Development of a National Information Policy in Greece

by

Athanasios Priftis, (University Degree)

**A Master's Dissertation, submitted in partial
fulfilment of the requirements for the award of
Master of Science degree of
Loughborough University.**

September 1998

**Supervisor: Professor Charles Oppenheim, Department of Information and
Library Studies.**

© **A. Priftis, 1998.**

Abstract

There has been a considerable growth in the analysis of and interest in implementing information policies in Europe and world-wide. This dissertation seeks to examine the structure and procedures of the current situation in Greece regarding the development of a National Information Policy. Its future decisions and actions towards the development of a National Information Policy and its participation in the European Information Society, will affect in a negative or positive way many aspects of its international and social life.

The research included interviews with twenty three people from Ministries, institutions and organisations related or influencing aspects of the National Information Policy. Extended research on Internet (EU and USA sites and search engines like Yahoo and Altavista), CD – ROM sources, journals and books in UK and in Greece was carried out.

The result of this research demonstrates that there is no co-ordinated approach to a Greek National Information Policy and that policies are lacking in some key areas. Recommendations for policy initiatives are made.

Acknowledgements

Grateful thanks to the following people:

My supervisor Charles Oppenheim for guidance and for reading this dissertation.

All the people who were interviewed and provided this dissertation with the related research. Especially, Mr. Bokos from the Department of Library and Archival Studies of the Ionion University, Mr. Karagiorgos from OTE and Mr. Kremitsas from IBM, for their help.

My father and my mother for their critical financial and moral support, my sister and my brother (he knows why).

My cousin Thanasis for using his printer (and a lot of his paper) and Delphine for typing...

Contents

	Page
Abstract	ii
Acknowledgements	iii
Contents	iv
1. Introduction	1
2. Information Policies (theoretical aspects)	
2.1 Defining Information Policy	3
2.2 Importance and implementation	7
2.3 Moore's Grid	12
3. General Background	
3.1 General facts and figures concerning Greece	17
3.2 Background of the National Infrastructure	17
3.3 Greek libraries	20
3.4 Library Networks	21
3.5 The Greek book trade	23
4. Greek law - A description	
4.1 Freedom of Information	24
4.2 Related Sources	24
4.3 Copyright (law 2121/1993) - Internet Home Page dispute	25
4.4 Telecommunications - Council of State confirms legality of sanctions against TV broadcaster for breach of broadcasting rules of ethics	26
4.5 Data Protection Act	27
4.6 The existing law for telecommunications (private TV, radio and television market regulations)	28
4.7 Analysis of the forthcoming law for the Digital Television	29
4.8 The copyright dispute between Greece and USA	30
5. National Documentation Centre	38
6. National Book Centre	
6.1 Principles and Philosophy	39
6.2 Brief description of activities during 1997 – 1998	40

7. Methodology	
7.1 The research objectives	46
7.2 Research methods	46
7.3 Description of interviews and questions	47
7.4 Primary and secondary data sources	51
7.5 Control of the research findings	51
8. Assessing the Situation of the Markets for Electronic Information Services in Greece based on relevant Study	52
9. Research results	
9.1 The description of the situation of the National Information Policy (NIP)	59
9.2 The organisations and institutions involved	63
9.3 The main related programs and actions	67
9.4 The influence of current political situation	73
9.5 The EU and US influence	75
9.6 The existence of a Green Paper or of relevant documents	77
9.7 The position of Greece in EU compared with other countries according to the subject	78
9.8 The development of a National Information Infrastructure and the 'Information Superhighway'	79
9.9 The proposition, solutions supported by future programs and recommendations	81
10. Conclusions	
10.1 Introduction	88
10.2 Moore's Matrix and Greece	90
11. Recommendations	
11.1 Following research needed	91
11.2 Ideas and actions of general content	91
11.3 International Policy	92
11.4 Education, Training and Public involvement (people at the centre)	93
11.5 Role of public and private sector	94
11.6 Institutions and organisations	95
11.7 New departments or organisations needed	96
11.8 Businesses and forthcoming developments	96
11.9 Information Infrastructure	98
11.10 Evolution of the current legislation	98
11.11 Environmental protection	99
11.12 Innovation	99
11.13 Human Rights and national information policy	100
11.14 Cultural Needs and Issues	100
11.15 Future Developments that need to be considered	101
References	106

Tables	
Table 1	111
Table 2	112
Table 3	113
Table 4	114
Table 5	115

Appendix - Glossary

Appendix - NDC and National Databases

Appendix - International Databases of NDC

Appendix – NDC Systems Function

Appendix - Basic Indicators

Appendix - Bibliological Library

Appendix - Overall Revenues

Appendix - Analysis of Revenues by Subject Area

Appendix – Barriers for Using Electronic Information Services

Appendix - Percentage of Distribution

1. Introduction

Greece is a good example of a developing country - active in EU, UNESCO and so on - which needs an information policy. This dissertation aims to examine and evaluate the Greek situation and the progress made in this field. I begin with a brief theoretical analysis of information policy, especially as it is implemented at a national level. This analysis will include definitions, several ideas and facts justifying the importance of a national information policy and the ways through which it is implemented. These theoretical aspects of the subject will be completed by a presentation of Moore's grid (information policy *matrix*).

Following that, there will be an attempt to give a background of information policy in Greece by analysing:

- some of the actions taken by the government. Its general attitude towards information issues are examined, as well as a general background,
- the relevant legislation, its provisions and problems,
- the background and the role of the National Documentation Centre (NDC, see Appendix - Glossary) and the National Book Centre and some important information regarding the Hellenic Organisation for Telecommunications (OTE).
- the more general influences affecting Greek information policy coming not only from the Parliament but also from the European Commission, the USA and the current political situation. In addition to the analysis of the issues above, there

will be descriptions of a current study (1995) concerning the information market in Greece.

This background will be followed by an analysis of:

Interviews with politicians, people related with the government actions, academics, relevant organisations and researchers.

The results will cover: the description of the situation of the National Information Policy (NIP) in Greece; the organisations and institutions involved and their main related programmes and actions; the influence of the current political situation in the development of a NIP; the existence of a Green Paper or of relevant documents; the position of Greece in EU compared with other countries according to the subject; the development of a National Information Infrastructure and the 'Information Superhighway'; the proposition, solutions supported by future programmes and recommendations.

The dissertation ends with conclusions and recommendations concerning Greek National Information Policy. Also, Moore's grid will be used in order to demonstrate how Greece performs compared to the rest of the countries of the European Union. I also make some personal observations and evaluations regarding the results of the research and the development of the current situation.

A national information policy is, arguably, required by every country, developing or developed, in order to ensure the harmonious implementation and operation of information resources, services and systems. Such a policy enables the co-ordination and compatibility of the overall national information system including the legislation regarding information provision and the implementation of new technical and information developments. In recent years, the subject of the National Information Infrastructure (NII) and Policy has been receiving, world-wide, great attention in both scholarly and trade publications as the issue has significant implications for the use of professional communication in education, business, industry and government (1).

2. Information Policies (theoretical aspects)

2.1 Defining Information Policy

There are many "definitions" of information policy. They are dependent upon how one defines information. According to Weingarten, information policy is "the set of all public laws, regulations, and policies that encourage, discourage, or regulate the creation, use, storage, and communication of information" (2). Rowlands summarises the many views of information policy to identify their common characteristics. Using Weingarten's view, Rowlands suggests "that the fundamental role of policy is to provide the legal and institutional frameworks within which formal information exchange can take place" (3). Rowlands also addresses Hernon and Relyea's view that there is no single information policy, but policies that address specific problems and issues that are often

contradictory. He argues, "The situation may be messy, but it is inevitable given that the practical realities of information policy are much to do with the art of compromise: there are neither 'good' nor 'bad' policies, but maybe there can be effective compromises between competing interests" (4). Furthermore, he cites Galvin's view of balance of competing goals and interests, and suggests that information policy "should be flexible, dynamic and responsive to changing circumstances....a key objective for information policy research might therefore lie in trying to set some kind of bounds and limits to that uncertainty" (5).

X
A critical point that should be considered while defining information policy, is the differentiation between information policy shaping events as well as responding S

X
to events; in other words, serving as both an independent variable and a dependent variable^A. For example, Burger defines information policy as "societal mechanisms used to control information, and the societal effects of applying those mechanisms" (6).

Rowlands proposes a three-level hierarchical model for information policy:

1. infrastructural policies which apply across society and affect the information sector both directly and indirectly;
2. horizontal information policies which apply to the entire information sector for particular applications such as export-control policies or data protection law; and
3. vertical information policies that apply to a specific part of the information sector for a particular application (7).

Rowlands suggests, some additional, useful definitions which can help in order to understand the nature of the problem: information is defined by its role (problem solving or mission - oriented); coverage (general or specialised); level; channel (systems, services, mass media or meetings); and accessibility (public, proprietary or classified information).

Moreover, Policy is a set of principles and strategies which guide a course of action for the achievement of a given goal. Policies may be developed at the organisational or institutional level or at the regional, national or international level and are embodied in the policy instruments (legal, professional and cultural) (8).

However, policy makers have experienced a lack of guidance because of the tendency, which they have themselves encouraged, to concentrate primarily on high technology production. There are two important points that should be mentioned: firstly, communications technology offers a new flexibility in the location of enterprises. Powerful organisations will no longer depend on any specific local standard, but they will be able to locate different functions in different places and integrate them through communications systems. Secondly, the information economy will cause the emergence of 'world cities' dominated by networks. These will create new developments in transport and communications infrastructure, not to mention the social aspect - structure (9).

As well as the issues stated above, information policy is concerned with the nature of the contexts within which data is transformed in useful information and knowledge. The characteristics of these procedure are multiple and complex.

Issues that arise include:

- ⇒ Different groups of experts involved play a major role on forming policies. At the same time, the impact of decisions regarding information policies and relevant events on other areas is crucial in terms of how, when and why this transformation from data to knowledge will take place.
- ⇒ Furthermore, there is a considerable interdependency of information policies made at very different levels of the political and social structure, from the local to the global (10). This interdependency largely affects the social aspect of information policies: for example, information for citizenship, which deals with very important matters like free public libraries, Internet access, and freedom of information.
- ⇒ Another vital characteristic is information protectionism. This term involves issues including data protection patent laws, censorship, national security, commercial secrecy and cultural identity. Their development can greatly influence the existence and nature of a national information policy.
- ⇒ Finally, there are two more significant issues. The first one is information for consumer choice: the role of an information policy in influencing freedom of the press, the mass media, universal access, public and private synergy and charged library services. The second one has to do with the economic influence of

information and in particular, information for competitive advantage. Amongst the policies influenced by this factor are technological developments, telecoms infrastructure, policies on intellectual property, and issues of competitive intelligence, business efficiency, etc (11).

2.2 Importance and implementation

The information market in Europe, and all over the world, is growing rapidly. A survey carried out by the Deutsche Gesellschaft fur Dokumentation shows that the European market for electronic information services grew by nearly 40% between 1992 and 1994, a growth rate which is likely to increase as more multimedia products become available (12).

In a global economy that is increasingly information intensive, almost everyone agrees that an advanced information infrastructure is the key to economic growth and value creation. The European and US economies are increasingly dependent upon the capture, manipulation, transmission and consumption of information (13).

The ongoing information revolution is expected to influence, if it is not already influencing, every aspect of life and information, whether it is work or leisure. Companies in all industrial sectors are using information technology to restructure their actions and policies so as to become globally competitive. Businesses are aiming to be a part of today's information economy and

tomorrow's knowledge economy. Customers are likely to buy knowledge-based products with more intelligence built into them. Businesses are also likely to build knowledge bases that will grow and evolve in order to help managers understand the usage of these new opportunities. The impact of the information revolution has been so significant that it has been suggested that some of the key US or European government economic indicators may not reflect the reality of the information-based economy (14).

Telecommunications and information are vital to the public welfare, national security, and competitiveness of all countries. Rapid technological advances being made in the telecommunications and information fields make it imperative that countries maintain effective national and international policies and programmes which will enable them to take advantage of current developments. So, there is a critical need for competent and effective telecommunications and information research and analysis at local, national and international level, leading to clearly defined and achievable information policies. Accepting the importance of (a national) information policy, its primary goals are likely to include the following components:

- Provision of relevant, reliable and current data at a reasonable cost to all groups in the country. This includes telecommunications, libraries, Internet providing and database producers.

-Development and evaluation of the existing national information system. Its development is based on the identification and correction of the existing deficiencies

-Ensuring support regarding information manpower, facilities and technologies through public and other forms of financing arrangements. This includes training people in information skills and informing about new technologies.

-Collaboration with international organisations and institutions, always bearing in mind the country's political, social and cultural specialities, tradition and priorities (15). However, for a national information policy to be implemented successfully, it must itself, contribute to the general aims of the country and its general manifestos and policies. At the same time, this success very much depends on the timing and the methods of its development and implementation.

Policy makers must always bear in mind the close relation of information policy with the development of other policies (i.e. educational policy). Furthermore, they need to take in account the interdependency of information policy and information technology. The whole evaluation and evolution of every information policy involves these procedures.

There are some key principles, which should be briefly stated, regarding policies or relevant initiatives and their effective implementation:

- the provision of Universal Access to a wide range of Services,
- the ensuring of Privacy and Security,

- the protection of Intellectual Property,
- the developing possibilities for different systems of Education and for Lifelong Learning, and
- the growth and evolution of Electronic Commerce.

Information Systems contain several basic ideas that determine the existence of information policies. For example, navigation tools used as to identify and exploit relevant data sources play a crucial role in the whole procedure. The same applies to user interfaces. The effective functioning of Information Systems, as well as information management, largely affects the level of relevance and redundancy for users while using information. Information management includes procedures such as: information handling, quality assurance, user education and effective system design.

Likewise, any attempt of implementation of an information policy is more likely to fail if it is not based on an understanding of:

1. The existing government information dissemination and resource management policy involving information technology, telecommunications and broadcasting policy international communications policy, intellectual property and computer regulation library and archival policy (16). As already mentioned, there is always the vital need to take into account the major national goals, the national information resources and the users needs and characteristics before any implementation actions are undertaken.

2. The integration of the information policy into the overall development policy, whether we are dealing with a whole country or just one organisation. The most important objectives are: effective linking between relation and integration, the definition of the place of information and services (in public and private sector), the provision of official guidance and the establishment of a basis for any future reviewing (17).
3. The existence of two more factors which are motivating new approaches and experiments in information policy: the coverage of media, technology and services and a widely accepted tendency that information policy has the potential to make a positive contribution to economic and social well being (18).

Finally, there are some financial aspects of information policy implementation that are worth considering. The success of raising the needed revenues in order to support the actions described above, highly depends on the sound demonstration and justification of an effective information policy and on the awareness of the relationship between the national development plan and the national budget (19).

The actual financing of the various information programmes can take place in two different ways:

- *Funds for capital investment* (e.g. information infrastructure or technology) usually representing a one - time financing which may be expected to lead to benefits in the future.
- *Funds for recurrent costs* to ensure sustained operation of a programme or service; these funds will have to be renewed regularly during the life of the programme or service (e.g. staff salaries, facility maintenance, equipment repair) (20).

The funds for implementation are sought from national sources (government, private sector enterprises, private sector non - profit institutions and revenues from information products and services) and external financial support (international agreements with other countries or (non)governmental organisations and joint ventures).

The ongoing operation, review and revision of the policy is bound to change as new facts emerge, and it has to be adapted to the current socio - economic developments.

2.3 Moore's Grid

In order to analyse the several policy issues raised, we can use a matrix first developed by Moore. It was first presented to the Workshop on the European Information Services Market in Luxembourg the 13th of December 1995 (21) and identifies three levels of policy (Industrial, Organisational, Social) and, at

each level, four elements that need to be considered (information technology, information markets, human resources, legislation and regulation). It would be very useful to analyse the structure and the ideas behind each level.

