STAGE (Science, Technology and Governance in Europe)
Discussion Paper 18
January 2004

ICTs in Greece

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STAGE is a Thematic Network under the Fifth Framework Programme (HPSE-CT2001-50003). STAGE gratefully acknowledges the support of the European Commission

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Introduction

The ICTs debate in Greece is a new and emerging one: it was not before 2000 that the Greek government took any steps in promoting the Information Society. Due to that fact, we are now witnessing but the initial stages of the ICTs' debate within the national Greek framework. As a consequence this article, after offering an overview of the EU and Greek state initiatives on the field, will present the emerging actors and debates on the issue and discuss the possible future developments, especially in the light of the Greek anchoring case on biotechnologies.

Our analysis shows that the ICTs debate is currently perceived as an issue best dealt with by specialists and governmental committees, while public deliberation is totally lacking: thus, we are witnessing 'discretionary governance' policymaking[1]. Yet, sidetracking the 'formal' debate, we are also observing an ever increasing public deliberation over the mass media, where a number of actors, such as the state; scientists; private companies; and the public, voice a number of interacting claims and concerns. It is therefore plausible to expect that as this new policy domain of ICTs filters down to the Greek public we are going to experience increasing challenges to the existing governance model by those currently excluded from it.

Policy formation and outcomes: The EU initiatives

ICTs enter the Greek national policy making following decisions at the EU level. Stemming from an in-depth discussion about the weaknesses of the European Economies between the Heads of State, the European Commission presented in 1993 the 'White Paper on Growth, Competitiveness, Employment: The Challenges and Ways Forward into the 21st Century' (EC, 1993) as a medium-term strategy for growth, competitiveness and employment. It draws largely on contributions by the Member States and aims primarily to cope with the

[1] Hagendijk R & Kallerud E. (2003), Changing conceptions and practices of governance in Science and Technology in Europe: A framework for analysis

three types of unemployment: cyclical, structural, and technological. This White Paper declares the ways forward for the EU into the 21st century:

- A healthy and stable economy.
- An open economy.
- A decentralized economy.
- A more competitive economy.
- An economy characterized by solidarity.

The corollary to decentralization, as defined in the relevant section of this White Paper, is information sharing and communication. Thus, special mention was made of the notion of the *Information Society* (IS). Among others, the Paper noted the radical change the multimedia world represents. It was also stressed that the issue of the Information Society is a crucial aspect of the survival or decline of Europe, for it can provide an answer to the new needs of European Societies. The Paper proposed the acceleration of the establishment of 'information highways' (broadband networks) and the development of the corresponding services and applications.

Following the White Paper, a report was prepared by a group of prominent persons for the Corfu European Council meeting in June 1994. Its task was to specify the necessary measures to be taken into consideration by the Community and the Member States for the information area infrastructures. On this basis, the Council would adopt an operational programme defining precise procedures for actions and the necessary means. The final report, known as the Bangemann Report (Bangemann *et al*., 1994), recommended:

- Changes in the telecom regulatory framework, i.e., acceleration of the process of liberalisation, normalization of tariffs etc.
- Protection of the intellectual property rights, privacy and security of information.
- Extension of the European telecom building blocks, such as the EURO-ISDN.
- Promotion of mobile and satellite communications.
- Expansion of the basic trans-European services, including e-mail, file transfer, video services.

As a follow-up to the Bangemann Report in 1994 the Commission issued ‘Europe’s way to the information society: An Action Plan’ (EC, 1994), which was a Communication to the Council and the European Parliament and to the Economic and Social Committee and the Committee of Regions. The Commission recognized that the “digital revolution” triggered structural changes with correspondingly high economic stakes. This process was regarded as one that cannot be stopped and would lead eventually to a knowledge-based economy. This Communication presented an overview of the Commission’s work programme on the information society. The Action Plan was adopted in July 1994 and it covered four areas:

- The regulatory and legal framework.
- Networks, basic services, applications and content.
- Social, societal and cultural aspects.
- Promotion of the information society.

In its next Communication of 1996 ‘Information Society: From Corfu to Dublin - The New Emerging Priorities’ (EC, 1996a), the Commission outlined progress and results of the implementation of the Action Plan, which was adopted in July 1994. At that time, there was a more comprehensive picture of the measures necessary to achieve the objectives of this IS Action Plan. Furthermore, new questions and issues had emerged. For that reason, the Commission suggested that it was time for a review of the Action Plan. Four main policy lines were identified as of equal importance priorities:

- Improvement of the business environment.
- Investment on the future, namely, IS research.
- People at the centre.
- Meeting the global challenge.

Finally, the Commission invited the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions to give their opinion on these key policy orientations in order to prepare a revised Action Plan in time for the Dublin European Council.

In the same year (1996) the Commission issued the ‘Green Paper: Living and Working in the Information Society: People First’ (EC, 1996b). This Green Paper was part of a package of initiatives developed by the Commission to update and take forward the July 1994 Action Plan. Acknowledging the concerns of skill revolution and job insecurity as well as the fact of a new world of work propelled by the emerging information society, the Green Paper continued in identifying the new challenges:

- To build knowledge and raise awareness of new forms of work organisation.
- To modernise the institutions of working life.
- To ensure that SMEs will take full advantage of working life.

The Green Paper also discussed several issues concerning the employment and the cohesion needed for living in the information society.

The revised Action Plan was announced later in 1996 through the Commission’s Communication ‘Europe’s way to the information society: A Rolling Action Plan’ (EC, 1996c). It illustrated thoughts and initiatives necessary to launch a second phase of the EU information society strategy. This revised Action Plan aimed to address Community actions, which were complementary to those undertaken by the Member States. The priorities of the Rolling Action Plan were to:

- Improve the business environment through the efficient and coherent implementation of the liberalised telecommunications environment and thorough application of the internal market principles.
- Invest in the future primarily by recognizing that the information society starts in the classroom. Emphasis was also made in lifelong learning.
- Encourage European businesses to keep up with the fast pace of global technology development.
- Establish a number of actions to address the key issues identified in the Green Paper ‘Living and Working in the Information Society: People First’ and related documents concerning how to put people at the centre of the information society.

- Enhance the Commission's negotiating powers in order to strengthen the EU's negotiating position at international level recognising that setting global rules is an essential element of the information society.

In April 1996, the Commission issued an update titled 'Europe's Way to the Information Society: Update of the Action Plan' (EC, 1996d). This update portrayed the status of the Action Plan on Information Society implementation as it was. It consisted of tables containing the specific measures defined from the Action Plan and the corresponding decision making process together with relevant explanations and implications. The areas covered were:

- The regulatory and legal framework.
- Network, basic services, applications and content.
- Social, societal and cultural aspects.
- Promotional activities.

In December 1997 a Green Paper was issued titled 'Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, and the Implications for Regulation. Towards an Information Society Approach' (EC, 1997). This Green Paper described the changes, the developments and their implications caused by the emergence of information society in Europe. The Paper proposed that if Europe could embrace these changes by creating an environment supporting rather than holding back the process of change, this would be a powerful motor for job creation and growth, increasing consumer choice and promoting cultural diversity. The paper analysed issues, identified options and it posed questions on the following:

- The convergence phenomenon.
- The actual and potential barriers, which might hold back technological and market developments.
- The existing, at that time, and the possible future regulatory frameworks or approaches.
- A set of principles for the future regulatory policy in the sectors affected by the convergence.

On the basis of these issues, the Commission expected a 5 months consultation period to be enough and set the timing for a new Communication around June 1998.

