic in Greece constitutes the emergence of uncontrolled private training schools and colleges of further education to cover for training demand. The annual fees for such courses are much higher than the annual income of an industrial worker, while the degrees or certificates enjoy no official recognition from the Greek state.

### **9. The emergence of new classes?**

Despite the claims for the creation of a new society, based on freedom and equal access to information and therefore to knowledge, evidence on a global scale shows quite the opposite. In the early 1970s a theory that concentrated on knowledge differences in society based on the use of the media was very influential. Introduced in an article in the 1970s by Tichenor, Donohue and Olien, the knowledge-gap hypothesis predicted that the gap between people of low and people of higher socio-economic status would increase. Already privileged classes would gain more knowledge based on additional information as opposed to those from less well-off strata (Severin and Tankard, 1992, pp. 232–233). Since then, various studies have identified several parameters that influence the outcome of knowledge-based inequality. Tichenor et al. themselves distinguished between acquiring knowledge over time and at a given point in time, whereby acquisition of knowledge proceeds faster among better-educated people and even the correlation between education and understanding is higher for more publicised information, retrospectively (Tichenor et al., 1970; Severin and Tankard, 1992). Also, the authors found out that widening gaps are more likely to occur in pluralistic communities, with numerous sources of information, like the one advocated by the EU’s IS (Tichenor et al., 1975 *op. cit. ibid.*). Taken into consideration the phenomenon of excommunication as described by Fortner it becomes obvious that the qualitative application of the IS bears under the given organisation of the economic system the causes of further and new social inequalities. Some authors drew attention to the fact that,

especially in the case of public affairs, the knowledge-rich people, due to their involvement, are more likely to become even richer (Bishop et al., 1978). A number of interacting factors influence the knowledge-gap: one factor is information availability. This might mean that governmental documents are not made available to the public. Accessibility is the other side of availability and forms one of the main concerns regarding the information society. The nature and quality of the information received and processed also matters: is the information more about issues of personal interest or public affairs? Understanding and the ability to evaluate and analyse information depends heavily on factors such as educational status, knowledge background and social interaction. The “wired” societies of the supranational EU and the Clinton–Gore administration have very little in common with the unemployed masses – in Greece around 12%, in Germany 10% – and the homeless.

## **10. Conclusion**

Inequality in information and therefore knowledge acquisition creates further divisions in society between social groups. The basis of these differences lies in the economic structure that creates powerful and vulnerable strata defined by availability or exclusion from information. Groups of higher income are guaranteed access to technologies therefore strengthening their position as users. At the same time the knowledge levels of these groups can increase and so can their “marketability”. Apart from the economic classes in the orthodox, although perhaps problematic, sense of the word, the gap in information and knowledge increases with the introduction of new technologies, and with the subsequent emergence of new classes. If we were to define the form of these classes we would have to take into consideration three factors: access to, ability to process and ability to analyse information. As mentioned above, many thinkers are declaring the end of the work as we know it, in other words the end of the manual labourer. Castells (1996) and more than a decade ago Stonier (1983) identify information as the current and future commodity and knowledge deriving from that as the replacement of manual productivity. Globalisation of the economy no longer conceives national orders, while transnational movement of capital and investment becomes the main characteristic. This form of organisation within the economy has created the need for particular occupations that reflect the necessary flexibility for international capital. It nominates a new class of highly educated workers who are able to process and understand the information, that is necessary for quick decisions on transactions and investments, in other words the “symbolic analysts” (Webster and Robins, 1998, pp. 28–29). To Castells (from a different point of view but with the same focus on the emergence of the new class) it is the development of “horizontal corporations” that need the new class of “self-programmable labour” (Castells, 1996, p. 195) ready to apply the principles of “lifelong learning”, that is to de-and-re-

skill themselves, and adapt and follow the economic trends. The class of “symbolic analysts” (symbolic because they are expected to analyse abstract information) or “self-programmable labour” are the haves of knowledge and will survive or even climb up the managerial stair. The have-nots of knowledge fall even lower than before, since now, even their labour is no longer marketable: those who cannot afford to, or do not wish to be so flexible, are either condemned to long-term unemployment or to jobs that do not offer any reward other than extended hours and an insecure future. A third category are the social strata right at the bottom of the scale, the homeless. The gap between them and the new emerging class that owes its position to “education, expertise and the centrality of knowledge” (Touraine and Bell *op cit.* in Webster and Robins, 1998, p. 34) is only getting wider. “The homeless are not wired”. The propertiert class can ensure its survival in the information society, in that it remains advantaged in the educational system and is able to produce the technological elites, the “virtual class” according to Barbrook and Cameron (1996 *op cit.* in Webster and Robins, 1998, p. 38; Kroker and Weinstein, 1994a). The working class is grounded in localised space (Kroker and Weinstein, 1994a) while all the symbolic analysts, who are “problem-identifiers, problem-solvers and strategic-brokers” need, is an international airport and a networked computer. Regardless of the variety of names used to categorise societal groups in the new occupational structure and regardless of their origins there seems to be a consensus among scholars regarding the information society. This is the change in the occupational structures, the role of information and consequently knowledge in the new order and finally the emergence of new classes based on the knowledge levels required by the global economies. Information is becoming “tradable” and is increasingly being left to the market (Murdock and Golding, 1989). The signs of unemployed masses, dispossessed groups, uninformed citizens and outdated consumers have already been identified as a problem, something that can be found underlying the official documents of the European Union and the opinions expressed by the high-level experts group as well as in the concerns of the European Parliament. Still the policies that claim to guarantee harmonisation and deal with these issues systematically remain unfocused on the consequences that a dual society would have not just in the immediate future in terms of displaced and confused individuals, but in the fundamental structure of the democratic system. Alienated and disinterested masses do not make involved citizens. Perhaps this is one reason for the low participation – the lowest ever-in the election for the European Parliament in June 1999.