The information policy matrix

	Industrial	Organisational	Social
Information Technology			
Information Markets			
Human Resources			
Legislation and Regulation			
Information Engineering			

The industrial level deals with policies that shape the development of the information services sector. In this market, it is very difficult to distinguish business and professional users. This is due to the fact that multimedia products penetrate both domestic and consumer markets. The leaders in this field are the providers of financial and company information.

The organisation level including policies that influence the way that information is used inside organisations. In this context, effective use of information can contribute to increased productivity, improved quality, accelerated innovation and product development.

The social level is where policy issues are concerned with the ways in which information is used by people as part of their everyday lives. Thus, the nature of society will be largely altered and depended on the existing and forthcoming frameworks of policies.

At each level, four or five elements can be identified:

- information technology, determining how the technology is used (examining easy and fast access to data and networks, effective navigation tools, user-friendly systems and products, substantial training, universal access to telecommunications, high quality telecommunications services, social aspects and effects like health and education)
- information markets, concerning the exchange and sale of information services (considering the understanding of the market with its limitations, reliable and up-to-date statistics, consumer demand and behaviour, export opportunities, pricing strategies)
- human resources, regarding the development of new skills, abilities and forms of work like teleworking. It is necessary that the existing shortage of appropriately educated and trained staff is covered. There is a mutual influence between the

skills of information brokers and the development of new information technologies. At the same time, there is a need for ordinary people to participate in the existing developments.

- legislation and regulation, dealing with security and effective protection (analysing legal frameworks, patents, intellectual property, retention of archives and records, liability of information provision, establishing legal rights for citizens and society). Also, evaluating the access to government information and the exploitation of public information by the private sector (22).

Moore in some papers (23) included a fifth element:

- information engineering, referring to the improvement of the use and the management of information (exchange of information between information engineers and the research community, encouraging innovations).

At each of the levels and for each element, it is possible to identify one or more policy goals. The goals represent the outcomes which might be intended. Having established what the goals are, it becomes possible to identify a range of specific policy objectives which together contribute to the achievement of that particular goal.

However, the matter as a whole is complex as there are a number of dimensions that need to be considered. One of them is the different and sometimes conflicting objectives that exist in the national information policy of a country. In addition, some of these objectives or their parts, may be already covered by existing policies, programmes and actions. Other issues that should be

mentioned is the different interests that may influence a national information policy in a country: geographical position, political situation, economic development, influence of other countries and the role of the private sector and of independent institutions. Thus, there is a need to clarify and identify such facts before using and evaluating the overall situation through the Moore information policy matrix.

Finally, Moore's matrix provides a convenient method of comparing the developments of information policies in different countries, or for following the development of policy in one country over time.

3. General Background

3.1 General facts and figures concerning Greece (*Table 1*, see 'Tables' section, page 110)

During the last 20 years, the Greek economy has undergone important changes. These changes are directly associated with two major evolutions at the international level. The first is the shifting patterns of international competition, and the second is the integration of the country as a full member of the European Community. The main characteristic of these changes is the dramatic reduction of the GNP growth rates. During the period 1960-70, Greece was ranked second among all the OECD countries, by GNP growth. In comparison, using the same criterion, Greece was in the last position among the same countries during the 1980-90 period (24).

3.2 Background of the National Infrastructure (*Appendix Basic Indicators*, see Appendix with the same name)

Greek Telecommunication Organisation OTE is the major provider of telecommunication services (*Table 2*) and its infrastructure comprises of :

- The National Telephony Network
- The Maritime Communication Networks
- The satellite communication network
- The Hellascom point to point digital connection network, the Hellaspac packet switching network and the Integrated Services Digital Network (ISDN)

There are three mobile-telephony private companies (Panafon, Telestet and Cosmote), that provide complete mobile telephony services using however OTE's network, for connections with fixed telephones and international calls. Cosmote is OTE's subsidiary company. Its network implements DCS 1800 technology.

The first large network owner, that announced its intention to compete in the network market was the Greek Electricity Company (DEI). The Greek Electricity Network is the most extended network in Greece. It intends to set up optical cables along the Company's electricity network targeting the development of its own telecommunication network before the complete liberation of telecommunication system in Greece.

The Natural Gas Network, which is still under construction, seems to be the second that will be used for alternative telecommunication purposes, as there is already an optical cable and a mobile telephone network installed along the backbone of the gas-network.

The liberation of alternative telecommunication network gives the opportunity of by passing the OTE network using cable TV networks, satellite systems, added value networks as well as networks that will be developed using the existing infrastructure of Public Utility Companies.

The developments in the area of Satellite Networks are growing fast and soon the first satellite mobile telephone will be fully functioning, supported by the mobile telephony satellite system IRIDIUM. The start of the system's operation is scheduled for September 1998. Telestet, the mobile telephony private company, will implement the programme. The IRIDIUM system will be compatible with all existing systems and the connection with the satellite network will be established directly or via Telestet network (25).

With a turnover representing 2.6% of the Greek GNP in 1994, OTE is charged with the modernisation of the telecommunication sector. According to its business plan, it is going to spend for this reason more than 1.25 trillion drach in the period 1996-2000. The Telecommunication Development Plan of OTE, included in the Support Programme 1994-1999, follows the development strategy and its part of the Development Programme 1994-1998. The aims are: expansion of digital infrastructure in the whole country; digital transmission, multiplex switching; replacement of all analogue with digital technology; installation of digital telecommunication rings, either fibre optic or fibre optic and radiolinks; evaluation of PDH and SDH systems; no further use of copper cables for the local network and open network provision CCITT and ETSI standards (*Table 3*) (26).

3.3 Greek libraries

Using *Cultural statistics*, publication of the National Statistical Agency, and data derived from NDC, the total number of Public libraries is 682:

	Geographic location
Athens	138
Rest of Greece	544

	Thematic category
General	557
Special	95

	Legal status
Public	64
Municipal	406
Private	not included

Employed personnel	total 1 496
Staff with special studies in Librarianship	314
Staff without Graduate staff	443
Support staff	209
Non graduate staff	712
	548

	Book collection
Titles	6334658
Volumes	9035768

	Periodical collection
Titles	122257
Volumes	996809

The number of books and periodicals borrowed between public libraries is 6555 (interlibrary loan orders requested) of which 5315 were executed. These strikingly low figures demonstrate that there is a little co-operation between Greek libraries. Only 47 out of the 682 libraries declared that interlibrary loan is included their services. Document delivery by photocopy format is a more spread operation than interlibrary loan.

The classification systems used: DEWEY 144, UDC 27, LC 9, other 353, no classification system 149.

There has been a high rate of computerisation in Greek libraries in recent years (27). In 1993, NDC undertook the creation of the computerised National Network of Scientific Libraries, based on HERMES the host computer of NDC.

3.4 Library Networks

NDC took under its responsibility in 1993, the development of the National Network of Scientific Libraries (NNSL). The network was based on the operation of host HERMES and on the Union List of Periodicals on-line database SERI which is developed and updated also by NDC. The first function of NNSL concerns the on-line ordering of journal articles from those included in the collections of NNSL member Libraries. The system automatically detects and observes actions of orderings and produces detailed reports about the origin and destination of orders from one library to another. Currently, 64 libraries

spread all over the country are participating actively in the network. The total collection of these libraries covers more than 13,000 unique journal titles. Approximately, two new libraries are becoming members of NNSL every month (28).

From a relevant announcement (29) and from corresponding recent data:

- > The 172 libraries of database SERI are the most significant in the area of Research and Technology in Greece. Their collections represent the 80% of Total National Collection of R&T Journals,
- > They cover 19,162 unique journal titles representing 453,70 subscriptions,
- > The overlapping coefficient is 2,36 (average number of subscriptions per titles)
- > Approx. 12,000 of these journals are active (their collection is growing in at least one library of the network)
- > The annual cost for the Total National Collection is estimated in 6,6 billion drach.

3.5 The Greek book trade

During 1997 there was an increase of 10% Greek book sales (110 billion drch from 100 billion during 1996 and 80 billion during 1994). Some of the most important indicators regarding this field are:

- The book market expanded during the 90's as the private expenditures was increased 116%. These sales came mostly from the field of school books and encyclopaedias.
- The state expenditures on the book market grew to 15.5 billion drch (1997) from 11.1 billion (1994).
- According to UNESCO (30), in 1970 there were 2027 new titles, in 1993 4197 and in 1997 5364. However, compared to other EU countries (Italy, Denmark, Holland etc.), this increase is very limited. Each year, in Greece, five new titles per 10,000 people are published, while in Denmark the relevant numbers are 23 titles per 10,000 people and in Holland 22 titles per 10,000 people.
- The number of publishing houses is, compared to other European countries, large with small profits. 57.4% of the publishers publish less than 10 books per year.

4. Greek law - A description

4.1 Freedom of Information

This issue is mostly related with governments and their practice to disclose information about their workings, in cases when citizens must be fully informed about their actions. There are two broad approaches of these procedures: firstly, government decides what it shall release to the public and when (official secrecy); secondly is the Freedom of Information, where all government information is available to the public except in those cases where Government must justify, to an independent body, why it wishes to restrict access. Freedom of Information is an established concept in Greece (31) and it applies to all documents, whether written, typed, photographs, microfilm, machine readable records, video or audiotapes and so on. There are convincing arguments that open government actually leads to a better government (32).

4.2 Related Sources

The NOMOS law database (33), which was developed by the software house Intrasoftware and has been available since 1994. This is a full text database which can be accessed either online or via an X.25 connection and contains information on all legislation passed since the founding of the modern Greek state in 1836. In addition, it contains the text of ministerial decisions which under Greek law often have the status of legislation. It is hoped to provide Internet access to the database in the near future. The information comes from a variety of sources, though not the Ministry of Justice, which uses the NOMOS

product itself to find out about law. Some information comes directly from the High Courts and is available only in electronic form and not in print. This is the only database containing both statutes and court decisions in Greece and its producers consider it unlikely that the state will produce a rival version because of the \$7m investment required.

4.3 Copyright (law 2121/1993) - Internet Home Page dispute

Copyright is by its nature a compromise between the need to protect the rights of creators and the need to encourage the rapid and easy flow and dissemination of information. The way countries handle their copyright legislation can significantly affect the flow of information into and out of that country (34).

The Greek law is influenced by relevant EU copyright directives. It aims in the pro- protection of the copyright before implementing the punishments for its infringement. In order to achieve that, the law sets some standards like the use of devices or systems who allow the control of access or the use of special characteristics who enable the control of legality. Within the same reasoning, the decoding of coded transmissions is prohibited. At the same time, the police is forced to act in some cases of infringement (articles 59- 63).

There is an example that shows the application of the law for Internet: currently under judicial investigation, a new issue has arisen with regard to copyright on an Internet Home Page content. At the end of September, the U.S "Church of Scientology International" together with the U.K "Church of Scientology

Religious Education College” and the Danish “ New Era Publications, Int.” sent an extra-judicial notice to two Greek recipients, a Home Page owner and the Internet service provider hosting this page (“Hellenic Internet Users Association”, acronym : EEXI), asking them to withdraw copyright materials contained therein. The above organisations claimed that reproduction and dissemination of their intellectual works constituted copyright infringements punishable under the Hellenic Copyright Act (Law 2121/1993). The Home Page author, a journalist and former member of the Centre for Applied Philosophy (KEFE), the Greek branch of the above religious organisation, claimed his Home Page (w4u.eexi.gr/~antbos) contained only an index of information and press releases on the activities of the Church of Scientology all over the world. He also reported that the Athens First Instance Court ruled in its decision 7380/1996 that KEFE should be dissolved because of the exercise of activities opposed to its non profit character and to the Hellenic public order (the above decision being currently on appeal). The Hellenic Internet Users Association alleged that by virtue of the Code of practice for the provision of telecommunications services, it assumed only a technical role and in any case it had no authority to decide over content contained within any individual home page (35). However, there is still no outcome or decision regarding this case, yet.

4.4 Telecommunications - Council of State confirms legality of sanctions against TV broadcaster for breach of broadcasting rules of ethics

In mid-November 1997, the Hellenic Council of State confirmed the legality of a decision of the Minister of Press and Mass Media taken on the recommendation of the independent broadcasting regulator (National Council for Radio and Television-NCRT). The decision imposed severe administrative fines against a private broadcaster ("Antenna TV") for breach of professional rules of ethics. NCRT considered the way in which journalists last summer dealt with an incest case which had occurred in a provincial city and ordered sanctions against the TV station included a 100 million GRD administrative fine together with a 10 minutes temporary suspension of its programme for five consecutive days. According to the Council of State, this broadcast directly violated the Constitution that requires high quality of television programmes and respect for human dignity (36).

4.5 Data Protection Act

The difficult area in Data Protection Acts lies in fields such as financial, health and career information that an individual may wish to keep private but that society at large feels it needs access to in order to make informed judgements about the individual (37). In April 1997, the Greek Parliament passed the Data Protection Act. Designed to guarantee a basic level of privacy protection, the Act (law 2472/1997) is in line with EU Data Protection Directive 95/46/EC and the 1981 Convention of the Council of Europe. It establishes a Data Protection

Authority together with a set of guidelines, principles and rules relating to the use, processing, storage and export of personal data both in electronic and manual files. It also imposes registration and notification of electronic data processing and defines the licensing requirements that apply to the establishment of databases containing personal data and to the transfer of personal data overseas. Transborder data transmission from Greece to EU countries is unrestricted. Transmission of data to other countries requires a licence to be granted by the Data Protection Authority on the criterion of reciprocity.

Data subjects are entitled to access and correct the data relating to them and to claim compensation where loss or damage is suffered as a result of the use or disclosure of such data. Infringement of the legislation entails administrative, civil and penal liability (38). The new legislation needs will be complemented by sectoral rules (e.g. digital networks, ISDN) in view of the liberalisation of all communication services scheduled in Greece by 1 January 2001 and the competitive provision of liberalised services on alternative networks planned for the beginning of 1998 (39).

4.6 The existing law for telecommunications (private TV, radio and television market regulations)

In article 1 of the law is stated that the licensed media stations are responsible for the quality of their programmes, the objectivity of their news, the assurance

of democratic procedures and the advance of national culture. The most important aspects of the law 2328/1995 regulate issues concerning:

- The private television stations are divided in three categories of national, peripheral and local transmission. The National Television has the exclusive right to broadcast coded signals and provide the public with services of cable TV with the co-operation of the National Organisation of Telecommunication. It is forbidden to any station to infringe any copyright or intellectual property law by broadcasting works without permission of their owners (article 1).
- The National Council of Radio and Television. The Council is authorised to ask any evidence regarding the function, administration, staff, programme, network, technical structure, financial evidence and means, and realise relevant controls (article 1).
- The procedures and the criteria concerning the granting of licenses to private television enterprises are laid down (article 2).
- The principles of TV shows and advertisements. In article 3 the personal life and characteristics are protected. Also, there are special paragraphs for the protection of children and the correct use of the Greek language.
- Penalties, legal prosecutions and recall of existing licenses (article 4) (40).

4.7 Analysis of the forthcoming law for the Digital Television

This forthcoming law which will be voted in the Greek Parliament probably after the summer regulates all the paying television and radio services regardless of the method or the means which are used for their transmission. At the same

time, access to this field is assured to any interested parties. So, liberalisation is accepted by the Ministry of Press and the National Council of Radio and Television.

Concerning satellite paying television and related services, all interested parts can cooperate with National Television which does not have the exclusive right to exploit the coded - digitised satellite transmission. However, National Television will keep a special role and will be active in the new technologies by introducing a cooperative enterprise in which other organisations will be able to participate.