In the Communication of March 1999 titled 'Results of the Public Consultation on the Green Paper' (EC, 1999a) the Commission reported to the Community institutions and the public at large on the consultation associated with the Convergence Green Paper of December 1996. The public consultation had been divided in two stages:

- December 1997 - May 1998. The conclusion of this stage was that the convergence of tech platforms and network infrastructures was a reality and that similar regulatory conditions should therefore apply to all such infrastructures. Also, the Community institutions underlined the importance of maintaining European competitiveness in the face of rapid technological and market change leading to the realization of the Information Society.
- July - November 1998: Questions posed on what the Commission perceived as three key areas, that is:
  1. Access to networks, investment, innovation and content production,
  2. Balancing the regulation between public interests and
  3. Competition considerations.

  Answers received from over 80 organisations, most of them concerned with access issues.

A series of key messages emerged from this consultation, which were codified in this Communication, along with proposals for future steps and actions.

In 1999, a new Communication titled 'Towards a New Framework for Electronic Communications Infrastructure and Associated Services' (EC, 1999b) appeared which was the actual 1999 Communications Review. It presented an overview of the EU regulations in telecommunications and proposed the main elements for a new framework for communications infrastructure and associated services.

The European Council held a special meeting on 23-24 March 2000 in Lisbon (EC, 2000a) to agree on a new strategic goal for the Union in order to strengthen employment, economic reform and social cohesion as part of a knowledge-based economy. This goal set in 'Presidency Conclusions' was for Europe to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion. For this goal to be succeeded, the Council declared that an overall strategy is required aiming, among others, to prepare the transition to a knowledge-based economy and society by better policies for the Information Society and R&D, as well as by stepping up the process of structural reform for competitiveness and innovation and by completing the internal market. Special mention was given to the openness of the forthcoming Information Society and the Council invited the Commission to draw up a comprehensive *eEurope Action Plan* using an open method of coordination based on the benchmarking of national initiatives, combined with the running *e*Europe initiative as well as its Communication "Strategies for jobs in the Information Society". The Council also emphasised that all businesses and citizens must have access to inexpensive, world class communications infrastructure and a wide range of related services. In particular, different means of access should prevent info-exclusion. Finally, the Council declared that the realization of Europe's full e-potential depends on creating the conditions for electronic commerce and the Internet to flourish, so that the e-commerce rules should be predictable and inspire business and consumer confidence.

The European Council's next meeting was in Stockholm on 23 and 24 March of 2001 for its first Annual Spring Meeting on economic and social questions (EC, 2001a). The Stockholm European Council focused on how to modernise the European model and attain the Union's strategic goal for the next decade decided at Lisbon: to become the most competitive and dynamic knowledge-based economy in the world. Among others, the Council discussed how to create more and better jobs, accelerate economic reform, modernise the European social model and harness new technologies. In the account of education, improving basic skills, particularly information technology and digital skills, was set as a top priority to make the Union the most competitive and dynamic knowledge-based economy in the world. This priority included education policies and lifelong learning

as well as the overcoming of the shortfall in the recruitment of scientific and technical staff. Special attention was given to the *e*Europe initiative. The Council, although recognized the progress that had been made so far, stated that Europeans were not yet fully using the potential of Internet in key areas such as public services, e-government or e-commerce. It was also re-affirmed that the success of the knowledge society depends on high levels of digital literacy and on creating conditions in areas such as network security and data protection and privacy, in which people have confidence in using new services. In that context, the Council pointed out the necessary steps to be taken, such as:

- regulatory framework for third generation mobile communications,
- adoption of the telecoms package,
- an enabling environment for wireless Europe, next generation Internet (IPv6),
- the application of VAT in e-commerce,
- a comprehensive strategy on security of electronic networks.

Furthermore, the Council noted that the Commission had announced its intention to propose additional targets for connecting schools to the Internet, to present a Communication promoting on-line dispute resolution systems and to support eSchola, a Europe-wide action aiming to promote the use of new technologies and develop online school twinning.

The Commission identified the reform of European governance as one of its four strategic objectives in early 2000. The 'White Paper on European Governance' of 2001 (EC, 2001b) concerned the way in which the Union uses the powers given by its citizens. Reform was the main target, so that people could see changes well before further modification of the EU Treaties. The White Paper proposed opening up the policy-making process to get more people and organisations involved in shaping and delivering EU policy, greater openness, accountability and responsibility for all those involved. It proposed a series of initial actions for:

- Better involvement and more openness.
- Better policies, regulations and delivery.
- Global governance.

- Refocused Institutions, Union's policies and adaptation of the way they work.

eEurope & GoDigital Initiatives

*e*Europe (EC, 2000b) is a political initiative to ensure that all citizens of the EU as well as the future generations will benefit from the changes the 'information revolution' is bringing. The main purposes of '*e*Europe 2000' were:

- To bring every EU citizen as well as every business, home and school into the digital age and online.
- To create a digitally literate Europe, supported by an entrepreneurial culture ready to finance and develop new ideas.
- To ensure the whole process is socially inclusive, builds consumer trust and strengthens social cohesion.

In June 2000 the Feira European Council adopted the main Action Plan for *e*Europe titled '*e*Europe 2002 Action Plan' (EC, 2000c). Its aim was to ensure that the targets set by the Lisbon European Council of March 2000 could be reached by defining the necessary measures. The actions are clustered around these three main objectives:

- A cheaper, faster, secure Internet.
- Investing in people and skills.
- Stimulate the use of the Internet.

Another adopted programme in the context of *e*Europe was '*e*Europe+ 2003' (EC, 2001c). This programme is a co-operative effort to implement the Information Society in Europe targeting at the Candidate Countries. It is an "*e*Europe-like Action Plan" by and for the Candidate Countries as a compliment to the EU political commitments in order to try and broaden the base for achieving the ambitious goal set for Europe.

The *e*Europe 2002 Action Plan's objective three 'Stimulate the use of the Internet' includes an action to encourage SMEs to 'Go Digital'. The Plan identified small and medium-sized enterprises (SMEs) as critically important to efforts to bring about *e*Europe, and set specific

targets to prepare them for its advent. The objective was to encourage SMEs to Go Digital. In its Communication 'Helping SMEs to GoDigital Action Plan 2001' (EC, 2001d) the Commission undertook specific initiatives aiming at:

- identifying the main obstacles SMEs face as they engage in e-business,
- proposing specific actions to help SMEs Go Digital, in particular by building on existing policies and initiatives,
- ensuring consistency among the various policies and initiatives to support SMEs going digital at the European, national, regional and local levels, and
- learning from practical experience and to benchmark various strategies to help SMEs to go digital.

In this Communication attempted to identify the specific SME needs to fully reap the benefits of e-business and to present specific GoDigital initiatives to be implemented in 2001 by the Commission. In 2002, a report titled 'GoDigital Progress Report 2001-2002' (EC, 2002a) was issued illustrating the progress in the implementation of the GoDigital Action Plan of 2001.

This Commission's Communication '*e*Europe 2005: An Information Society for All' (EC, 2002b) is an action plan presented in view of the Sevilla European Council held in June 2002. The objective of this Action Plan is to provide a favourable environment for private investment and for the creation of new jobs, to boost productivity, to modernise public services, and to give everyone the opportunity to participate in the global information society. *e*Europe 2005 therefore aims to stimulate secure services, applications and content based on a widely available broadband infrastructure. By 2005, Europe should have:

- modern online public services,
- e-government,
- e-learning services,
- e-health services,
- a dynamic e-business environment,

and, as an enabler for these:

- widespread availability of broadband access at competitive price,
- a secure information infrastructure.