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## Appendix

## A. Foreign operators

Telecom Dynamics : business telecommunication and networks interconnection services including leased lines, frame relay, DVPN, X.400 mail service, Fax, Telex.

## B. Telephones lines

	End 1994	End 1995	End 1996	End 1997	End 1998
Total number of conventional lines	4 975 998	5 162 711	5 328 690	5 414 908	6 030 721
Total number of ISDN lines (subscriptions)	**	**	799	8 350	30 000
Total number of mobile phone lines	158 095	286 921	554 217	950 000 *	1 500 000
<b>Total number of lines</b>	<b>5 134 093</b>	<b>5 449 632</b>	<b>5 883 706</b>	<b>6 373 258</b>	<b>7 560 721</b>

Sources: OTE, Panafon, Telestet

\*estimation by mobile telephony companies

\*\*pilot phase

	End 1994	End 1995	End 1996	End 1997	End 1998
Total number of conventional lines per 100 inh.	47,5	49.3	50.9	51.7	57.5
Total number of ISDN lines (subscriptions) per 100 inh.	-	-	0.01	0.08	0.29
Total number of mobile phone lines per 100 inh.	1.5	2.7	5.3	9,1	14.3
<b>Total number of lines per 100 inh.</b>	<b>49</b>	<b>52</b>	<b>56.2</b>	<b>60.8</b>	<b>72,2</b>

	End 1994	End 1995	End 1996	End 1997	End 1998
% of ISDN lines (subscriptions) / Total number of lines	-	-	0.013	0.13	0.4
% of mobiles phone lines / Total number of lines	3.08	5.3	9.4	14.9	19.8

**PRICING STRUCTURE : Comparison of fixed cost per month for conventional and ISDN lines (in ECU) : Basic access compared to 2X conventional lines**

	Fixed Cost per month (ECU)
Conventional line	12.4 ECU
ISDN line	24.2 ECU

Sources : OTE

## C - Personal computers

	End 1997	End 1998
Total number of Home PCs	~50000	~63000
Total Number of Business PCs	~550000	~693000
<b>Total number of PCs</b>	<b>~600 000</b>	<b>~756 000</b>

	End 1997	End 1998
Total number of Home PCs per 100 inh.	~0.48	~0.6
Total Number of Business PCs per 100 inh.	~5.25	~6.6
<b>Total number of PCs per 100 inh.</b>	<b>~5.72</b>	<b>~7.2</b>

	End 1997	End 1998
<b>Total number of PCs with modem</b>	~120000	~151200
<b>Total number of PCs with modem / total number of PCs</b>	~20%	~20%

Sources: Strategic International

The estimation for 1998 sales was made by the market development rate, which is about 26% for 1998.

## D - Internet

	End 1997	End 1998
<b>% of PCs connected to Internet (using host data)</b>	~10%*	~18%
<b>Number of households with Internet access</b>	~24000 *	~30000
<b>Number of companies with Internet access</b>	~14000 *	~20000
<b>Number of access providers</b>	73	256

Sources: <http://www.open.gr> and <http://www.hol.gr/atlas>

\*Estimation by Hellas On Line (there are about 60,000 subscribers with access to internet)

## E - EDI use

	End 1997	End 1998	
Estimate of the total number of companies using EDI	300	380	+ 0.045.%
Estimation of EDI penetration rate in companies	0.5	0.6	
Estimation of EDI penetration rate in SMEs (less than 250 workers).	0.1	0.1	
Estimation of EDI penetration rate in medium and large companies (more than 250 workers).	3	3	
Favoured sectors in which EDI is most used	Trade, Tourism, Bank, E-commerce, Health		

## F - Miscellaneous

<i>Teleworking</i>	Total number of teleworkers	% of teleworkers / labour force	Last reference date
Teleworkers	negligible	negligible	1998

<i>Use of electronic mail</i>	Total number	Numer per 100 inh.	Last reference date
E-mail addresses	~100,000	0.95	1/10/98
Domain names	5687	0.05	1/10/98

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