It must be noted that one enterprise can acquire only one licence for the related services. The owners of the enterprise can be activated in more than one enterprise acting in the digital television field. The licences will be given to enterprises from the EU only.

The owner of a licence will be obliged to pay 10 million drch for each channel chosen from those offered ,and an annual payment (0,75% of the gross earnings). Also, every station will be obliged to keep 20% of its total time of transmission for Greek character broadcasts. The overall control of these issues is handed to the National Council of Television and Radio and to the Ministry of Press (41).

4.8 The copyright dispute between Greece and USA

The first sign that there was an important copyright problem with local TV stations in Greece was reported in the Greek press during May 1998, when the Ministry of Press decided to close down twenty stations which have not submitted the needed papers for a licence (42).

The following days the USA, through its representative in Greece, set a deadline for Greece to solve the problem: several local stations broadcasts a wide range of shows (mostly from Hollywood and USA) without paying any fees to their authors (43). The Prime Minister and the Ministry of Press launched a report to solve the issue. The most important points of this report are:

- There has already started an overall attempt to provide all legal stations with licences proving their well function and their respect to laws and, especially, those of copyright and intellectual property. This is scheduled to be concluded until the end of 1998.
- Creation and launch of an intellectual property database in the Ministry of Press to cover all radio and television stations.
- Initiative of the National Council for Radio and Television which set penalties for 13 peripheral stations for copyright infringement. This council is, currently, further supported
- Involvement of district authorities (44) in this case and, generally, initiatives from the judicial system so that the existing copyright laws are implemented.
- Control, also, in all public administration for proper use of software (45).

However, the situation in this field is chaotic all over the country, especially regarding telepiracy (copyright infringements and illegal broadcasting even through army and police channels) and the licences for the stations. This is the main reason why, despite the development of Greece in this field the last years acknowledged by the USA, the issue was transferred to the World Trade Organisation.

At the same time, the Ministry of Telecommunications and the National Organisation for Telecommunications decided to invest 17 billion drch for systems protecting the broadcasting standards (46). The whole issue had a positive result for Greece in the World Trade Organisation as the USA and the EU noted the important efforts on behalf of the Greek government (47).

5. National Documentation Centre

The National Documentation Centre (NDC) is an organisation for the provision of electronic services, belonging to the *National Institution of Research*. It is managed by the *Scientific Board* and supervised by the *Ministry of Development*.

The wide range of national and international programmes, the various information sources and the technical support give to the NDC the following role: it is the centre of the flow of scientific and technological information in Greece. The number of researchers and scientists working in this organisation is 65.

The NDC was created in 1980 by the Greek State with the collaboration of the United Nations Development Programme /UNESCO. After a few years the first on-line services were built, as well as the access to over more than 1,000 international databases. A special software was developed enabling the introduction of information technology in libraries. At the same time five Focused Documentation Points were created around the country (in the universities of Thrace, Ioannina, Patra, Thessaloniki and Crete). The NDC has the role of providing services in electronic form regarding, mostly, science and technology. Its primary goal is the development of a **National Information System** that will cover:

- the information needs of scientists, industry and market.
- boost the use of electronic services
- connect research with production

The basic foundation for the completion of this **System** is the Host - **Hermes**. HERMES, the new NDC's open access information system - host computer, has been recently installed and developed. It is a modern and unique in our country hosting system for databases, which can host tens of millions of information and can provide them simultaneously to tens of users within a response time of seconds (48). This system provides to the Greek as well the international scientific community, the industry and the public sector, access to Greek databases (*Appendix – NDC National Databases*) through data transfer networks (HELLSPAC, FORTHNET, ARIADNE and Internet) (*Appendix - NDC Systems Function*).

Greek databases and information banks for science and technology are being developed hosted together with international databases in HERMES (*Appendix- NDC International Databases*). HERMES is connected to other international Hosts (Gateway) in order to provide to every Greek user access to on-line databases which are available in other Hosts (e.g. DIMDI - 85 databases, ECHO -39 databases) (*Table 4*). This way the greater possible coverage of their information needs in the field of the biomedical sciences and European Union subjects is succeeded.

The connection to HERMES requires a contract between the user and NDC. The user must send to NDC two copies after having filled and signed them. One

copy will be returned, signed by NDC, together with the personal code and information package.

Retrieval of information on Hermes is based on:

- ⇒ Easy Access To Information Services which is a friendly graphic tool working on windows environment
- ⇒ Common Command Language
- ⇒ The Internet

The NDC is currently taking information from 1,300 databases world-wide, based on 11 different Hosts, with 300,000,000 publications which cover a major part of the universal intellectual production of science and technology. Its different services are used every year by more than 10,000 users through out Greece.

One of the European Community programmes that helps NDC to provide better services is **CORDIS** (Community Research and Development Information Service). **CORDIS** was created in order to gather and distribute data regarding all the scientific researches and activities taking place in the European Union (EU). It includes ten databases containing over 180,000 entries.

The effective function and the support of libraries is also one of the main interests of NDC. This is the reason why the NDC has organised, promoted and is, currently, implementing - with considerable success- a **National Network of Scientific and Technological Libraries**. This programme was launched, as a

pilot, in 1994 with four libraries. Because of the lack of an established Library Network as well as the lack of systematic procedures for co-operation between Libraries in Greece, NDC undertook the initiative to create and develop the Hellenic Network of Scientific and Technological Libraries. A pilot phase with six libraries started on March 1994 and lasted 9 months. The number of libraries participating in the network has been raised to 40 covering all the country and equal number of Institutions, hospitals, universities and companies. The whole system is based on the Host computer HERMES of NDC, the installation of which was funded by structural funds, the online Union Catalogue of Periodicals of Hellenic S&T Libraries, which covers the collection of 137 libraries consisted of 20.000 titles and 45.000 subscriptions. Today, it is used by 85 libraries (public, academic and special) in Greece and Cyprus and offers features like on-line order. This programme acts as a good example of the development of a national information policy, as it aims to link all the Greek public or private libraries and, in the long term, with international networks.

One other programme that is about to be launched is an **Electronic Library** which will be available to Universities, Research Institutes, Public and Private Domain, Industry Field and Enterprises. It is planned that it will include:

- a collection with scientific articles , periodicals, grey literature (studies, surveys, reports), publications of international organisations, proceedings of conferences (which, currently, no library covers)

- a coverage of titles that are now missing from the National Collection of Periodicals and keep an archive of interrupted Series in order to realise and complete the national collection
- an access, through WWW, to distant information sources with digitised material
- provision of access to remote users
- provision of the above services to other countries in the Balkans, the Mediterranean and the Middle East.

Another activity of the NDC that should be mentioned is its involvement in the field of **Multimedia** and **Geographical Information Systems (GIS)**. Their developing importance in the field of electronic services urges the NDC to support their use from organisations or experts in national level. Thus, the NDC informs and attempts to implement a national policy emerging from the use and the special characteristics of these activities. In the same field but at European level, the goal is to continue participating in the development of **Multimedia** and **GIS**. The relevant information sources include technical as well as political actions (**INFO2000**, **GI2000**, **Telematics Applications Programme**, **ESPRIT**). The **Greek Centre of Redistribution - Innovation**, which is, also, situated and supported by the facilities of NDC, is one of the 52 **European Centres** cooperating for the promotion of the competitiveness between the European enterprises. This is possible through the wide distribution of research results in order to achieve a good collaboration with the industry and enterprises field. The

key word in this effort is *innovation* in: scientific activities, support for moving to and adapting new technologies, seminars, promotion and evaluation of special publications, electronic services for new corporations and suggestions.

In this direction also aims another European activity, the **MIDAS - NET** (**Multimedia Information Demonstration and Support**) created in order to facilitate the development and the completion of the **INFO2000** programme. It includes 23 centres in which 110 European organisations and 17 countries are participating (49).

Finally, TRAIN-NFP is a task within the NAP project. The aim of the task is to train University Professors in order to incorporate in their regular curricula issues on Electronic Information Services and to overcome the Electronic information illiteracy of the University Students. NDC has organised 6 seminars of 4 days duration each, addressed exclusively to University Professors. To date, 120 University Professors have attended the seminars and the first multiplication effects have appeared (50, 51).

6. The National Book Centre

6.1 Principles and Philosophy

The National Book Centre (NBC) is a legal entity of public benefit founded by the Ministry of Culture in December 1994. It began operation in June 1995 with the aim of planning and implementing a national policy on books and reading. The NBC is an independent organisation which expresses the philosophy of a modern policy on books, and which follows and records developments in the field. It provides systematic information together with technical and academic support for all those connected with books.

The NBC's policy aims to highlight the multiple dynamics of books as a means of promoting ideas and discussion, as a cultural nucleus that can cater for informational, educational and communicative needs, and wide-ranging cultural developments. Furthermore, it aims to widen the concept of books in the social consciousness so as to include all categories (from scientific to literary) and to promote their wider and immediate use as a source of knowledge, information, education and recreation.

The NBC is active in four areas:

Research, studies, archives, so as to create a basic infrastructure of knowledge concerning the field and, to this end, it closely observes developing trends through the "Book Observatory" which draws on economic, statistical and quality data.

Structural support is also provided for professionals in the field (provision of information, technical support, common programmes, training etc.) in order to take full advantage of the opportunities for modernisation that exist on both a national and European level.

Rationalising of bureaucratic processes and the creation of a single policy frame-work for books and reading Finally, there are some *further activities* that should be mentioned: campaigns, programmes, publications, printed matter, events with the aim of spreading reading to the wider public, with particular emphasis on younger age-groups.

The budget of 1998 was 450 million drch. and the staff occupied includes fourteen head members and twenty cooperators.

6.2 Brief description of activities during 1997 - 1998

BOOK MONITORING UNIT

During 1997, the Book Monitoring Unit monitored developments in the field of books through the gradual creation of a complete system of statistical and economic parameters and the processing of operational plans and programme proposals. Several bodies took part in its operation using teams of experts.

- 1.The Hellenic Federation of Publishers and Booksellers (P.O.E.B.)
- 2.The Association of Booksellers and Stationers of Athens and Suburbs.
- 3.The Association of Booksellers and Stationers of Thessaloniki.

- 4.The Association of Booksellers and Publishers of Piraeus.
- 5.The Publishers and Booksellers Association of Athens.
- 6.Book Publishers Association.
- 7.The Publishers Association of Northern Greece.

1997 saw the updating of its Web Site (52) with the results of its research programmes. In order to complete the information system, a full series of statistical and economic parameters was created for monitoring developments in the field of books (size of the book market, state expenditure on books, imports, exports, consumer price index, geographic distribution of publishers and bookshops, financial indices). These data formed the basis for the development of operational plans-proposals for national and Community programmes; the most important being those relating to the creation of an electronic data base of books in circulation ("BIBLIO.NET") and the computerisation and networking of bookshops and publishers. This catalogue of books in print will be created by a company in which the NBC has 60% ownership. The other 40% is owned by the fourteen largest publishing houses of the country. The plan includes the publication of a CD-ROM four times a year starting from April 1999. At the same time, the formulation and systematic presentation of indices relating to the book market will continue and be supplemented with indices such as: consumption by Greek households and state expenditure as a percentage of total expenditure on culture and of GNP, growth in production, international comparisons.

A SINGLE FRAMEWORK FOR IMPLEMENTING POLICY ON BOOKS AND READING

Acting on the initiative of the Minister of Culture, Mr Venizelos, the NBC created, in the first phase, a database relating to the expenditure on books and reading throughout all services in the public sector, with the aim of working out a "Single Framework for Implementing Policy on Books and Reading". In the first half of 1998, the bodies and services involved were called upon to supply their data and views so as to create a two-way system of communication and common constituents which will eventually lead to the adoption of a Single Framework for Implementing Policy and a Single Code of Practice.

THE NATIONAL BIBLIOGRAPHY IN PRINTED AND ELECTRONIC FORM

Following an agreement with the National Library of Greece and the Hellenic Federation of Publishers and Booksellers, the NBC has undertaken the publication of the National Bibliography, in printed and electronic form, with the aim of covering a large gap in bibliographical information. In the first quarter of 1998, the volume on the 1994 National Bibliography was published in printed form. Similarly, by the end of 1998, the 1988-1996 National Bibliography will be available on CD-ROM and will comprise some 43,000 titles.

BIBLIOLOGICAL LIBRARY (*Appendix - Bibliological Library*)

The Bibliological Library, a model academic and informative tool, covers topics and activities relating to books. Because of its specialised and mainly foreign collection, it can serve a wide public both in Greece and abroad as it is an English language service (Table- sample). It operates on a loan system and is continually expanding its "hardware" and "software" collection. New databases will be added to the collection this year, providing access to even more specialised bibliographical information. With its aim to provide interested parties with the opportunity for the research and study of bibliological materials, it will keep up its contacts with public and private libraries in order to locate and record such materials. The catalogue of the Bibliological Library is included in the NBC's Web-site (53) and there will be a presentation of all the services offered by the Library.

THE PROMOTION OF GREEK BOOKS ABROAD

The NBC continues its programme for promoting Greek books abroad through a series of initiatives which have as their aim: on the one hand, the understanding of the way the foreign book market operates, the investigation of the factors determining this operation and their evaluation in relation to the promotion of Greek books and, on the other, an exchange of views on the factors involved in the process of writing, publishing, distribution and promotion of books in Greece and elsewhere, with the aim of creating conditions conducive to the furthering of working relationships. Following the successful event organised in

September 1997, during which British, French, German and Italian publishers and journalists had the opportunity to meet with Greek publishers and authors, the NBC has organised two 1998 events which will endeavour to stimulate the interest of the Spanish-speaking publishing world and the Spanish-speaking public in Greek books.

The process of promoting Greek book production abroad is difficult because of the lack of information available to foreign publishers, distributors and literary critics relating to the activity of Greek authors and publishers. This is a result of the inability of those directly concerned abroad to come into contact with Greek texts in the original. It is also due to inadequate distribution of translated works of Greek authors and the lack of any publication that would be distributed abroad and that would present the latest Greek books. The NBC is at present in the process of studying the format of similar booklets published by other European countries. A policy of funding translations contributes substantially to the distribution of one country's books in another by providing the necessary incentives to publishers and translators. Particular emphasis is given to the policies implemented by countries with languages of limited diffusion, such as Greece, Italy, Portugal, and those of various Balkan countries. The promotion of Greek books in the Balkans constitutes another goal of the NBC. To this end, provision will be made over the next two years, to carry a series of activities. The first of them will be to organise a Workshop for Balkan Authors and

Translators in Alexandroupoli at the end of August and beginning of September
1998.

7. Methodology

7.1 The research objectives

The objective of the research is four - fold: a) to give an overview of the current situation regarding the issue of a national information policy in Greece; b) to establish a profile of the organisations and people that are involved with it; c) to assess their level of awareness about the need of an information policy and its implementation; and d) to recommend ideas in order to facilitate its implementation. I decided to undertake interviews with many individuals who affect, or are influenced by a national information policy. These include people such as:

- government members and politicians from different parties
- academics
- relevant civil servants
- managers and members of relevant institutions

7.2 Research methods

Although desk research forms a considerable part of the dissertation, I also used information and results generated from interviews, direct observations (behaviours, environmental conditions) and personal knowledge and experience. However, it is very important, when dealing with interviews, to bear in mind the position, the background and the attitude of the people interviewed. It is obvious that every person that cooperated had different information and ideas to add and

offer, in terms of quantity and quality. Using these procedures, I was able to obtain some useful results from each person interviewed.

7.3 Description of interviews and questions

The range of people selected for interviews is wide but there is an important fact that must be taken into consideration. A limited group of people in Greece are familiar with the concepts of national information policy, information society and so on. All the interviews were conducted on a one - on - one (one only contacted by e - mail) basis using specific questions (presented below) but, occasionally, included more detailed ones depending on the person interviewed.