This action plan comprises four separate but interlinked tools:

- Policy measures to review and adapt legislation in national and EU level.
- Good practices, exchange of experience, but also sharing the lessons from failures.
- Benchmarking of the progress made in achieving the objectives and of the policies.
- Overall co-ordination of existing policies.

Framing

Setting the agenda

The Greek state responded to the EU initiatives in the late nineties. Thus, in early 2000s, two are the main policy frameworks in Greece to promote the Greek Information Society (IS): (a) the Operational Programmes 'Information Society' and (b) the 'Competitiveness' programme, both funded by the 3rd Community Support Framework of the European Union and promoted by the Greek government. The main aim of the 'Information Society' programme is to use the IS in order to promote competitiveness in enterprises and to modernise public administration by using ICTs. The 'Competitiveness' programme seeks to improve business support networks for SMEs, to encourage start-ups and to provide enhanced access to finance. From its inception, no other societal actor was involved into the policy making, but rather the government created *ad hoc* committees to implement and supervise the decided policies.

Framing issues

The Greek Government in 1999 recognised the fact that we are living in an environment rapidly transformed by ICTs. These technologies "transform the way we work, learn, do

business and communicate, creating, thus, a new Information Society as well as opening new opportunities for development prosperity and quality of life" (Greek Government, 1999). For these reasons, the Greek Government declared the participation of Greece, equally with all EU members, in this emerging Information Society as having a major priority. In doing this, the primary goal of the governmental policy is the active participation of citizens in the creation of the Greek Information Society.

Thus, in 2001, the Greek 'Information Society' programme was officially launched[2], with a total budget of 2.8 billion euros (the EU's contribution amounting to a bit less than 61%) for the 2000-2006 period, while a Greek IS web-site was created (http://www.infosociety.gr), aiming to increase the public awareness and involvement by presenting up-to-date information on IS policies and their implementation as well as providing a forum for dialogue and exchange of views. The Greek IS foci were numerous. It undertook initiatives, which aim to exploit the new ICTs for:

- The creation of an open and effective Government.
- Economic development and job creation.
- The transformation of the education system.
- The improvement of quality of life.
- The protection and promotion of Greek culture and civilization.
- The equal participation of regions in the global village.
- The development of the national communications infrastructure.

Along with the above, the Greek IS policy includes initiatives for the protection of citizens' rights and of course the public participation in the digital age.

Accordingly, the IS budget breaks down as follows[3]:

Information Society **Thematic Axis**	**Resources allocation (as % of the total budget)**
Education-Culture & Civilisation	14.83%
Citizen's Support	30.97%

[2] Interestingly enough, the IS scheme is placed under the aegis of the Greek Ministry of Finance
[3] Information Society report, 14 January 2004 (http://www.infosociety.gr)

Development-Employment	31.76%
Communications	20.05%
Technical Assistance	2.39%

Source: Information Society report, 14 January 2004 (http://www.infosociety.gr)

The main targets set by the Greek Government in the context of the 'Information Society' Operational Programme are shown in the following table:

Indicator	Starting point	Level at starting point	Target for 2006	*Situation in 2003*
Internet users / 100 inhabitants	2000	5	50	*27* [4]
Number of pupils per PC	2000	51	10	*20* [4]
Percentage of schools connected to the Internet	2000	5	100	*50* [5]
Number of PCs per 100 civil servants	2000	15	50	*N/A*
Percentage of health centres connected	2000	0	100	*N/A*
Percentage of small and medium-sized enterprises involved in e-commerce	2000	<1	15	*3* [6] *(for 2002)*
Percentage of the population covered by frequency spectrum monitoring systems	2000	5	80	*N/A*
Information society expenditure, % of GNP	2000	4.1	6.2	*N/A*

Source: Operational Program for the Information Society (Greek Government, 1999)

An action line of the programmes 'Information Society' and 'Competitiveness', was the programme 'Go-Online, an initiative of the General Secretariat of Industry (GSI) under the Ministry of Development, which has launched in 2000 (Greek GSI, 2000). Its main objective is to support small and medium sized enterprises (SMEs) so that the latter might be familiarised with digital economy and exploit the potential and the opportunities given by the Internet. This programme covers the whole country - all 13 regions - during the period 2000-2003 and a total of 120 million euros will be spent. Enterprises that can benefit

[4] Data for 2003, Information Society bulletin, December 2003
[5] Panhellenic School Network, Report, November 2003 (http://www.sch.gr). For secondary schools the 100% internet connection target is already reached. Furthermore, the number of pupils per PC stands at 13.10
[6] E-business, The use of Information & Communication Technologies in small and medium-sized enterprises, March 2003 (http://www.ebusinessforum.gr). Note that the actual figures can be much lower since the study is using as a population size (N) dating back to 1995 from which to calculate the percentages. The report itself

from the programme must have fewer than 10 employees, except from join stock companies and self-employed professionals. For this purpose, SMEs are divided into three categories:

- SMEs that do not have the infrastructure necessary for internet connection;
- SMEs that have an internet connection and active e-mail address ('Internet-ready');
- SMEs running a web-site capable of conducting transactions with customers and/or suppliers (B2C and B2B).

The Go-Online programme targets to SMEs of the two first categories aiming to 'upgrade' them into the next category, namely, from the first to the second and from the second to the third. GRNET, the Greek Research and Technology Network has the responsibility for the technical implementation of the programme.

Under the umbrella programme 'Go Online' there are a number of sub-programmes and iniatitives. For example, in the initiative 'Network Yourself', part of the 'Go Online' programme, Greece is targeting 50,000 SMEs. The main aim of this initiative is to help companies understand the importance of the Internet and to create digital awareness. Another programme named 'Electronic Commerce Centres' (ECC) aims at the implementation of SMEs support policies. Currently there are 14 Greek ECCs up and running. The centres are there to provide information to all those involved in commercial transactions and they will assist SMEs with: access to information; electronic promotion and advertisement; digital processing of commercial transactions through the Internet. Each ECC has defined a target for e-business penetration in its region in terms of awareness, training and paid service.

In the same direction of supporting SMEs, a special fund called 'Capital of Entrepreneurial Participations of High Technology' has been set up to support new enterprises that are technology and knowledge intensive and for the encouragement of new entrepreneurs. At last, the Greek Ministry of Development is providing incentives for SMEs to cluster and

(p.4) claims that 'in 2002 we have witnessed a stalling [of the rate of] the use of PCs in small & medium-sized enterprises'

collaborate over electronic commerce and electronic data interchanges. The measure is aimed to support specific online business procedures that will attract a large number of Greek SMEs to the use of eCommerce. The projects cover many areas of collaboration including: Implementing innovative applications of existing technologies, techniques and methods of electronic commerce; combining two or more technologies of eCommerce; upgrading or automation of one or more basic operations of commerce (product promotion etc); promoting electronic collaborations among similar companies or complementary fields; accruing actual consequences in the competitive advantages of company-users.

A primordial forum for public deliberation was launched in 2001, the 'eBusiness Forum', envisaged as a mechanism for the exchange of views between the main economic, social and academic actors regarding the competitiveness of Greek business in the new digital and e-business context (Greek GSI, 2001a). It is an initiative undertaken by the General Secretariat of Industry, which is under the jurisdiction of the Ministry of Development, and it is a part of the Operational Programme 'Information Society' of the Greek Government. Main targets of this forum are the following:

- To raise and broaden the dialogue about the globalised digital economy.
- To watch and report the progress made for e-business in Greece.
- To increase public, consumer and business awareness on e-business issues.
- To co-ordinate the relative initiatives in Greece.
- To suggest solutions to all obstacles needed to overcome for the creation of a prosperous digital business environment and the normal introduction of Greek business in the new digital economy.
- To interconnect the Greek initiatives in the e-business sector with corresponding international initiatives as well as the diffusion of the worldwide relative experience in Greece.