The basic questions used were:

A) What do you understand by the term of National Information Policy?

B) Do you think Greece has one? If no do you think it should have one and why?

1. Who is responsible for Greece's national information policy? How do they actually exercise that responsibility?
2. Who is implementing the main components of the NIP and with what means?
3. What is the role of Government and National Institutions? What governmental departments are primarily involved in developing a NIP?
4. What is the effect of the current political situation on the development of the NIP?
5. Is there a direct or indirect influence of the EU on the NIP?
6. Is the US influencing the Greek NIP in any direct way?

7. Is the importance of a national information policy accepted? Do the political parties accept it?

8. Are the people involved capable of taking the right steps?

9. Have there been or will there be any Green Paper on how achieve the Information Society?

10. What is the progress on the development of a National Information Infrastructure?

11. How would you rate Greece compared to other EU countries in terms of awareness and commitment to NIP?

12. Are policies in place or planned for?

Assisting information industry - Improving telecommunications facilities -
Getting schools connected to Internet - Public libraries - Universities -
Government information

13. What are the long term future plans?

The structure and the nature of the questions were designed to:

- show how familiar is the interviewee with terms like national information policy, information society and their importance,
- obtain information about the influence of the political situation, the EU and the USA. Each respondent presents different facts about these factors depending on his or her working place and involvement with the issue,
- discovering the policies in place or planned for developing and implementing a national information policy in all society levels like government, education, telecommunication and so on.

The interviews were conducted in the Greek language as this was the native language for the interviewer and the respondents. The interviews were conducted from 15/6/1998 until 9/7/1998. The persons interviewed were notified by phone, mail or personal communication. A list of these persons follows according to the chronological order that were interviewed:

1. Mr. Bokos - Ionion University, Department of Information and Library Studies.
(Former Manager of the National Library)
2. Dr. Manesi. - Ionion University, Department of Information and Library Studies.
3. Dr. Kaltsonis - Legal Advisor of the Greek Communist Party.
4. Mr. Gouliamos - Advisor of Minister of Press and Mass Media
5. Mr. Smernas - Advisor of the General Secretariat (European Issues)
6. Dr. Loukis , Advisor and Special Scientist of the Ministry of Presidency -
Department for the development of Information and Information Systems
7. Mr. Gouskos - Special Advisor of the Ministry of Economy, General Secretariat
of Information Systems
8. Mrs. Kolliva - Professor of the Ionion University, Department of Library and
Information Studies (former General Manager of the General State Archives)
9. Mr. Bouboukas - Head Manager of the National Documentation Centre
10. Mr. Kampouropoulos - Special Advisor of the National Book Centre
11. Mrs. Dimopoulou - Departmental Manager of the National Library

- 12.Mr. Karagiorgos - Advisor of the Head Manager of the Hellenic Organisation
for Telecommunications
- 13.Dr. Spithas - Supervisor of the Direction of Planning and Programmeming of the
General Secretariat of Research and Technology of the Ministry of Development
- 14.Mr. Papakonstantinou - Special Advisor of the Prime Minister for issues of
Information Society.
- 15.Mr. Papastefanakis - Senior Advisor of the Ministry of Transport and
Communications
- 16.Mr. Panagiotopoulos - Ministry of Presidency, General Director of 'Kleisthenis'.
- 17.Mr. Dafermos - Ministry of Justice, President of the Independent Office
(Personal Data Protection)
- 18.Mrs. Xiniadou - Advisor of the Ministry of Culture
- 19.Mr. Tsapelas - Advisor of the Ministry of National Financing
- 20.Mr. Zaimis - General Director of the Federation of Hellenic Information
Technology Enterprises
- 21.Ministry of Education - Mr. Karantinos Special Advisor, Mr. Ioannidis
Cooperator of the department of the European Funded Action Plans.
- 22.Mrs. Tsouma - Member of the General Secretariat for the Support and
Coordination of Information Technology
- 23.Mr. Papapavlou - EU DG 13.

7.4 Primary and secondary data sources

In order to generate an analysis of the different issues of this dissertation, primary and secondary data sources were used:

- ⇒ books and journals (related with national information policies) traced in the library of Loughborough University or elsewhere,
- ⇒ CD-ROMs (related with information and library science) used in the facilities of the same library (LISA, Index to Theses in UK, ABI)
- ⇒ special publications from organisations examined, studies of the previous or current situation in Greece, reports, leaflets.
- ⇒ Internet (searching machines - Yahoo, Altavista, Metacrawler and databases - Cordis, Europa) proved to be the most useful source for information concerning policies, organisations, EU databases and reports and so on.

The major part of the searches was made from 25/4/1998 until 10/6/1998. The search terms used were: (Greek) national information policy, European information policy, information society, Greek laws, (national) information infrastructure.

7.5 Control of the research findings

On the basis of the purpose of the study and the nature of the interview material, I had to ensure the reliability and validity of the interviews. Some examples of these efforts were: asking critical questions more than once and from different points of view; adopting the basic questions depending on the person

interviewed; and checking the notes of the interviewer with the help of the interviewee by briefly restating them and adding possible gaps.

8. Assessing the Situation of the Markets for Electronic Information Services in Greece based on relevant Study

The markets for electronic information services (EIS) can be characterised by explosive growth, dramatic structural change and an intensive impact upon the competitiveness of companies and national economies as well as upon lifestyles and culture. Electronic information services are an important instrument for exploring new opportunities for research, new products and services, new co-operation partners.

In 1989, the European Commission initiated the so-called "EC-Host-Surveys" to raise market transparency for electronic information services for professional purposes. After four EC-Host-Surveys were completed the methodology was revised and further developed in 1994. The MSSTUDY (= Member States' Study) was carried out on the basis of this common methodology in 1995 in 17 countries of the European Economic Area (15 countries of the European Union plus Norway and Iceland). Not only the supply side was surveyed in all countries but also the demand side for different important user groups (in 15 countries) and the most important factors of the national information infrastructure (e.g. R&D, technical infrastructure, libraries and other relevant institutions) including national information policy. The reference period was the business year 1994 (54).

A letter in the Journal of Information Science (55) questioned the methods of selecting companies in National European markets and issues regarding the treatment of revenues. There was a reply (56) explaining the views of the authors of this report.

The research was based on the following methods:

- **Questionnaires**

The Quantitative research for the supply and demand side was based on questionnaires according to each target group.

- **Interviews**

Interviews played a significant role in order to elaborate the results of questionnaires. Key - Persons as well as competitors in every sector of suppliers interviewed, offered important progress to the study.

- **Studies or Articles, Inventories, Statistics**

Desk - research was the third technique used in order to get closer to the market.

Suppliers of Online Electronic Information Services

1. Suppliers of Real time Information Services:

- Suppliers of Financial Information and Newswire agencies

2. Suppliers of Retrospective databases offering

- Credit information, Scientific/Technical/Medical information, Videotex services and others.

Suppliers of Offline Electronic Information Services

3. CD - ROM Producers/Distributors

4. Distributors of other offline media

Among the 64 suppliers identified, thirty are offering online electronic services and the rest off-line in form of CD - ROM activities (production and distribution). The main part of the respondents (70%) are employing up to 30 full - time employees. The rest (30%) employ more than 50 and up to 500 employees in all departments, including those that are not related to electronic information services. Respondents are also representing 33% of the total population for the supply side.

As a result of the data gathered we have the total Electronic Information Market revenues in Greece, a market that grows in a fast rate, which can be estimated in **64,85 MECU** for 1994. In this figure are included both Revenues of Domestic Suppliers from Domestic Use, plus Revenues of Domestic Suppliers from External Use (revenues from services offered abroad from Greece). The major part of these revenues **50,33 MECU** is concentrated to companies or organisations classified as Hosts retrospective Suppliers. Internet Providers and E - mail services providers are the second most important showing revenues of **8,33 MECU**. Newswire agencies, credit information etc., denoted as Hosts real - time, present **4,76 MECU**. The CD- ROM market revenues are estimated as **3,12 MECU**.

- The revenues according to subject area could be described as following:
Scientific/Technical/Medical information collect 35.6% of total revenues that is **23,06 MECU**.
- A large part of revenues (23.6%) concerns legal information that raises up to **15,32 MECU**.
- Government information and political news are responsible for the 16.2% of the total revenues and **10,52 MECU**.
- Finance/Stock exchange/Banking collects 7.8% of total revenues and **5,03 MECU**.
- All other subject areas attract under **2 MECU** each (*Appendices – Overall Revenues, Analysis of Revenues by Subject Area*).

Based on the results of the research, some ratios that characterise the Greek Electronic Information Market, can be conducted.

Export Ratios showing revenues from Exported Services or Products with respect to Total Market Revenues is 25.6%.

Import Ratios showing cost from use of Foreign services or Products with respect to Total Market Revenues is 23.2%.

Export Ratios of Domestic Suppliers showing revenues from Exported Services or Products with respect to revenues from Domestic Use of Services and Products is 25%.

Total Expenditures of Greek suppliers of Electronic Information Services are estimated up to **58 MECU**. Categorising Costs, it becomes apparent that the major part 50.5% is Staff Costs. The next category is Technical Operations showing 17.4% of Total Costs. Following these is Investment Expenditures (11.8%), Sales/Marketing Activities (8.5%), Data Gathering/Processing (8.5%) and User service training (3.2%).

The estimated number of full - time employees in organisations /companies offering Electronic Information Services is 1500. 956 of them work for Hosts, 90 for Real - Time, 36 for Videotex Services, about 100 in Electronic Mail Services, 105 for CD- ROM producers and 80 for other Suppliers. The most significant part of them involves Technical and, then, employees for Sales/Marketing Activities, Data Gathering/Processing and Management/Administration.

92% of the suppliers are based in Athens and the wider territory of the capital. About 5% are located in Thessaloniki and 3% in the rest of Greece. The main part of revenues, 80%, comes from the domestic market and only 20% from abroad (10% EU, 10% from other countries). The CD - ROM market could be expanded in the rest of the world with multilingual titles concerning Greek culture. This is the main focus points of Greek multimedia developers.

In terms of revenue and turnover, two or three companies hold the 80% of the total EIS market. However, more than sixty companies currently active in related markets are entering the field covering sectors like multimedia, Internet services, training.

Furthermore, fields like culture and tourism, is considered the most potential sector in the Greek EIS Market. It is not by chance that the first multimedia CD-ROM is concentrated in these two fields. On the other hand, the shortage of computerised data, the small market size in combination with the restricted usage of Greek language (11 million inhabitants plus around 7 millions Greek speaking population in all five continents), are the main weak points. Obviously, the translation of the content to one or more language for products addressing to external markets, raises the cost of product/services development and the risk of cost non recovery.

Electronic information brokering in Greece is not large although there are nine relevant entries in the I'M GUIDE Catalogue. These companies (90%) belong to the private sector. Their total revenue is **2 MECU** of which **1,8 MECU** are expenditure. The bank sector, however, is more active with revenues of **20 MECU** and **1.5 MECU** expenditures for electronic services. This imbalance is resulting from the technological development of the relevant departments' infrastructure, regarding mechanisms and human resources.

Potential users indicated printed media as the most common channel for information; 47% use them more than 50% of the time as a source of information. The second most important source of information seems to be internal or external online information services as 41% of the respondents in the relevant survey use them more than 50% of the time. Significant use of CD - ROM as information source was indicated too, 47% of the respondents use this source less than 50% but more than 10%. Finally, personal contacts are used more than 50% by 29% of the respondents. Also, 41% indicated their need in STM information.

Budget reasons are stated as the most important barrier of using EIS by 50% of the respondents. The second most important is the lack of experienced staff. Technical barriers, lack of user friendliness or the language use do not seem to be so important (*Appendix – Barriers of Using Electronic Information Services*).

The low level of usage forces the Greek suppliers (and sometimes the foreign) to decrease prices of products/services in order to enter themselves in the Greek EIS Market. At the same time, the risk of copyright violation, leads suppliers to adapt reasonable prices (e.g. OTE) in order to make customers prefer legal titles. Prices of network services are lower than other EU countries, especially for Internet connection. Indicative prices for Internet access are 40 ECU per month for two hours connection daily.

9. Research results

9.1 The description of the situation of the National Information Policy (NIP)

Greece does not have one solid and planned NIP but different parts. A NIP includes the surveys, studies, laws and the policy of the public and private administration towards information. There are many difficulties with the tracing and evaluation of the government position because of these problems [ALL].

These parts have taken the form of investment in information technology infrastructure, introducing appropriate regulation for telecommunications and digital TV, and launching a broad public debate through a number of instruments (a Communication Forum, a draft Action plan) [23] (numbers in square brackets respond to the list of people in pages 49 to 50).

This sectional information policy has financial and organisational implications. For example, in the mass media, a very important component of a NIP there is a monopoly from certain groups, leading to a constant limiting of the ideas and culture of the Greek society [3]. However, it should be mentioned that during 1998 the rate of development of the Greek information market has grown 20% (highest rate for the last five years). The last three years this rate was over 15%. The most important reasons are: the sales to banks and private sector (60%); the major public investments in information technology and systems (100 billion drach for 1998-1999); and the rapid growth of Internet services (200 enterprises for 1998) (57) (*Appendix – Percentage of Distribution*).

The Ministry of Press and Mass Media has in the last two years developed its own Information Policy. The most important step was the creation of General Secretariat of Information. This governmental office is responsible for informing the Greek and international society about the development of different policies (information, cultural, foreign and so on) through:

1. Strategic advertisement and promotion of the country through the 33 media offices around the world.
2. Active participation in all the international Fora and organisations (e.g. Council of Europe). This try started with the 5th European Ministerial Conference on Mass Media Policy (The Information Society) held in Thessaloniki, Greece, December 1997.
3. A national and international Policy of Communication with the public [4-5].

In Greece, every Ministry has developed a kind of independent policy and programmes. There is little co-operation (e.g. the Ministry of Communication and Telecommunications is preparing the law for the Digital TV in co-operation with the Ministry of Press).

The Ministry of Presidency is trying to develop an information policy in the area of public administration but, until now, there was no strategic development of this policy. As the public administration is catalytic in Greece, the function of this Ministry is very important: its main goal is the management of the public administration through programmes. During 1997, the Ministry of Presidency

asked for studies from all other ministries explaining their development, and now is concerned with their analysis [6].

There was an attempt to connect all the existing sectoral policies through the creation of a Government Committee, which is concerned with the Information Society. This Committee, comprising of the Prime Minister and four Ministers, has given some general directions related to this issue but not something more complete as to be implemented as a single policy [14]. In addition, the creation of information technology units in all Ministries during 1998 was decided (58).

On the other hand, the development of the relevant laws is very significant and represents an excellent EU example [9]. In order to maintain the country in this level of legislation, it is vital to keep up to date with the related evolution and modernise the existing laws when needed, or create new ones [ALL].

The way the people think is the most important factor. This can only derive and change through the education system which, up till now, offers little about the handling of information or the new technologies [ALL].

The NBC responsible to the Ministry of Culture for national book policy, finds that the existing laws and actions are in a primitive level and only cover some of the basic current information issues like information handling and dissemination, copyright and intellectual property [10].

Apart from that, the National Library has a very limited influence on the NIP of Greece. Inside the institution there are no e - mail or Internet facilities and, generally, the situation is bad as even the system selected for automation ('Adlib') has never worked properly. All the past and current governments never really helped the development of the N.L. although it is responsible for storing and organising everything that is published in the country. At present, the limited staff is dealing with the data from 1996. In theory, the N.L. is responsible also for all the public libraries in the country. However, most of them tend to be autonomous and some of them (in universities) are in a very good position. Sometimes, it seems that even though Greece started its try towards the Information Society later than other countries, it did not manage to avoid some mistakes [11].

The problem is that in Greece, the number of users familiar with the new technologies is limited. The services and the investments of the Hellenic Organisation for Telecommunications (OTE) and the public administration are bound to cover the existing needs but also aim to cause the expansion of the national Information Market [12].

The function of the public administration is based on reproducing and storing the same data for different purposes and this is one of the main issues to be solved

through a single N.I.P. Very few people seem to be interested in its history, and how they are going to learn from it [8].

All ministries and governmental institutions have work and projects to present, but the amount of their work is not always the one expected. But this is only natural when:

- The Committee for the Information Society which was introduced during 1997 had no budget or serious support approved [14].
- There is a delay of using the funding provided by the EU and a serious problem concerning the prevailing ideas in the public administration and enterprises where the staff or members are not, some times, willing to adapt to the new developments [20].

9.2 The organisations and institutions involved

The different parts of the existing NIP are implemented by:

- ❖ The National Documentation Centre, which initiates and supports in Greece different national, European and international programmes
- ❖ The National Book Centre which is responsible in the field of books and publications with several relevant programmes
- ❖ A number of ministries (Ministries of Presidency, Mass Media, Financing, National Financing, Telecommunication and Transportation, Development, Culture, Education, Justice) involved with the laws, the programmes, the staff that their responsible for.

- ❖ The government with all the decisions and the laws influencing this field
- ❖ The General Secretariat of Information, responsible to inform the public with the developments and the participation of the country in the Information Society.
- ❖ The National Radio and Television Council, which has limited influence in mass media is not independent and, until recently, had many difficulties with legal rights, development [3]. It needs further staff and funding as well as more legal authorities. However, the Council itself must exploit the existing possibilities and complete the actions that is responsible for: creation of needed organisations, control of TV advertisements and implement penalties to everyone who does respect the existing laws
- ❖ There is the National Statistic Office, which is trying to do some research and is cooperating with some other institutions.
- ❖ The State Archives are responsible for the information policy of every archive, public or private, in the country and, also, is interested in Greek archives abroad. All these archives are open to the researchers or anyone who have a firm reason to study them The State Archives are depending very much on the existing laws regarding them and their procedures and they participate in their creation [8].
- ❖ There is a government Committee involved with the participation of Greece in the European Information Society but there is no work published, its influence is limited and there are only general guidelines [13].
- ❖ The OTE created a relevant Office. The organisation is supporting the elaboration of new laws like the one for digital TV and is participating in several pilot programmes. Many of its actions are connected with the policy of the

Ministry of Telecommunications and Transport where it also belongs. According to others, the OTE should evolve much faster [12].

- ❖ A special advisor for the Prime Minister for this subject with responsibility to organise the different policies in the ministries. This effort has been much more intensive from 1997. At that time all ministries sent studies of their actions and programmes. The analysis of these studies is actually taking place in the Prime Minister's Office [9].
- ❖ The Independent Office responsible for the Personal Data Protection. The actions of this office are based on the Data Protection law of 1997 (based on a European Directive of 1995). It controls every public or private data archive in a preventive and repressive way. It tries to prevent problems by classifying data as containing sensitive content. For the later the Office gives special permission and keeps related records in order to make controls whenever it wishes regarding the needed standards. During 1998, the Office will have 15 specialists (controllers) in order to serve the personal and public protection [17].
- ❖ A Forum of Communication which was launched by the Ministry of Transport and Telecommunications with many participants and important results. This Forum included groups involved with national infrastructure, content analysers, users, specialists in order to propose a common NIP. The final declaration (www.eet.gr) will be used for the creation of a Greek Green Paper [15].
- ❖ The Federation of Hellenic Information Technology Enterprises started in 1995 with 75 enterprises and now has 250. It is a private sector initiative and there is an important series of actions aiming to co-ordinate and bring together the

different enterprises of the field. Now, there is a more common and accepted investing and selling ground accepted from small and larger enterprises, national and international. A wide range of discussions and working groups launched a Code of Conduct respected most of the times by the members of the Federation [20].

- ❖ In theory, the Office for the Development of Information Technologies should be in charge to follow and support an Action Plan for NIP, but its responsibilities are limited. This Office is responsible of developing information systems and technology in the public sector [6]. During 1998, it was decided that the Office will be supported with more specialists (59).
- ❖ The Organisation of Collective Management of Intellectual Property is dealing with issues like copyright infringement from the use of PC and photocopying machines. This organisation was created after a proposal of the Ministry of Culture and study of NBC and is collecting 1% of the sales of every PC or photocopying machine. The funds are distributed to the publishers and authors through their associations [10].
- ❖ The Institute of Audiovisual Means of the Ministry of Press organises seminars and collects data regarding developments and enterprises in the multimedia field. For example, the Greek enterprises of this field were funded from EU Media 2 programme with 397,000 ECU for 1996-1997 (60).

9.3 The main related programmes and actions

The Ministry of National Financing is responsible for the whole national budget of public projects and investments and for the planning and distribution of European funding sources (66%). Here it is decided where and how the funding will be allocated (*Table 5*). The control of the procedures is made by various autonomous committees. Now, it is planning the allocation of the third package of European financial help (Santer) [19].

The Ministry of Development and its Secretariat (www.gsrt.gs) from 1993 through research and relevant programmes is trying to help and support the companies to be able to compete in the European Information Market. The European Union raised the funding of these programmes from 3.5% to 7.9% of the total European Countries' expenditures [13].

The Ministry of Transport and Communication (www.eet.gr) is mainly working in the following fields:

- Telecommunications infrastructure (bases of the Information Society)
 - Legal issues concerning the freedom of the market
 - Informing the public on issues such as the use and benefit of new technologies
- [15].

The Ministry of Mass Media is participating in the discussions held between the Ministries and other government members as to promote a more efficient law

system which will facilitate the function of organisations and institutions related with the NIP. There is a crucial gap involving the communication between the public and the people implementing the NIP. However, it must be noted that the most important issues for the Ministry (implementing an information policy) are:

- Human Rights, Democratic Values and New Technologies.
- Creation of a Universal Community Service in Greece and in EU aiming to facilitate and make more effective the public access to the New Technologies. Some examples of its goals is limiting the cost of Internet and educating users [5].

The key for the development of the Information Policy of this Ministry is the co-ordination and management of different information systems. There is a major programme regarding the public administration called 'Cleisthenis' from the Ministry of Presidency. This programme co-ordinates several different national programmes, organising and supporting the actions of other ministries and institutions. It tries to achieve a transition from internal and local systems to external (more related with the public) [16].

The Ministry of Financing (www.di.uoa.gr/GSIS) has organised a national network (launched in 1992) called 'Taxis' aiming to manage all the Tax offices of the country. More than half of them are now a part of this project. This project will be operational until the end of 1998 offering the following features: tax reports, certification and control. They will operate through EDI and Internet

and the staff (approximately 800) will be fully trained as to cope with these procedures (61). There are two more national projects, the National Treasury and the Customs with almost full function. Also, there is a discussion about a forthcoming effort that will connect policies at an internal Ministry level [7].

Recently, OTE has bought the 90% of the Armenian Telecommunication Company (ARMENTEL), (an investment of \$500 millions) and OTE will have the exclusive exploitation of Armenian Telecommunication network for the next 15 years. Furthermore, OTE in co-operation with Deutsche Telecom is on the way to make an offer to BTC (Bulgaria Telecom Organisation) aiming at the control of the shares given to private investors. OTE made similar proposals to national telecom organisations of Romania and FYROM. Today OTE and STET Italia own the 40% of Moldavia national telecom organisation and OTE also owns the 20% of the Serbian national telecom organisation (62) [12].

In terms of the actions of the State archives there are some special issues to be considered such as: the treatment of information of national security, confidentiality, and preserved and destroyed information. These procedures are not easy handle through networks or public systems. The introduction of Information Technology showed how difficult it is to implement such programmes in the archives. There are a lot of differences between the structure, the cultures and the information policy of archives at an international level. This fact makes hard the creation of common working level between foreign archives.

There is a horizontal co-operation with NDC and other institutions in terms of exchanging information.

The NBC (book.culture.gr) is trying to deal with the forthcoming revolution – caused by the new technologies - in the book industry by evaluating the advantages and disadvantages:

The advantages include the dramatic increase of publishing; further creating and managing opportunities; decrease of the related costs; and great market and distribution flexibility through the e - commerce.

However, it should be noted that the work on the networks is subject to piracy, illegal copying and profit loss. Also, the complete change of the form of book and the way the society treats it can be ignored. These issues lead the NBC to support and cooperate with authors, publishers, readers with appropriate programmes [10].

The programmes of the National Library which are not sufficient for its effective development:

1. Universe: Creation of an ideal Collective Catalogue with other European Libraries, through the use of common software.
2. CASA: Development and use of ISBN and ISSN as means to better co-operation and exchange of information between libraries [11].

The Federation of Hellenic Information Technology Enterprises is trying also to help the government, national organisations and private enterprises in terms of:

- Dealing with the complexity of the existing or proposed projects through recommendations and studies
- The control of the current situation by bringing together ministries and enterprises
- The support and completion of different projects when there is problem and conflict between enterprises [20].

The Ministry of Education (www.pi-schools.gr/gr-frprojects.htm) has launched a series of programmes as to facilitate the participation of the country in the Information Society through a modern education system. The most important of them are: *Energy*, a pilot project aiming to bring the new technologies and the networks in the schools and *Odysseia*, which is a part of *Energy*, launching audiovisual and Internet lectures in 20 and 240 schools (two stages).

It is important to state that 80% of the High schools have a Working Place for new technologies (Windows 3.1). Until 1999, 90% of the Lyceum will have Pentiums with LAN and Windows NT. This investment will be the foundation to initiate a programme for a network between schools. The Universities network (www.gunet.gr) and Administration network pilot through ISDN (www.edunet.gr) for lecturers and teachers are already functioning.

Some additional existing and developing programmes are: *Trends*, teleducation to school teachers implemented in a pilot level and a *European Action Plan* for 500 schools and libraries with the estimated cost of 22 billion drch. All these actions aim to connect children with new technologies, information tools and the logic of networks [21].

The Ministry of Culture (www.book.culture) is mostly exercising its information policy (books and libraries) through the NBC and its programmes:

AQUARELLE (European), development of databases in order to respond to cultural documentation needs.

MEMORANDUM OF UNDERSTANDING (European), working groups for issues of culture and information society.

POLEMON (National), development of a special software for a National Archive of Monuments [18].

The Independent Office aims to protect every personality and limit the negative actions from the private or the public sector. Following the problem of control of the Internet, it is trying to implement any proposed solutions from inside or outside the country. There is no relevant law case so far handled by this Office. Thus, it is responsible for the control and the security (physical and electronic) data entities and for the National Archive of Shengen . All European countries have related Offices which work together, have similar organisation and report

to the Common Shengen Control Office which gives the needed guidelines and support [17].

9.4 The influence of current political situation

The political parties are not concerned yet with the issue of a single NIP, but are with some of its components. They seem to believe that new technologies will be the answer to many problems, but when comes to implementing them they are not capable of taking innovative decisions [22].

In the last two year, the first well planned attempt to develop a NIP has occurred. Even if this attempt comes from different Ministries or institutions it is evolving satisfactorily. There is a growing movement aiming to get the country closer to world-wide developments. This movement defines the need for a firm national information policy in order to participate in the forthcoming Information Society. The prevailing tendency of modernising the laws and functions of the society according to European examples is also positive. This issue is not so important to the public: many things can be done quickly without conflicts but, then, we do not have the support from the public in order to really advance in this field [14-5-12-15-19-20].

However, there are several significant problems involving actions and decisions of politicians:

- The public and private institutions in this field fail to communicate with the public.
- The political culture of all political parties is often a problem regarding the initiation of new ideas.
- Projects proposed or implemented without considering similar ones must come to an end.
- The amount of money spent on new technologies must be increased in order that the Greek Enterprises become more competitive in Europe.
- The parties on the one hand are in favour, theoretically, of the Information Society but when the time comes for laws, support of people and programmes, their actions are not the same [ALL].

As the current political system does not consider seriously the issue of NIP, there is not enough funding and, at the same time, it is very much based on personal relationships and problems. This last fact does not allow the development of many fields [2]. Also, the frequent change of Ministers caused many problems as there was a change of priorities and goals setting back development of a united and clear Information Policy [6]. At the same time, the tendency to completely privatise several public services without further control can be very dangerous in the future [9]. Finally, a National Library with 125 million drch. annual budget and 70 staff in total is not acceptable [11].

9.5 The EU and US influence

Europe influences the whole world with its history, culture and its different groups of people who preserve their special characteristics. There is a strong mutual influence between the countries composing it. The influence from EU in Greece is catalytic and most of the times very positive concerning the financing of programmes and the exchange of ideas. This influence is coming mostly from the European Commission and Council of Ministers. Greece is following and implements European directives. There are different Committees in the ministries (i.e. General Secretariat) analysing and promoting the embodying of EU developments in the country through several actions:

- Financing programmes
- Participation in the international Fora
- Legal and regulatory instruments
- Exchange of ideas and information while participating in international organisations [23].

The European Community is currently working on a common programme concerning the Information Society and the new technologies. Through this programme, a more common and comprehensive European information policy will be created. The related organisations and institutions in order to influence and implement them follow these actions [ALL].

EU Directives are usually sector or subject specific. To the extent that they harmonise national laws, they contribute to compatible, homogeneous national policies across the EU [23].

The USA is influencing Greece through its software, related products and information. The relation of institutions and government with the US market and system is affecting some aspects of their procedure. There is some intervention like the copyright and TV channels problem (Greece - USA dispute analysed elsewhere) but are very rare. There is a co-operation for exchanging staff and ideas in some levels. For example, recently some people from the US IRS came in Greece and in the Ministry of Financing in order to propose new ways of tax control [7]. Furthermore, the NII plan created by the Clinton - Gore administration embodies possibilities for the development of public and private sector and, at the same time, leaves to the end user the role to choose the most suitable services or prices. Europe's answer is the Information Society [9]. There are differences between US and EU: for example, the former treat the archives as an information source for multiple use while the latter think that the content of the archives is a cultural good [8].

However, the ideas and the influence from the EU are not always treated positively as every country has its own special characteristics and the implementation of EU directives is sometimes not wanted. Intense direct influence from EU and US (directives, intellectual property and TV stations) is

not always for the benefit of the country or is not suitable to its needs regarding laws, choice of development programmes, and participating with countries outside the EU [3].

9.6 The existence of a Green Paper or of relevant documents

Most of the people interviewed answered that there is no relevant Green Paper, although but a few knew about the existence of the Study – Action plan of 1995: Greece in the Information society, created by the Ministry of Development. There is a series of general Guidelines concerning problems and the strategic development of the Ministry and other institutions. For example, there is a recent Guideline from the Ministry of Presidency concerning the problem of 2000 with relevant analysis, information and conclusions for all the staff concerned with the issue. Another Guideline from the same Ministry is the latest developments regarding the security of the existing and future information systems [6].

Generally, Greece has a gap in preparing reports about the existing developments, printing and promoting research results, implementing business and action plans [9]. A Green Paper about the participation of Greece in the Information Society will be ready around October with some similarities to the ones published by Portugal or Denmark [14]. Its main characteristics will be:

- ⇒ Political, promoting the goals and innovations of the government.
- ⇒ Informing, explaining several issues and most of all what will the public benefit regarding contemporary life. The changes that are going to occur in every level of the society must positively affect the public. This can happen, for example,

through the improvement of the relation of the public and the private sector with the clients and citizens.

⇒ Support and promotion, through, examples of the current programmes [14].