The eBusiness Forum maintains a web-site, where anyone can enter into discussions on specific topics concerning the ways to promote the competitiveness of Greek businesses in the context of the Information Society and electronic commerce. Moreover, the site is hosting up-to-date announcements on programmes and events related to its target. The site

has been put up to provide a range of information required by businesses, which want to trade in the digital economy. This includes e-business articles, links to consulting houses, links to business facilitators and information on European and regional e-business programmes and subvention opportunities.

As it becomes apparent from the previous discussion, it was the Greek State which promoted (without any consultation) the priority axis of the 'Information Society' program, aiming to familiarise the citizens with ICTs (especially schoolchildren and small & medium-sized enterprises) as well as to renovate the backward public administration. A number of committees were set to supervise the implementation of the program, all under powerful, existing Ministries. In brief, the ICTs was perceived as a case where EU funds were allocated for a number of specific, developmental, aims and the government simply had to carry out the tasks assigned. Thus, a major opportunity to publicise the issue was lost: public consultation is evidently (still) lacking while the various 'forums' are more like closed clubs were those already initiated are (effectively) allowed to participate: thus, the Greek government's 'E-business forum' initiative of 2001 is in itself a contradiction in terms, institutionalising an on-line deliberation concerning how to better integrate those currently off-line!

Framing expertise and the publics

A survey (EC, 2002c) was conducted by Gallup Europe in November 2001 on request of the European Commission (DG Information Society). 36081 European residents were polled by telephone between November 1 and 19, 2001. For each country, 2000 interviews were carried out (except in Germany were 4000 interviews were conducted). Its results are presented in the following table. In general, this survey has identified that Greece scores the lowest amongst all EU countries in the majority of cases.

In general, it was established that the European Internet users were: "mostly young men, educated, living in a metropolitan area and belonging to the most fortunate classes (executives, liberal professors and self-employed)". This remark also holds true in the case

of e-governance: almost one in two EU internet users has contacted a public service using the Internet, yet they were rather individuals with higher levels of education and belonging to the highest occupational categories.

Flash Eurobarometer 122 (November 2001)	**Greece (N=2000)**	**EU-15 (N=32000)**
Household Access		
Household access to the internet	*9.9%*	*37.7%*
Connection via telephone lines	79.9%	71.8%
Connection via ISDN	9.6%	16%
Connection via ADSL	0.5%	6.3%
Use of modem cables	1.5%	9.1%
Mobile wireless connection	1%	3.5%
Household terminal		
Desktop/laptop computers	92.9%	97.7%
TV set-top box	0.5%	2.8%
Mobile telephone (e.g. WAP)	0.0%	5.8%
Internet usage		
Personal use of the Internet	*16.8%*	*47.9%*
Using Internet at home	44.5%	68.6%
Using Internet at work	32.5%	40.1%
Using Internet at school/University	15.5%	19.9%
Using Internet at a public access point	4.5%	11.9%
Using Internet at an internet-cafe	25.7%	9.1%
Frequency of usage		
On a daily basis	33.7%	40.8%
Several times a week	30.4%	25.8%
Purpose of usage		
Send/retrieve e-mail	54.6%	77.4%
News/topical items	42.4%	73.1%

To improve one's education	37.3%	44.8%
Travel information/tickets	30.1%	60.6%
Medical advice	23.1%	33.2%
E-government		
Use of the internet in order to…		
Find administrative information	24.4%	35.2%
Send the administration an e-mail	23.3%	20.2%
Fill forms/procedures	9%	21.6%

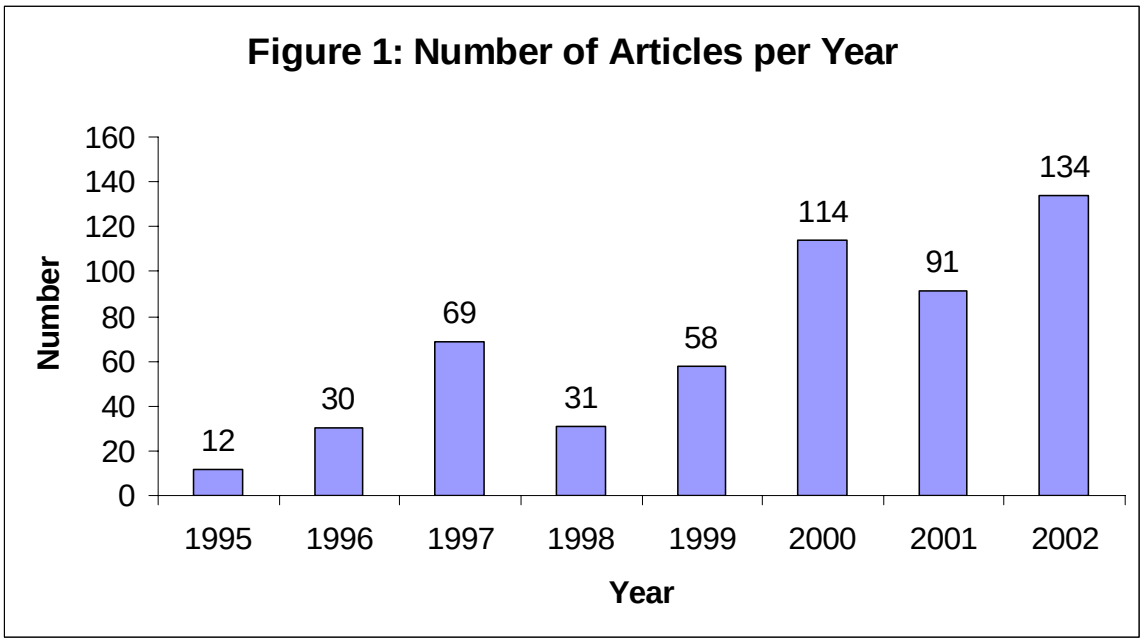
A Greece-specific research was conducted a few earlier (June-July 2001), with a noticeably larger sample (N=6095), for the the Greek Research and Technology Network (GRNET) S.A. (Greek GSI, 2001b). The research, focusing on 15 year old or elder individuals, monitor significant differences across age; education level; income level; geographical area of residence and urbanization level; and, for the active population, the sector of economic activity and the size of the corporation in occupied persons. Thus, the survey indicated also major differences in PC & Internet usage between regions as well as inside a region. Big corporations scored higher in PC or Internet usage, while smaller corporations do not appear to embrace the new tools. The level of education appears a very important factor. One out of two Greeks who had higher education used a PC, while the proportion for those with elementary education is 1 out of 50. One structural obstacle in the further diffusion of ICTs in Greece appears to be the relatively high percentage (37%) of people having only elementary education. Of those people 86% appears to be older than 45 years old. For this reason, an improvement of the general educational level is needed if Greece wants to attain the reduction of the existing 'digital divide'.

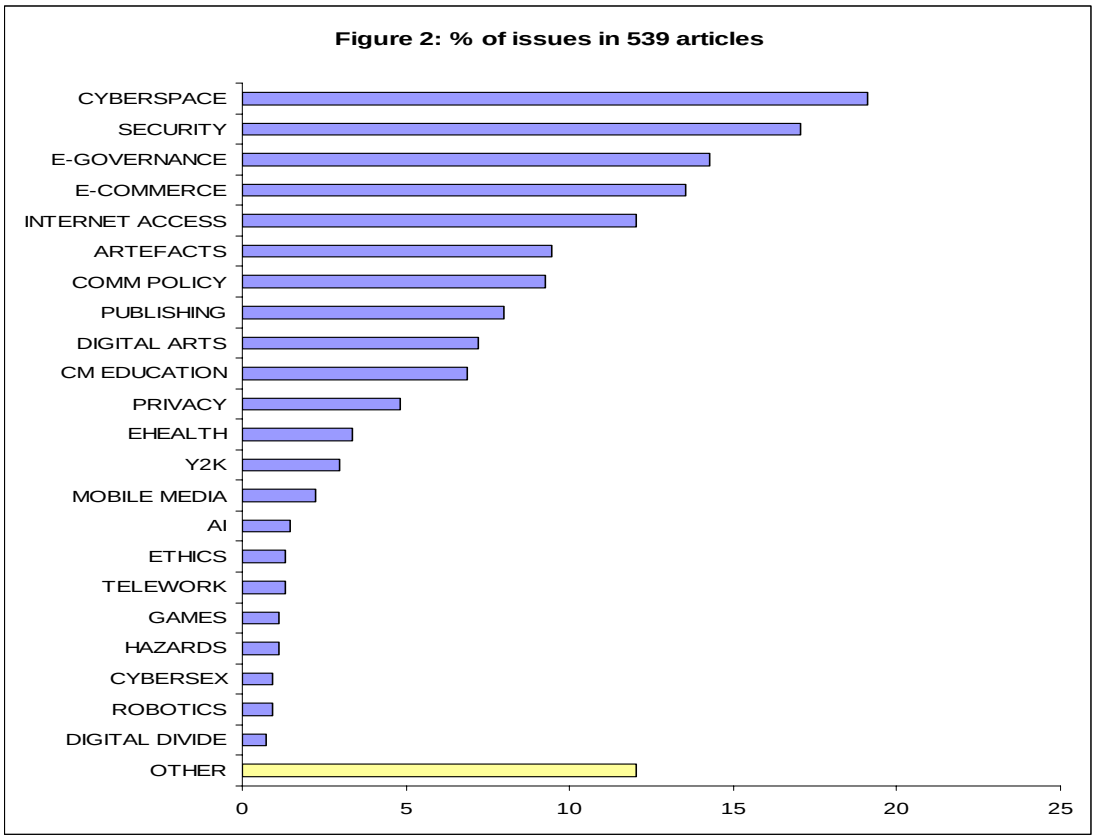
Forms and formats of participation

We have mentioned earlier that the Greek State did not institutionalize a mechanism for public consultation, but rather the ICTs issue has remained a technical one, to be dealt with

by specialists and governmental committees. Yet this fact did not hinder a growing public debate within the mass media.

Trying to map this emerging public debate, our team has surveyed one major Greek daily newspaper (*Eleftherotypia*) for articles dealing with ICTs, for the period 1995 to 2002. The number of articles dealing with ICTs shows a sustained increase (Figure 1), while one can observe that even non technical issues, *stricto senso*, feature amongst the topics covered (such as 'e-Governance', privacy, ethics etc.) (Figure 2)



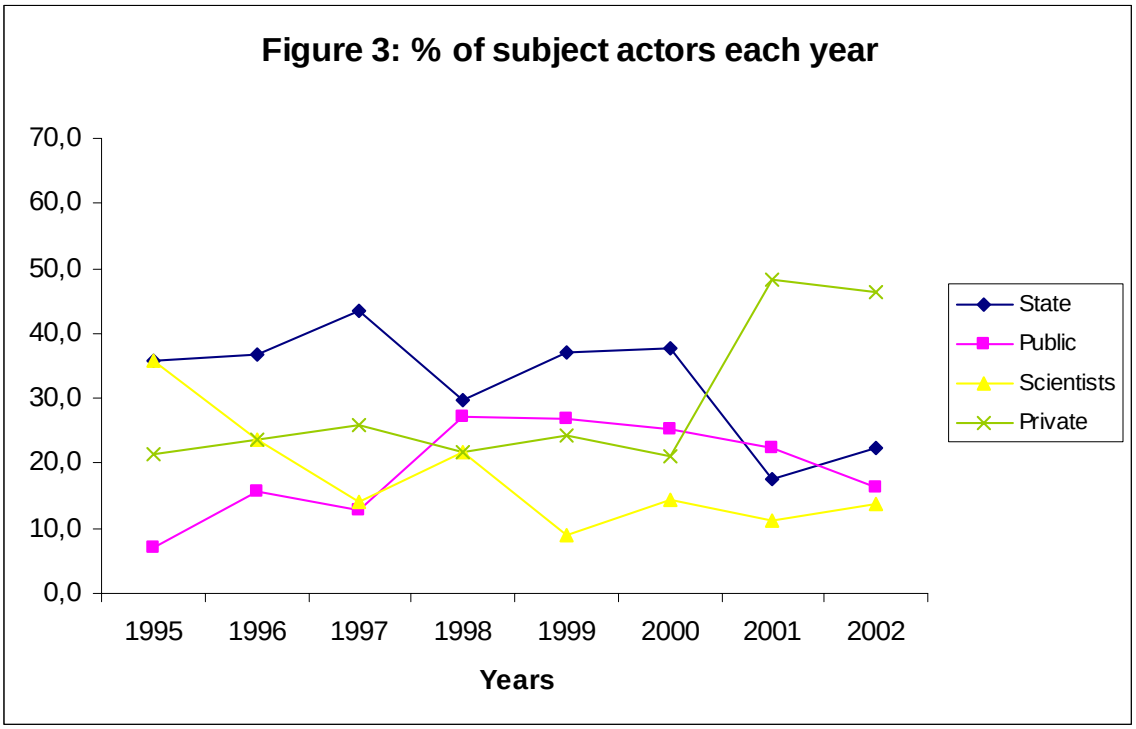


Over this seven years' period, the major actor voicing the claim is the 'Private sector' followed, way back, by the 'Greek state' and the 'Scientists' categories. Yet if one gets a closer look at the time series of these 'subject-actors'[7], it appears that the private sector has managed to supersede all other actors by 2002 (Figure 3) while the scientists' category exhibited a considerable reduction. This fact is particularly interesting if compared with the Greek anchoring case study of biotechnologies[8]. In the latter case the scientists have managed to maintain their 'supremacy' indicating that the issue of biotechnologies was perceived (and largely remained) as a 'scientific' subject. In the case of ICTs we observe the reverse picture: it is the private sector which has managed to appropriate the debate, albeit starting from a low position. A possible explanation of this disparity maybe the different level of success private firms have enjoyed in Greece on the two respective firms: in the case of biotechnologies, the anaemic efforts of the government to (establish and) promote the indigenous private/industry sector failed miserably. On the other side, in the

[7] We define as a 'Subject Actor' as the one 'who makes the claim(s) in the newspaper article'
[8] See, *Biotechnology in Greece*, Figure 4

ICTs sector, not least because of the ample EU funding and the sustained governmental policies[9], the Greek companies managed to fair better. That said, one should not underestimate the important differences between the two areas: the biotechnologies' field is considerably more demanding in financial resources, infrastructure and specialised personnel than the ICTs' one, the latter focusing on a rather easy 'upgrade' from the 'pen-and-paper' way of doing business to the digital one.