9.7 The position of Greece in EU compared with other countries according to the subject

The actual position of Greece is better than the one presented by numbers in European reports. There are a lot of things launched by government, institutions and universities with great success but are not acknowledged because of the lack of proper and effective advertisement and management. Thus, Greece has a good rate of development regarding information technology research. The problem is the failure to inform and implement these new features in administration, economy and society [ALL].

The existing mechanisms of management and dissemination tend to act to favour closed groups because of the staff, structure and bureaucratic procedures involved. That, and the fact that there is not enough funding concerning the promotion and development of the NIP, are the most important reason why Greece appears to the weakest position in EU [14]. The fact that all the investments are not on record because of their nature and the procedures of public administration shows the problem. The late development compared with other EU countries is also due to huge military needs of the country [19].

We can not, however, ignore facts such as: the percentage of people reading one book and more during one year is 40%, the lowest in Europe. Italy has 42%, France 75%, Denmark 80%, Iceland 90%. This shows clearly the existing problem or the special characteristics of the Greek society, which must be analysed and dealt with [10].

9.8 The development of a National Information Infrastructure and the 'Information Superhighway'

There is an intensive try to participate in the developments of the "Information Superhighway" involving:

1. National actions- develop the existing laws, inform the public, development of the education system.
2. International actions- advertise the happening developments in the country, make its standing more powerful [4].

- Public sector

- a) Development of national technological structure.
- b) Active participation in the EU Information Market.
- c) Sensitivity towards the needs of the society

- Private sector (with government co-operation)

- A) Cheaper and more efficient services.
- B) Discussion over financing the sales of personal or bigger computers.
- C) Regulation of the existing problems [5].

There is a slow progress of the information infrastructure at a national level but the OTE is rushing to set the basis for its development. This will be the foundation for any further actions regarding information society and new technologies. For example:

- ⇒ The digitisation of the centres of the network progressed from 47% during the end of 1997 to a current 70%. In the big cities, the percentage will be 100% during 1999.
- ⇒ There are 1.4 million digital supplies with a weekly review of the system.
- ⇒ The digitisation of the networks for high quality access from clients. All new technologies are used (i.e. optical fibres) offering different possibilities. Also, ISDN solutions which are being used from about 2000 users with a great rate of expansion.
- ⇒ Extended Bandwidth Multifunctional Network and introduction of ATM technologies.

The NII is mostly depended on OTE and on other institutions (private or public) or networks like (National Network of Research and Technology - Polytechnic University) from universities, which is a host for the Balkan and Middle East territory [12]. Nobody, however, can say what will be the final form of this NII [14].

It is important that there is a free market, open to proposals and ideas, with the appropriate law system and the right guidance from the State for the NII [ALL].

Another fact is that most of the market (ministries, public administration) is very much dependant on the actions of the Ministry of Transportation and Telecommunications. It is working on developing a permanent - more total - network (mostly through OTE but always keeping an open market) which will support the existing and future market. Some issues that are currently analysed: the structure development with the digitisation of the source of information; categorising information needs, making them ready to be used for communication and updating; freedom of information flow; and analysis on technical and law issues regarding for the validity of the produced documents from the new information systems [15]. There is a growing development of the ministries network covering all the country (www.grnet.gr) for public and private use and a network of universities (gunet.gr).

9.9 The proposition, solutions supported by future programmes and recommendations

It is important to mention that the Information Society has three aspects:

- economic, as the information is a critical product serving and forming financial activities
- it is not consumed but affects several procedures
- forms a new quality of life for the individual by giving him the opportunity to retrieve or distribute information easier and with fewer limits.

Considering these ideas it becomes obvious that the control of the several aspects of the Information Society lies, at least in the beginning, on the different States and Societies involved. So, they need to invest on forming policies, which will limit the existing or the forthcoming problems. At the same time, it is vital for countries, like Greece, who want to be a part of this Society, to urge their entrance in it, in order to form its existence, in a useful and convenient way to them, lead to what all the others will have to follow and earn an important part from the existing and the future profits [9].

It is very important to mention some ideas of general content mentioned by the people interviewed, regarding future actions and recommendations. There is a need to organise the different existing policies which now they can not be so effective in order to help the development of the industry and the society in general through; a Common Strategy of Communication between the organisations concerned with the development of the NIP; the opening a public discussion about the structure and the principles of developing a NIP including professors, companies, specialists, users at a national and international level. The incoming data will be analysed and converted to a national programme; the assessment of business plans from each sector having an information policy in order to be processed as a Master plan parallel to the creation of a Green Paper [ALL]; and the creation of a task force responsible for the fast completion of information technology projects.

In addition, it would be useful to consider and study a transition from public and private sector to an alternative sector. The aspect of the private sector can provide the new scheme with firm management, business and action plan. The public can control the value and the prices, through funding, assuring the overall and collective distribution of information as a vital good. Like that there will be no monopolies and the decision making force will be more easily controlled. That is the role of the State, intervening in the different relations (e.g. working) of the society making sure that there is always common and general profit. This can happen, for example, by the raw material, the production or the dissemination of related programmes [9]. At the same time a series of actions analysing the nature of the content, the services, the public, the methods and the education of the movement and the groups involved in the Information Society, is vital. Information is a common good and the state must make sure there will be no social groups left out from these developments because this fascism in its worst form. General profit is the key idea established, for example, through the control of the price of information services [9].

The promotion of the influence and effect of Information Society and new technologies in life (medical issues, transport, banking and so on) is very important, while working against the existing phobia for the new technologies in every level of the society. Training and education can demonstrate that new technologies can be simple and their use can improve our life [ALL].

From 2000 – 2006, there will be a new European package help (Santer) and there issues concerning information policy and society will be far more organised and linked. Maybe there will be a separate Action Plan, it will be dependent on the current research and discussions. The later are analysing the needs of the administrative mechanisms for a common implementation of these plans [19]. Greece, because is late in these procedures, can adopt the existing European standards. However, it is vital that there are mechanisms that will elaborate and evaluate these standards before implemented nationally. And not only mechanisms with technical characteristics but mechanisms evaluating the efficiency, the public benefit through statistics, programmes and comparisons [14].

The Ministry of Press and Mass Media and, generally, the Greek information policy must achieve a review of the existing laws and relations between Human Rights and the public of the Information Society. This issue has been already raised and there is a European Action plan to be formed. The country is fighting for the freedom of expression in all levels. The problem is that the New Technologies are far more developed than the related legislation. The only answer to this issue is that the legislation evolves by taking into account: Human Rights, Free and Efficient Access to these New Technologies. There is an intense problem and inadequate discussion regarding Human Rights and New Technologies. All the new programmes and actions of the ministries will consider this issue and will try to participate in its European development. Also,

it is important to provide quality information to the public about the existing ideas for the national and international Economy, Environment, Foreign matters [4-5].

There are two main projects about to be launched by the Ministry of Presidency: a project called '*Kanonas*' aiming to review and evaluate from the beginning all the existing information systems through all their functions and faces. This procedures will determine which of them should be renewed or cancelled. This will be the further development of '*Kleisthenis*' [6].

The basic new issues and actions considered by the Ministry of Financing include an internal organisation and development through job analysis, evaluation and new propositions; an assessment of the influence of Euro in the information systems; issues of security and protection of data of the Ministry; and, further creation and implementation of information systems with customer focus. These information systems will be based on electronic services, communication and commerce. In order to achieve these goals the Ministry, and the country in general, need developed national systems and trained customers. The relevant pilot programme launched is called '*Entaxis*' and the first results will be shown towards the end of 1998 [7].

There are two plans both in national and European level for the National State Archives:

- (a) Catalogues and Telematics including projects and agreements for exchange of information and ideas.
- (b) Creation and promotion of the idea that the content of archives must be treated as a Common Cultural Good regarding catalogues, evaluation, analysis and dissemination of information [8].

The NBC will focus on the further development of the Single Framework for a Book Policy: the idea and effort of the Minister of culture to open a discussion with all the companies and organisations related with the book industry and with the different offices responsible for the different kind of libraries in Greece. There are many problems appearing but the effort will go on [10].

The National Library will digitise step - by - step a part from its sources and material, launch a retrospective cataloguing of the years 1900 - 1988 with the catalytic participation of private sector and participate in the creation of a Collective Catalogue of University Libraries [11].

OTE has planned a series of actions in order to lead to the creation of a NIP and a full participation of the country in the Information Society. The most important are:

⇒ Research programmes in co-operation with several universities (budget of 5 billion drch.) planned for the next two years as well as a programme of

scholarships for universities at a national level (estimated investment of 700 million annually).

- ⇒ Development and testing of innovative ideas and technologies before their use in order that the relevant choices made are autonomous and closer to the needs of the organisation.
- ⇒ Creation of two Foreign Offices in the United States (East and West) and one in Brussels for promoting the existing developments and research and the exchange of information and ideas.
- ⇒ Participation and support concerning e - commerce pilot programmes. With the Ministry of Financing there is the launching of a programme for electronic analysing and handling of tax claims.
- ⇒ Complete actions for the education systems and public training, special initiatives for people with special needs and development of a health system for hospitals, doctors and patients [12].

10. Conclusions

10.1 Introduction

What is the current situation in Greece regarding the development of a National Information Policy? The term NIP is not used much, even by officials and advisors of Ministries of relevant institutions. This fact shows that issues such as Information Technology and Systems or legislation for telecommunications and data protection are not treated in the context of a NIP. It is obvious that when there is a need for actions and projects like these, different Ministries take some initiatives trying to follow the EU initiatives and directives in order to deal with these matters. But it is obvious that these procedures can not and do not create a NIP. However, the last two years has seen movement in Greece in this field as the reality of a European Information Society comes closer and influences EU members. In the same period there were some important Greek National Initiatives, such as Green Paper, the Forum of Communication, the information infrastructure investments from the Hellenic Organisation for Telecommunications and other projects from Ministries and organisations with the involvement of the EU, all aiming to develop information handling, dissemination and market in the country. These initiatives are just a start and are taking place later than other European countries, although the huge military investments that Greece makes despite the low population levels has no match in other EU countries. It is vital that this rate of development grows even more and faster in order that Greece can participate and influence international developments in this field. The existing problems like the very bad situation of

the National Library, the non existence of an office for the NIP, the low awareness of the society for this subject, the lack of co-operation between Ministries and so on, can only be studied, analysed and solved under the plan and the principles of a NIP. The influence and the EU standards can be a part of an answer to the issues but not the whole solution. It is critical that all ideas and suggestions are controlled and tested bearing always in mind the special characteristics and needs of Greece. Apart from that, the strong national culture and history can not be ignored when implementing any kind of policy or when evaluating new technologies and innovations. So there are some very important issues that policy makers must take under very serious consideration: the national culture and needs as well as the public benefit and awareness. It became clear from the interviews that most of the levels of the society are not acquainted with the new technologies or have developed some kind of phobia against them. This phobia is focused on their use and the benefit that they can bring in everyday life. None can deny the need of time, effort and investment in order that these facts are dealt with success and, in the long term, changed. However, it is high time that a solid, national and well planned policy was launched, dealing with all related fields (e.g. education) and implementing short and long term activities despite any political or financial cost.

10.2 Moore's Matrix and Greece

	Industrial	Organisational	Social
Information Technology	+	+	
Information Markets			
Human Resources			
Legislation and Regulation	+	+	+
Information Engineering	+		

This table was created combining the theoretical views of Nick Moore and the results coming from the overall research and the personal experience. Each ' + ' indicates a cell in the matrix where I consider adequate policies are in place.

Regarding the development of Information Technology and Information Engineering (only for the Industrial Sector), it should be noted that there are useful projects, research and policy initiatives in the Industrial and Organisational Sectors (see pages 68, 82). However, the current standards concerning Information Markets and Human Resources are in a very low level. Growth is a reality for Information Markets, but the current numbers are very limited (63). Also, the creation of Human Resources is restrained and the provision of related actions is, only now, beginning. Legislation and Regulations

have a sufficient development in Greece, mostly because there is an active cooperation and guidance from the EU initiatives.

The contribution and the cooperation with the EU have helped towards this direction as well as in the direction of modernising the existing laws (see page 72). Overall, it must be stated that in every level of Moore's Matrix projects or discussions are being launched, even if this happens later than the other EU countries. However, it is important that a further and more active development takes place in all three sectors and, particularly, in the ones of Organisation and Society, and especially to help develop the information markets and to train the population in the use of information and information technology.

11. Recommendations

11. 1 Following research needed

It would be useful to search and analyse the work of some more institutions, like the Institute of Audiovisual Media, as the informational policy of Greece is sectoral and it is possible that there are some other organisations which play a role on its development.

11.2 Ideas and actions of general content

The organisation and assessment of the different existing policies, which at present can not be as effective as they could be in order to help the development of the industry and the society in general, is vital. For example a Common Strategy of Communication between the organisations concerned with the development of the NIP is needed. A series of reports analysing the nature of the content, the services, the users, the education of groups involved in the Information Society. Information is a common good and the state must make sure there will be no social groups left out from these developments. General profit is the key idea established, for example, through the control of the price of information services. This can happen by government funding of these services, or by limits set by law.

There is a need to produce information and digitise this data in its source through programmes funded mostly from the new European package help (Santer 2000-2006). Whether there will be a separate Action Plan, will depend

on the current research and discussions. For example, analysing the needs of the administrative mechanisms for a common implementation of these plans.

However, it is vital that there are mechanisms that will elaborate and evaluate all suggested standards and actions before they are implemented nationally. Not only mechanisms with technical characteristics but mechanisms evaluating the efficiency, the public benefit through statistics, programmes and comparisons are needed.

The National Library must be supported financially so as to develop its work regarding the National Bibliography and to participate in more European programmes.

11.3 International Policy

International Policy through the European programmes and opportunities must be Greece's goal on these fields in order to become the centre of Balkans and Middle East market and developments.

The analysis of the socio-economic position of the region in combination with recent geopolitical developments in the wider area of the Balkan and Black Sea areas, allows for the formulation of a development strategy so as: to support of the country's efforts for cohesion with the other E.U. countries and reinforce the production forces of the country (industry, S.M.Es, human resources).

Investment in industrial sectors of high technology so as the available specialised personnel can be utilised will be possible through the establishment of good and efficient connections to the Trans-European networks and development of the triple network for transportations, energy and telecommunications. Apart from that, there is a need to reduce the intra-regional inequalities by enabling balanced development of the smaller urban centres, strengthening agricultural and local development, upgrading social welfare and preserving the natural resources.

11.4 Education, Training and Public involvement

The information society is predominantly a knowledge based society. Participating in the information society means more creativity, communicating faster, developing new ideas and learning how to learn throughout life. People and know-how are the main capital of the country. For this reason, we have to strengthen our investment in enhancing our knowledge base and in improving education and training.

Opening a public discussion about the structure and the principles of developing a NIP including academics, companies, specialists and users at a national and international level is the next very important step. The incoming data should be analysed and converted to a national programme. Thus, the desired promotion of the influence and effect of Information Society and new technologies in life (medical issues, transport, banking and so on) will be achieved. Wide, including

as many society levels as possible, human training and education can only persuade that new technologies can be simple and their use can improve our life. During these procedures, informing and educating Greek people outside the country should not be neglected.

Education in all levels must move away from a system centred solely around teachers to focus more on learners. It must be build around learning and less around teaching in order that the majority citizens enjoy the benefits of the Information Society. That includes the evolution of Greek school through its careful studying as to: realise its real needs and the needs of the Greek society; create the appropriate legal foundation; preparing new books and multimedia educational programmes which will be based on new technologies; and, educate the teachers and academics with the support of the appropriate staff and specialists.