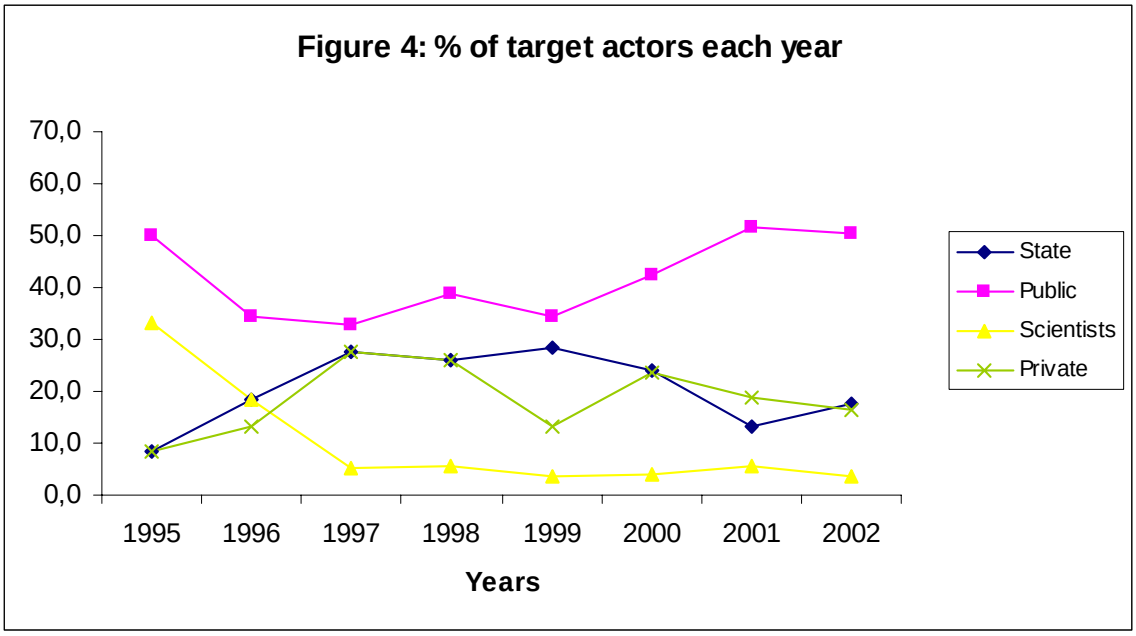
For the case of the 'State' and 'Public' actors, the situation resembles more the one we have identified for the Biotechnologies' case. The latter remains persistently low while the former exhibits a considerable fluctuation, usually peaking on the years a major policy initiative is undertaken.

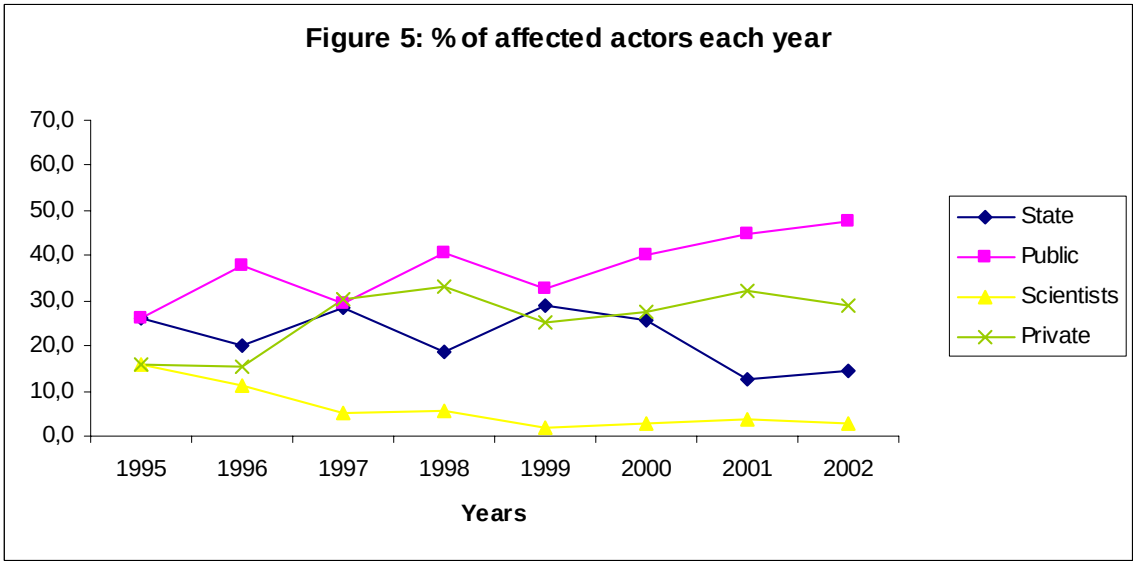


Moving to the 'Target' and the 'Affected' actors categories (Figures 4 & 5), the 'Public' emerges as the most prominent category for both cases, while the 'Scientists' remain the least 'visible' group. Comparing the Greek ICTs and Biotechnologies case-studies, we see a similar pattern: while the 'Public' is consistently the most 'targeted' and 'affected' actor, it never emerges as a principal 'subject' actor –as the claimant. In other words, while in both

[9] Such as the the 'Go-Online' action programme

cases the public has to be won over and would bear the burden of the decisions taken, it is perceived as the 'battlefield' rather than the 'combatant': in the biotechnologies' case the issue was to be decided between the scientists, in the ICTs' one within the private sector. In neither case were in place mechanisms for meaningful public deliberation.



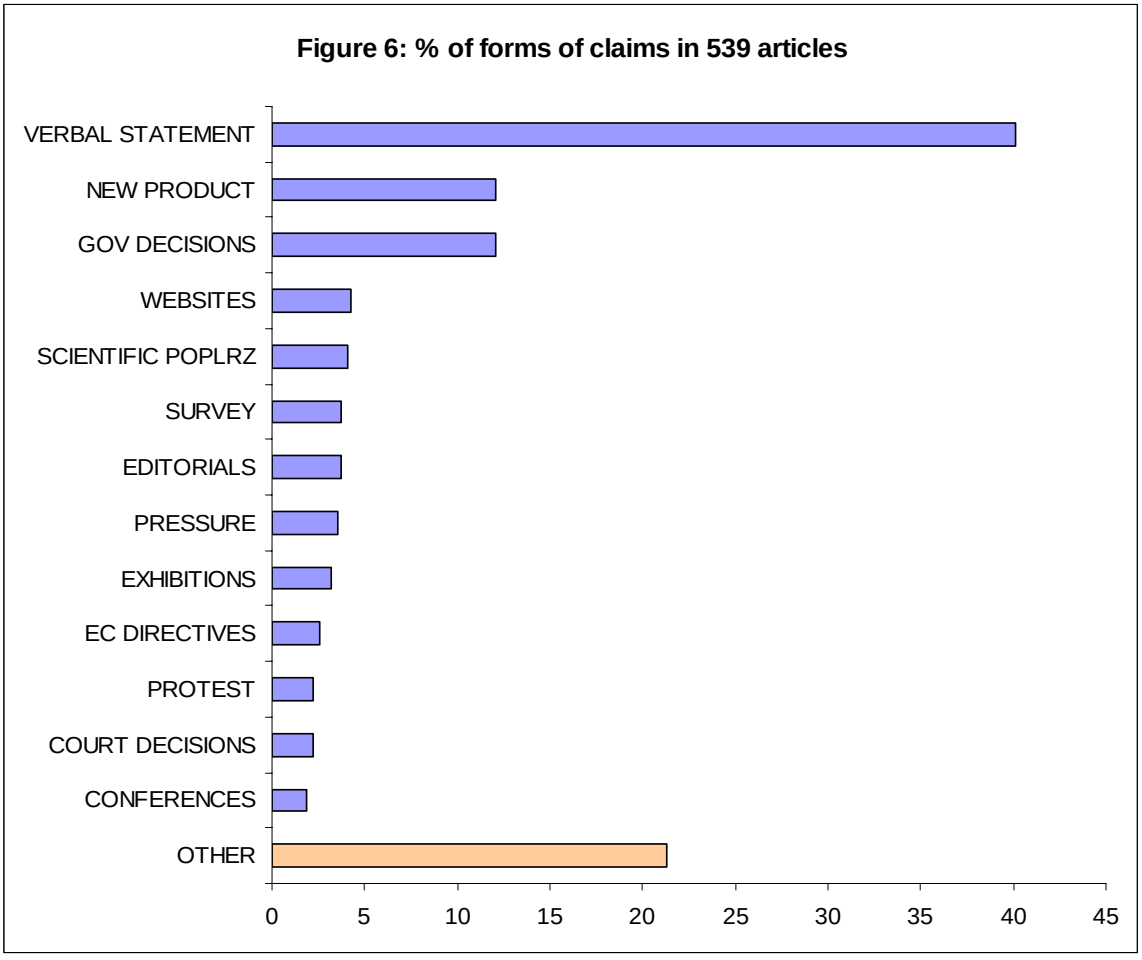


It is interesting to note the different pattern of the 'public' and 'state' lines (on both the 'targeted' and 'affected' categories) vis-à-vis the biotechnologies case study. Concerning the former, we observe a smooth line following a mild upward trend. This is in sharp contrast with the impressive peak in the biotechnologies case, for the year 2002. What this

tells us is that, contrary to biotechnologies, the ICTs debate has not yet reached any crucial, polarisation point which had to be referred to the ultimate arbiter, the public[10].

Similar is the case for the 'state' category. In the ICTs case we have yet to observe the acute peaks –denoting the need for governmental intervention- of the biotechnologies case[11]. Thus, what Figure 4 & 5 depict but the incipient framing of a debate, which has neither captured the publics imagination nor has incited any major controversies. This is depicted even clearer if one checks the forms of claims reported in the articles (Figure 6): almost half are but verbal statements, while 'protest' or 'pressure' claims score less than 5%

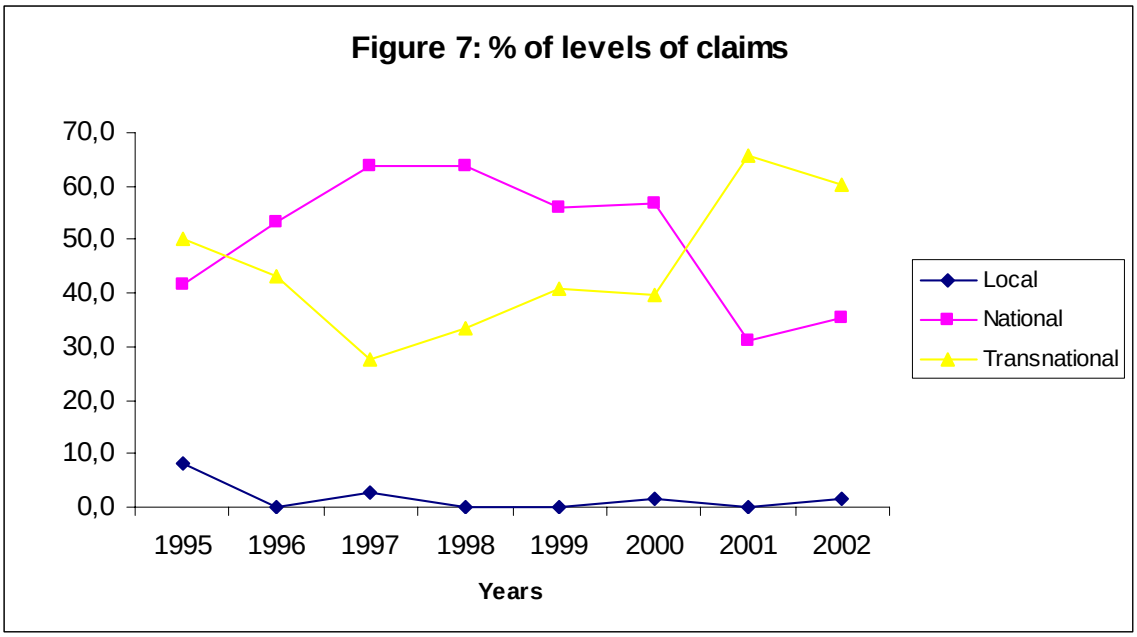
Figure 6: % of forms of claims in 539 articles



[10] The reader is reminded that for the biotechnologies case, year 2002 marked the beginning of the debate over the cultivation of GM foods as well as the labelling of products containing GM ingredients

[11] See for example in Biotechnology in Greece, Third draft, Figure 8, the 100% increase of the 'State' as a targeted actor for 2000, in the aftermath of major societal mobilisations over the cultivation of GM crops in Greece.

The rationalisation of the previously presented situation rests upon the information provided in the following Figures: the ICTs debate seems to be perceived as taking place beyond the lay people's domain, at national and/or trans-national levels (Figure 7); it is largely perceived as an issue of (always welcomed) technological modernisation and progress (Figure 8)[12]; while, a positive outlook has prevailed throughout the period under investigation (Figure 9).