In addition, the new technologies can potentially contribute towards overcoming social exclusion and regional disparities. Ensuring that the public interest is protected means that consumer protection will have to be adapted to the new conditions resulting from the rapid emergence of these news products and services. A similar awareness is needed among the general public. People need access to the appropriate training throughout all levels of education.

11. 5 Role of public and private sector

The public can control the value and the prices, through funding, assuring the overall and collective distribution of information as a vital good. In that way, there will be no monopolies. That is the role for State, intervening in the different relations (i.e. working) of the society making sure that there is always common and general profit. This can happen, for example, with the raw material, e.g. the production or the dissemination of related programmes.

The public sector must increasingly use new technologies to improve the quality, openness, transparency and user-friendliness of public services. The use of Information and Communication Technologies (ICT) is also required to boost the efficiency of public administrations, something which is becoming a key requirement in the context of economic globalisation and budgetary restrictions. All levels of public administration, whether local, regional, national must facilitate public access to public information by the use of new applications (i.e. public information kiosks or on-line systems).

Public policy must create the conditions for rapid progress in order to realise the potential for new technologies. In contrast to more technologically advanced countries, its role is not simply enabling and passive, but it must be active in order to overcome the initial disadvantages and to initiate a self-sustaining growth path (64).

Through these procedures, the private should invest in information technology, human resources and training and assist the development of relevant legislation. The further growth of the private sector – through the reality and the needs of the Information Society - largely depends on the level of cooperation and evolution of the society. Thus, there can be no real long term growth either for the public or the private sector without the full and active participation of all levels of society in these developing procedures.

11.6 Institutions and organisations

Government and National Institutions should adopt open standards and structures. In that way, their social role would be facilitated.

11.7 New departments or organisations needed

Firstly, the creation of a task force responsible for the fast completion of information technology projects (a National Council of Information Technology and Science) and of an autonomous organisation for the information infrastructure is imperative. These organisations should work parallel to a permanent parliamentary committee for the Information Society. Then the establishment of institutions for easy and fast spread of use of the created infrastructure and information developments and for the safeguarding of constitutional rights relative to these issues, is vital.

Finally, it is important to motivate the creation of a National Centre of Broadcasting Frequencies as the proper exploitation of the national broadcasting range will solve many problems regarding the control of copyright, the development of mass media and it will bring to the state any important amount of money and financing sources 1.5-2% of the Gross National Product. The investment for this action (40 billion drch) will be soon largely covered (65).

11.8 Businesses and forthcoming developments

Coping with the changes is a complex issue where no pre-defined solutions exist and therefore it is risky. In order to undertake the necessary adjustments, European businesses need a clear and predictable framework that will enable them to take full advantage of the new market potential. Information and communication technologies (ICT) are critical to the future competitiveness of all industries, commerce and services. Success in this field depends, therefore, on the speedy take-up of ICT by all enterprises. The concept of distributing good practices should be promoted in this respect. This is important especially for small and medium-sized enterprises (SMEs) which play a central role in the creation of new job opportunities. SMEs are, also, crucial for innovation. SMEs are also vital to development and diversity of the new multimedia content market. This market demands flexibility and cultural proximity for the provision of tailor-made information services and it is dominated by newly created SMEs. Greece, should provide the appropriate environment for SMEs to develop. In particular they should devote considerable effort in order to increase

understanding concerning the needs, priorities and obstacles (e.g. bureaucratic burdens), hindering the creation and running of SMEs and their use of ICTs. For consistent and fast market development, standards and publicly available specifications drawn up by market groups are increasingly important. This has significant consequences: avoiding dominant positions or monopolies; and guaranteeing public interests and standards in public procurement. Finally, an **Information Network for Businesses** in Greece should be launched in order to facilitate the proper and wide use of information sources, enable the cooperation between different forces of the Information Market, establish a structure for customer services, help the survival of SMEs and lead the a major number of enterprises in the competitive EU market.

11.9 Information Infrastructure

The establishment of a new regulatory framework for telecommunications based on liberalisation, will play a vital role in unleashing the private investments required to create the communication infrastructure necessary for the development of the information society in Greece. Competition is necessary to improve the quality of communication services, drastically reduce prices and trigger the emergence of a plethora of new services. In particular, Greece needs:

switching systems - Development of the three international digital exchanges, expansion of their capacity, introduction of CCITT No 7 signalling and operation in ISDN environment.

terrestrial transmission systems - These systems include microwave as well as terrestrial and submarine fibre optic networks. Such networks are being promoted by OTE between Greece and other neighbour- Mediterranean- and Black Sea countries.

satellite transmission systems for stable and mobile telephony – Related projects are promoted in order to facilitate the development and the evolution of relevant services in the country (66).

11.10 Evolution of the current legislation

The development a regulatory and legal framework with information-carrying networks are the basic building blocks of the national information policy.

However, over-hasty legislation should be avoided until it is clear where and what type of intervention is required. For example, an additional new challenge for the regulatory framework will be the emerging technological convergence between telecommunications, electronic information services and broadcasting. In addition, it is important to remove or prevent existing or emerging obstacles which may cause difficulties businesses from taking new initiatives and committing investments to them.

11.11 Environmental protection

Investing in the future also means that we preserve, as much as possible, the environment for the future generations. Sustainable development can benefit

from the information society. The use of ICT offers major opportunities for less scarce resource-intensive life styles.

11.12 Innovation

Greece needs to create and participate in high-speed research networks to be fully integrated into the international research world. For example, telematic applications can help to reduce the requirement for transport infrastructure investment, urban congestion and pollution.

11.13 Human Rights and national information policy

The National Information Policy needs to reflect the shared values which form the basis of the European social model, including democracy and individual rights, equality of opportunity and social welfare and solidarity. In our rapidly changing world, it is important to ensure that the information society reinforces, rather than undermines these values. Emphasis must also be given to the specific needs of women, of older and disabled people, of less educated workers as well as minorities. The views above can only be implemented through pilot projects in the fields of social interest. These projects will show the needs of the society as well as how the new technologies and the Information Society can satisfy these needs.

11.14 Cultural Needs and Issues

Content is an essential component of the information society, both as a major and growing source of business revenue and as a vehicle of ideas and values contributing to the preservation and promotion of Greece's cultural and linguistic diversity. Therefore, the integration of the country's content industry into the European economy must be parallel to the effort of maintaining cultural diversity. Such a development will largely depend upon the evolution of a consistent regulatory framework for new products, services and content concerning, mostly, the mass media. The growth of information in every aspect of society, combined with the development of new services and specialised channels must contribute significantly to pluralism and cultural diversity. Basic national rules have to be established in order to create a level playing field, for example: securing network interconnection and service interpretability; protecting intellectual property rights and information security; protecting privacy and personal data, promoting global standards, removing trade barriers, avoiding distortions of competition, and addressing the cultural and linguistic dimension.

11.15 Future Developments that need to be considered

The boom in the electronic information services sector continues and may accelerate. The growth rates at the level of the individual sub-markets continue to differ very remarkably, so the structural changes also continue. New

neighbouring markets arise exerting a strong influence on EIS services for the business sector.

The telecommunications revolution and here particularly:

(a) the continuing deregulation of the national PTTs, the emergence and intensification of competition between various telecommunications suppliers in the national European markets and the reduction of prices to a level which allows the European Economic Area to become competitive with the United States in this area

(b) the upgrading and extension of the information superhighway and the equipping of the networks with ever faster transmission rates (e.g. via ISDN) with the consequence that multimedia online becomes common

(c) the introduction of new, extension of established value added services with considerable synergetic effects on its electronic information services (e.g. videoconferencing, corporate networks);

The continuing multimedia revolution and here particularly:

(a) maturing technology in combination with diminishing production costs;

(b) the until now largely untapped creative design multimedia potential

(c) the convergence of PC and TV technologies and the synergetic effects between these two areas (for example "digital television");

The explosion in the number of users is evident above all in the following developments:

- the rapidly growing number of companies and households with a technical infrastructure and the qualitative enhancement of PCs with CD-ROM drives and communications services;
- the rapid growth of the user community in the Internet and the evolution of a "multiplier group", which will increasingly take on leadership functions for the other users and potential users of EIS services;
- the rapid growth in the number of customers of the on-line consumer services;
- an increasing demand by companies for "total information solutions" combined with wishes for more "individual solutions" (e.g. the "individual newspaper") and for an optimal integration of internal and external information sources.

Market development will also be significantly encouraged by the market players on the supplier side, particularly by

- the entrance of many newcomers into the market for electronic services;
- the intensifying of "electronic publishing" of established suppliers and
- the implementation of appropriate strategies for market development (for example the development of new applications, any professionalisation of marketing) (67).

References

1. *National Information Infrastructure: Myths, Metaphors And Realities*
(URL: <http://www.pitt.edu/~malhotra/papers/niireport.html>)
2. **Weingarten, Fred W.** Federal Information Policy Development: The Congressional Perspective. In: McClure, Charles R., Hernon, Peter, and Relyea, Harold C, eds. *United States Government Information Policies*. Norwood, NJ: Ablex Publishing Company, 1989.
3. **Rowlands, Ian.** Understanding Information Policy: Concepts, Frameworks and Research Tools. *Journal of Information Science*, 1996, 22 (1), 13-25.
4. *Ibid* 22 (1), 14-15.
5. *Information Policy Bibliography*
(URL: <http://www.cpi.seas.gwu.edu/library/bibliogr.htm>)
6. **Burger, R. H.** *Information Policy: A Framework for Evaluation and Policy Research*. Norwood, NJ: Ablex Publishing Company, 1993, p.20.
7. **Rowlands, Ian.** *Understanding Information Policy*. Bowker Saur, 1996, p. 15.
8. **Montvilof Victor.** *National Information Policies*, UNESCO, 1990, p7.
9. **Nick Moore and Jane Steele.** *Information Intensive Britain*. Policy Studies Institute, 1991, p18.
10. **Rowlands**, ref. 7, p. 11.
11. **Rowlands**, ref. 7, p. 15.
12. **Nick Moore.** Policy issues in the multimedia age. *Journal of information science*, 1996, 22 (3), 213.
13. *National Information Infrastructure: Myths, Metaphors And Realities*
(URL: <http://www.pitt.edu/~malhotra/papers/niireport.html>).
14. **Mandel, M.J.** The real truth about the economy. *Business Week*, (Industrial/Technology Edition), 1994, November 7, pp. 110-118.
15. **Montvilof**, ref. 8, p7.
16. **Rowlands**, ref. 7, p. 37.

17. **Montvilof**, ref. 8, p 87.
18. **Rowlands**, ref. 7, p. 28.
19. **Nick Moore and Jane Steele**, ref.9, p115.
20. **Montvilof**, ref. 8, p115.
21. **Nick Moore**, ref. 10, 214 - 217.
22. *Ibid*, 214 – 217.
23. **Nick Moore**. *A strategic approach to formulating a National Information Policy*, Kuwait , 1994. *Information Policy and Strategic development*, China 1993
24. *Studies and Publications in Information Society*
(URL: www.ispo.cec.be/infosoc/promo/pubs.html).
25. *Alternative Networks*
(URL: www.ispo.cec.be/esis/Alternative/GRaltQ5.htm).
26. **OTE**, Annual Strategic Plan 1997.
27. *Study on Assessing the Present Situation of the Markets for Electronic Information Services in Greece*. NDC, December 1995.
28. *Ibid*.
29. **F. Tsimpoglou**. 'National Network for co-operation of R&T Libraries. Economic assessment of further exploitation' 'Infolibraries-Automatisation of Greek Libraries'. Conference, GRAPHIS, Thessaloniki 1994.
30. *The National Book Centre*
(URL: www.book.culture.gr).
31. **Feather J. & P. Sturges**. *Encyclopaedia of Information Science*. Routledge, 1997, p. 206.
32. *Ibid*, p. 206.
33. *Nomos*
(URL: www.vobs.at/WfS/sponsors/isoft/nomos.htm).
34. **Feather J. & P. Sturges**, ref. 30, p. 207.

35. *Legal Advisory Board*
(URL: www2.echo.lu/legal/en/news/9710/chapter9.html#1).
36. *Legal Advisory Board*
(URL: www2.echo.lu/legal/en/news/9710/chapter9.html#6).
37. **Feather J. & P. Sturges P**, ref. 30, p. 205.
38. *Law of the Greek Parliament*, 2472/97, 2 –20.
39. *Legal Advisory Board*
(URL: <http://www2.echo.lu/legal/en/news/9709/capter6.html>).
40. *Law of the Greek Parliament*, 2328/1995, 2 –15.
41. *TA NEA- 2/7/1998*
(URL: www.ta-nea.dolnet.gr)

TO VIMA 24/5/1998
(URL: www.tovima.dolnet.gr).
42. *TO VIMA 3/5/1998*
(URL: www.tovima.dolnet.gr).
43. *TOVIMA 10/5/1998*
(URL: www.tovima.dolnet.gr).
44. *TO VIMA 14/6/1998*
(URL: www.tovima.dolnet.gr).
45. *TO VIMA 10/5/1998*
(URL: www.tovima.dolnet.gr).
46. *TO VIMA 17/5/1998*
(URL: www.tovima.dolnet.gr).
47. *TO VIMA 14/6/1998*
(URL: www.tovima.dolnet.gr).
48. *The National Documentation Centre*
(URL: www.ekt.gr/ndc/ermhs/ermhome.htm).
49. *Periskopio Tis Epistimis*. The National Documentation Centre. September 1997, 209, 44-54.

50. *Membership Directory of the European Information Policy Support Network*
(URL: www2.echo.lu/impact/imo/ipndirto.html#NDC).
51. *IMPACT*
(URL: www.ekt.eie.gr/ndc/impact/4actlin.htm).
52. *The National Book Centre*
(URL: www.book.culture.gr).
53. *Ibid.*
54. *The Markets for Electronic Information Services in the European Economic Area*
(URL: www2.echo.lu/imo/en/ms-study.html).
55. European Information Services Market. *Journal of Information Science*. 24(1), 1998, 63-64.
56. *Ibid*, 205-206.
57. *Kefalaio*, 7/2/1998, 51.
58. *Kerdos* 21/1/1998, 22.
59. *TO VIMA* 19/4/1998
(URL: www.tovima.dolnet.gr).
60. *TO VIMA* 14/6/1998
(URL: www.tovima.dolnet.gr).
61. *TA NEA* 22/7/1998
(URL: www.ta-nea.dolnet.gr).
62. *IRIS Project*
(URL: www.ispo.cec.be/infosoc/promo/pubs.html).
63. *Study on Assessing the Present Situation of the Markets for Electronic Information Services in Greece*. NDC, December 1995.
64. *The EC Information Society Project Office*
(URL: www.ispo.cec.be)
65. *TO VIMA* 17/5/1998
(URL: www.tovima.dolnet.gr).

66. *IRIS Project*

(URL: www.ispo.cec.be/infosoc/promo/pubs.html)

67. *Ibid.*

Table 1 Greece - Basic Economic Figures

SURFACE*	13.195.741,3
POPULATION*	
Total	10.529.900
Active	3.886.157 37,7%
EMPLOYMENT*	
Total	3.571.957
Primary sector	668.776 18,7%
Secondary sector	852.946 23,9%
Tertiary sector	1.843.612 51,6%
UNEMPLOYMENT*	
Total	314.200
% Active	8,1
GDP**	
Total	14.422.533
Primary sector	1.982.789 13,7%
Secondary sector	3.714.774 25,8%
Tertiary sector	8.724.970 60,5%

*Source: NSSG, Population Census 1991.

** Source: NSSG, National Accounts, current prices, millions GRDs, 1993.

Table 2: Telecommunications Sector Profile, Greece

	1996**	1997*	1998*	1999*	2000*
Number of teleph.lines***	5320	5460	5585	5695	5800
Teleph lines/inhab.***	0,505	0,518	0,530	0,540	0,550
New tel.connections	170	140	125	110	105
Network Digitalisation(%)	42.76	55.2	63.6	72.0	80.3
Switching Digitalisation(%)	70.1	75.3	n.a	n.a	n.a
Repairs/100 inhab.	35.7	31	n.a	n.a	n.a
Density of cellular teleph. systems (subscribers/1000inh.)	32.2	44.6	60.7	73.1	80.7

* projections

** estimations

*** thousands

Source: OTE, Annual Strategic Plan 1997

Table 3: National Telecommunication Organisations - Comparative Data (1994)

	OTE	Telefonica	Portugal Telecom	Telia A.B - Sweden	P.P.T. Telecom - Netherlands	BT Group - UK
Operating Margin (%)	29	15	24	3	23	22
Net Profit Margin (%)	19	7	6	2	11	13
Ret. on Equity (%)	37	8	17	6	24	21
Dept/Equity	1.21	1.68	1.55	1.58	0.96	0.73
Current Ratio	0.59	0.47	0.69	1.12	1.2	1.02
Turnover Growth Rate (%)	25	14	23	0.35	7	3
Pre-Tax Profit Growth Rate (%)	36	10	129	-46	3	39
Connections/employee	192	203	n.a.	184	231	197
Turnover/employee (USD)	79500	135000	n.a.	174000	220000	155000
Capacity Utilisation (%)	91	n.a	n.a	n.a	90	85
Network Digitalisation	31	47.8	n.a	80	100	80
Turnover/Connection (USD)	410	663	n.a.	665	950	803
Investment/Connection (USD)	121	210	n.a.	127	198	122

Source: OTE, Business Plan, 1995

Table 4 -NDC Hosts

<i>NAME OF HOST</i>	<i>COUNTRY</i>	<i>NUMBER OF DATABASES</i>
HERMES	GREECE	26
DATA-STAR	SWITZERLAND	303
DIALOG	USA	460
DIMDI	GERMANY	90
ECHO*	LUXEMBOURG	20
ESA-IRS**	ITALY	98
EUROBASES	BELGIUM	10
FT PROFILE	UK	146
ORBIT***	UK	89
QUESTEL	FRANCE	99
STN	GERMANY	178

Source: Periskopio Tis Epistimis, September 1997, issue 209, pp 44-54

* In September 1998, it was announced that ECHO is closing.

** In 1998, it was announced that ESA – IRS was closing.

*** ORBIT has since merged with OVESKEL.

Table 5. Ministry of National Financing. EU Support Plan 1994-1999. Public Expenditures

<i>Field of Investment</i>	<i>Total Public Expenditure for 1994-1999</i>	<i>Public Expenditure for 1997</i>	<i>Public Expenditure for 1998</i>
		<i>Scheduled Exp.</i> <i>Actual Exp.</i>	<i>Scheduled Exp.</i> <i>Actual Exp.</i>
Telecommunications	340,488	162,054 71,922	46,837 90,176
Industry Services	1,173,270	205,327 181,617	228,783 342,769
Research and Technology	421,599	110,620 59,418	129,895 80,841
Modernising of Public Administration	305,400	55,924 38,883	107,306 93,000

Amounts in thousand million ECU

Appendix - Glossary

ABI	- <i>Advice Bureau International</i>
BTC	- <i>Bulgaria Telecom Organisation</i>
CCITT	- <i>Consultative Committee on International Telephone and Telegraphy</i>
DEI	- <i>Public Enterprise for Electricity</i>
EIS	- <i>Electronic Information Services</i>
ETSI	- <i>European Telecommunications Standards Institute</i>
EU	- <i>European Union</i>
GIS	- <i>Geographical Information Systems</i>
GNP	- <i>Gross National Product</i>
ICT	- <i>Information and Communication Technology</i>
ISBN	- <i>International Standard Book Number</i>
ISSN	- <i>International Standard Serial Number</i>
ISDN	- <i>Integrated Services Digital Network</i>
KEFE	- <i>Centre for Applied Philosophy</i>
LAN	- <i>Local Area Network</i>
LISA	- <i>Library and Information Science Abstracts</i>
NBC	- <i>National Book Centre</i>
NDC	- <i>National Documentation Centre</i>
NIP	- <i>National Information Policy</i>
NII	- <i>National Information Infrastructure</i>
NL	- <i>National Library</i>
NNSL	- <i>National Network of Scientific Libraries</i>
OECD	- <i>Organisation for Economic Cooperation and Development</i>
OTE	- <i>Organisation of Greek Telecommunications</i>
PDH	- <i>Plesiochronous Digital Hierarchy</i>
PTT	- <i>Post, Telephone and Telegraph administration</i>
SDH	- <i>Synchronous Digital Hierarchy</i>
SME	- <i>Small and Medium Enterprises</i>

Appendix - NDC and National Databases

Production of National Databases from NDC

"National Archive of Thesis"

"Greek Research"

"Collective Catalogue of Periodicals"

"Greek Information Market"

"Collective Catalogue of Periodicals of Greek History and Culture - ARGOS"

Hosting of National Databases from NDC

"Medicine Bibliography - Hippocrate"

"Models of Biomedicine Equipment"

"Representatives of Biomedicine Equipment"

"Urbanism - URSA DIS"

"Geographical Systems Information"

"Database of Technical Institution of Greece"

"Bibliography 2000"

"Archive of Greek Press"

Appendix - International databases of NDC (www.ekt.org.gr)

Health Science

- MEDLINE
- EMBASE-DRUG FILE
- BIOLOGICAL ABSTRACTS
- DRUG INFORMATION FULLTEXT/INTERNATIONAL PHARMACEUTICAL ABSTRACTS
- FDA-GUIDELINES FULLTEXT
- FDA-APPROVED DRUGS
- PSYCHLIT
- CAB ABSTRACTS
- CHEMICAL ABSTRACTS

Pharmaceutical

- EMBASE-DRUG FILE
- DRUG INFORMATION FULLTEXT/INTERNATIONAL PHARMACEUTICAL ABSTRACTS
- MEDLINE
- FDA-GUIDELINES FULLTEXT
- FDA-APPROVED DRUGS
- BIOLOGICAL ABSTRACTS
- CHEMICAL ABSTRACTS
- CAB ABSTRACTS

Biology

- BIOLOGICAL ABSTRACTS
- CHEMICAL ABSTRACTS
- CAB ABSTRACTS
- MEDLINE
- CHEMBANK

Environment

- BIOLOGICAL ABSTRACTS
- CHEMICAL ABSTRACTS
- CAB ABSTRACTS
- CHEMBANK

Science of Alimentation

- FOMAD
- FROSTI
- FOREGE
- FDA-GUIDELINES FULLTEXT
- BIOLOGICAL ABSTRACTS
- CHEMICAL ABSTRACTS
- MEDLINE

Chemistry

- ANALYTICAL ABSTRACTS
- CHEMICAL ABSTRACTS
- CHEMBANK
- POLYMER ENCYCLOPEDIA

Physics, Information Technology

- CHEMICAL ABSTRACTS
- INSPEC

LINGUISTICS AND LANGUAGE BEHAVIOUR ABSTRACTS
MATHSCIENCE
EI COMPENDEX PLUS

Mathematics

EI COMPENDEX PLUS
INSPEC
LINGUISTICS AND LANGUAGE BEHAVIOUR ABSTRACTS
MATHSCIENCE

Mechanics

CHEMICAL ABSTRACTS
EI COMPENDEX PLUS
INSPEC
MATHSCIENCE

Education

ERIC
LINGUISTICS AND LANGUAGE BEHAVIOUR ABSTRACTS
PSYCHLIT
SOCIAL SCIENCE CITATION INDEX

Human Sciences

ARTS AND HUMMANITIES CITATION INDEX
ATLA RELIGION INDEX
LINGUISTICS AND LANGUAGE BEHAVIOUR ABSTRACTS
PSYCHLIT
SOCIAL SCIENCE CITATION INDEX

Business and Administration

ABI-INFORM
ICAP

EU Information

EC-COMEXT
CELEX
CORDIS
TED

Library and Information Sciences

BIBLIOFILE
CD-MARK SUBJECTS
ISSN COMPACT
JOURNAL CITATION REPORT (SCIENCE)
JOURNAL CITATION REPORT (SOCIAL)
LISA (LIBRARY AND INFORMATION SCIENCE ABSTRACTS)
SWETSCAN

Books and Encyclopaedias

CUMULATIVE BOOK INDEX
GLOBAL BOOKS IN PRINT- BOWKER WHITAKER
MC GRAW HILL - MULTIMEDIA ENCYCLOPAEDIA OF S+T
POLYMER ENCYCLOPAEDIA
SERIALS ONLINE
ULRICH'S PLUS

Cited References

ARTS AND HUMMANITIES CITATION INDEX
JOURNAL CITATION REPORT (SCIENCE)
JOURNAL CITATION REPORT (SOCIAL)
SCIENCE CITATION INDEX
SOCIAL SCIENCE CITATION INDEX

Interdisciplinary Databases

ARTS AND HUMMANITIES CITATION INDEX
DISSERTATION ABSTRACTS
NTIS
SCIENCE CITATION INDEX
SOCIAL SCIENCE CITATION INDEX
SWETSCAN

Appendix- NDC Systems Functions (www.ekt.org.gr)

Basic indicators

Last update: 1-1-98

Greece

These pages present basic facts and technology indicators about the IS developments in Greece. For a European comparison, please [click here](#).

A. Foreign telecom 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
Total number of conventional lines	4975998	5162711	5328690	5414908
Total number of ISDN lines (subscriptions)	**	**	799	8350
Total number of mobile phone lines	158095	286921	554217	950000 *
TOTAL NUMBER OF LINES	5134093	5449632	5883706	6373258

Sources: OTE, Panafon, Telestet

*estimation by mobile telephony companies

**pilot phase

	End 1994	End 1995	End 1996	End 1997
Total number of conventional lines per 100 inh.	47,5	49.3	50.9	51.7
Total number of ISDN lines (subscriptions) per 100 inh.	-	-	0.007	0.08
Total number of mobile phone lines per 100 inh.	1.5	2.7	5.3	~ 9
TOTAL NUMBER OF LINES per 100 inh.	49	52	56.2	60.8

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

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	4,100 dr. / 13.1 ECU (6.54 each)
ISDN line	8,000 dr./ 25,5 ECU

Sources: OTE

C - Personal computers

	End 1997
Total number of Home PCs	~50,000
Total Number of Business PCs	~550,000
Total number of PCs	~600,000

	End 1997
Total number of Home PCs per 100 inh.	~0.48
Total Number of Business PCs per 100 inh.	~5.25
Total number of PCs per 100 inh.	~5.72

	End 1997
Total number of PCs with modem	~120,000
Total number of PCs with modem / total number of PCs	~0.2

Sources: The estimation is based on sales data for the years 1992-1996 (source: Strategic International S.A.). The estimation for 1997 sales was made by the market development rate which is about 16% for 1997. In 1996 the 4% of the total number of PCs that were sold were home PCs. The 6% of the total Information Technology market was referring to telecommunications equipment, the 22% of companies are connected using modem and during the last two years there is a sales rate of about 40,000-50,000 modems/year (source: modem providing companies)

D - Internet

	End 1996	End 1997
% of PCs connected to Internet (using host data)	n.a.	~10%*
Number of households with Internet access	n.a.	~24,000 *
Number of companies with Internet access	n.a.	~14,000 *
Number of Internet hosts (servers)	456 (domains)	1168 (domains)
	16 738	28 131
Number of access providers	n.a.	73

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
Estimate of the total number of companies using EDI	300
Favoured sectors in which EDI is most used	Trade / Consumer goods

F - Miscellaneous

<i>Use of electronic mail</i>	Total number	Number per 100 inh.	Last reference date
E-mail addresses	~70,000*	0.67	
Domain names	1998	0.02	1/10/97

Sources: <http://www.open.gr>

*estimation by Hellas On Line

[ESIS Team](#)[Acronyms](#)[home](#) [page](#)

© 1997 ECSC-EC-EAEC

BIBLIOLOGICAL LIBRARY

On-line Search using the WWW to Z39.50 Gateway against
N.B.C's Bibliological Library.

Fill-in this search form:

Subject	
---------	--

	and	
--	-----	--

Subject	
---------	--

	and	
--	-----	--

Subject	
---------	--

--

Search

Reset

Number of records to display in the result set list:

20

[New Target](#) | [View History](#)

NATIONAL BOOK CENTRE OF GREECE

[\[The National Book Centre\]](#)

[\[Books in Greece\]](#)

[\[Bibliological Library\]](#)

[\[Diavazo Magazine\]](#)

[\[The Bookshops Propose New Books\]](#)

[\[Books Around the World\]](#)

[\[Hide Frames\]](#)

[hellenic](#)
[BOOKSPACE](#)

Tab. 5.1: **Overall Revenues (MECU)**
by Type of Suppliers and Type of Sevrvices/Products

Type of services/products	TYPES OF SUPPLIERS								TOTAL
	Hosts retrospec.	Hosts real-time	Videotex Services	Audiotex Services	Electronic-mail services	CD-ROM distrib.	Other offline distrib.	Other suppliers	
Database Production	10,07	0,48	0,02			0,22			10,78
Retrospec. online database services	12,58								12,58
Real-time info services	10,07	0,95			1,67				12,69
Videotex Services			0,27						0,27
Audiotex Services									
Electronic-mail Services	5,03	0,71	0,03		3,75				9,53
Fax-based info services									
CD-ROM	2,52					0,60			3,12
Other offline info products						0,11			0,11
Printed products									
Other services/products	10,07	2,62	0,02		2,92	0,16			15,78
TOTAL	50,33	4,76	0,33		8,33	1,09			64,85

Tab. 7.1: Analysis of Revenues by Subject Area (in MECU)

	TYPES OF SUPPLIERS								TOTAL
	Hosts retrospec.	Hosts real-time	Videotex Services	Audiotex Services	Electronic- mail services	CD-ROM distrib.	Other offline distrib.	Other suppliers	
Finance/stock exchange/banking	5,03								5,03
Company profiles credit ratings		0,48							0,48
Further business and economic info		1,43	0,27						1,70
Legal information	15,10					0,22			15,32
Patent information									
Scientific/technical medical info	20,13	2,38				0,55			23,06
Government info/ political news	10,07	0,24				0,22			10,52
Travel information		0,24	0,03						0,27
Other information			0,03		8,33	0,11			8,48
TOTAL	50,33	4,76	0,33		8,33	1,09			64,85

Tab. U5:

**Barriers of Using Electronic
Information Services in 1994**

Barriers	IMPORTANCE RATING				
	5	4	3	2	1
Lack of awareness	20%	10%	7%	27%	13%
Lack of experienced staff	10%	23%	13%	13%	17%
Technical barriers	3%	10%	23%	17%	20%
Lack of user-friendliness	7%	3%	7%	20%	27%
Info required is not available	3%	10%	10%	20%	23%
Language problems	3%	3%	17%	17%	27%
Cost-benefit relation inadequate	3%	13%	10%	20%	10%
Prices for host services too high	7%	13%	20%	17%	10%
Staff costs too expensive	10%	0%	13%	17%	23%
Resistance from management	0%	10%	7%	17%	23%
Budget reasons	13%	10%	27%	13%	7%
Network deficiencies	3%	13%	27%	13%	13%
Further reasons	3%	0%	0%	0%	0%

**Percentage of Distribution
of 100 billion drach. 1998-1999**

Educational Organisations	20 %
Modernising of Municipalities	15 %
Project 'Kleisthenis'	15 %
Custom Houses	15 %
Public Field Organisations	15 %
Perfectures	15 %

Source: Kerdos 21/1/1998, page 22

40198121