[12] Note the very low scores of societal & cultural claims

Figure 8: % of frames of claims in 539 articles

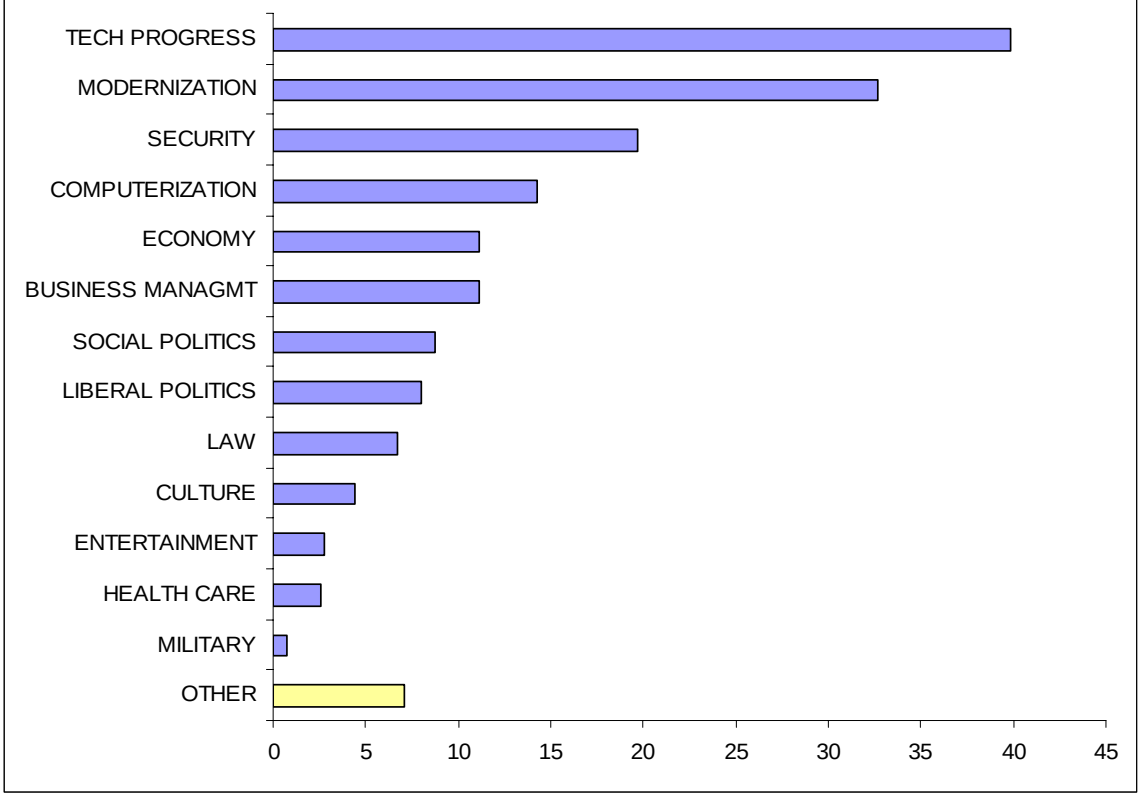
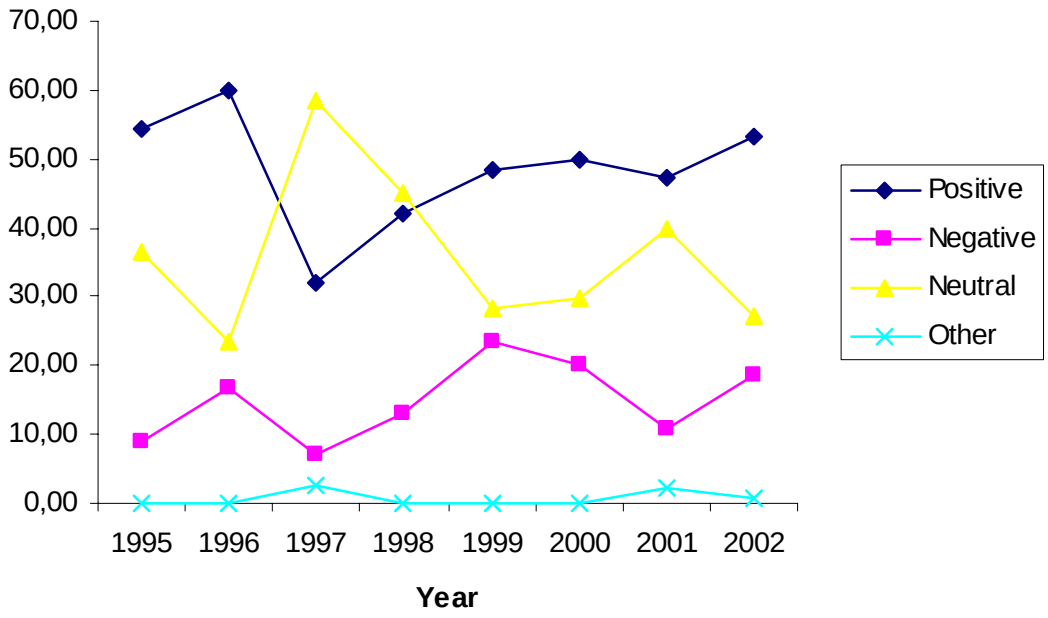


Figure 9: % of positions of articles



Having said that currently no public debate is occurring we are nevertheless able to identify the issues that are likely to play a pivotal role in the (near) future. A cross-tabulation of ICTs issues and actors (Figures 10 to 12) offer us some very useful insights[13]. First, by cross-tabulating the different themes over the subject actors (those who make a claim, Figure 10) we see that the public plays overall a small part in setting the agenda, save the 'Ethics' category. While every actor monopolises certain themes, it is on the issues where three or more actors are active in claim-making that we are to expect an increased level of debate in the future. For the Greek ICTs, these issues seem to be 'Internet access' and 'tele-work'.

The above does not imply that on the remaining issues a consensus is reached. Juxtaposing the 'Subject', 'Target' and 'Affect' cross-tabulation figures we find a great number of issues where the actors making the claims are not the ones principally affected by them, ranging from purely technical issues (such as 'Hightech artefacts'), through techno-social cases (such as 'robotics') to issues of governance, education and participation. It is therefore likely to expect that as the developments in policy and governance issues are going to gain pace, those affected (yet hitherto excluded) from the public deliberation, will begin to voice their claims.

[13] For purposes of visual clarity, a 25% cutting threshold is in place for Figures 10 to 12

Figure 10: Cross-tabulation of issues and subject actors

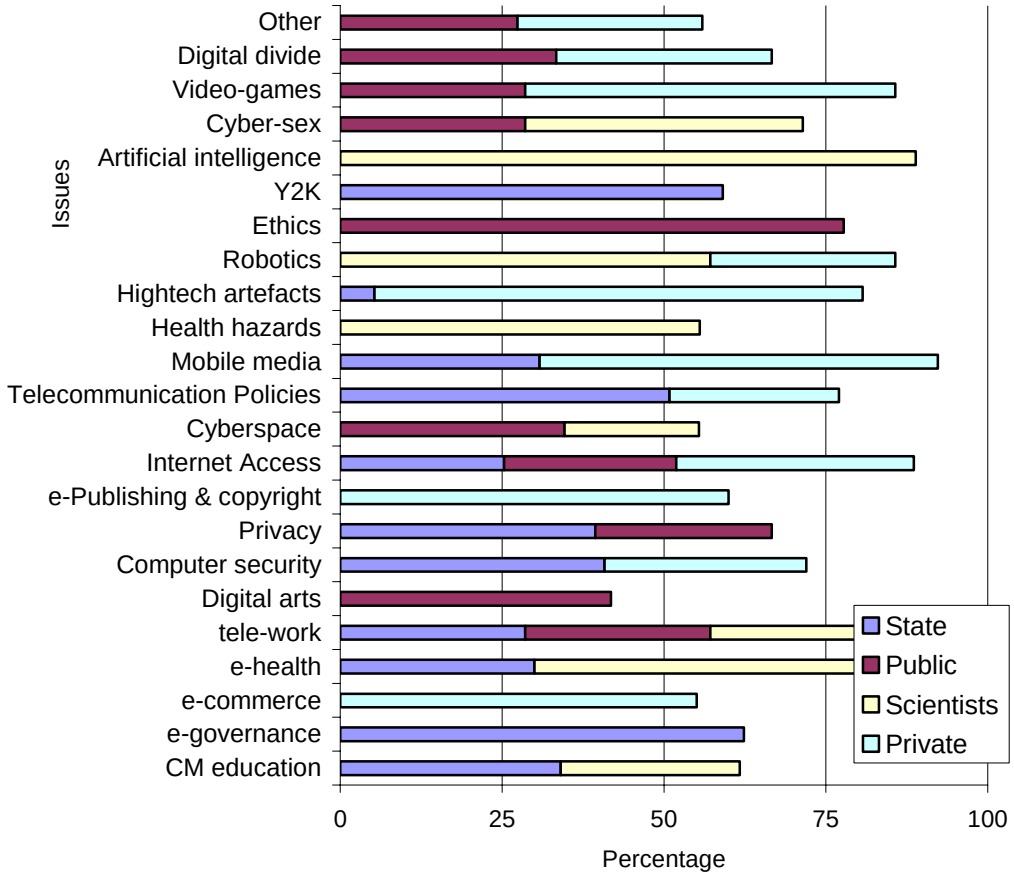


Figure 11: Cross-tabulation of issues and target actors

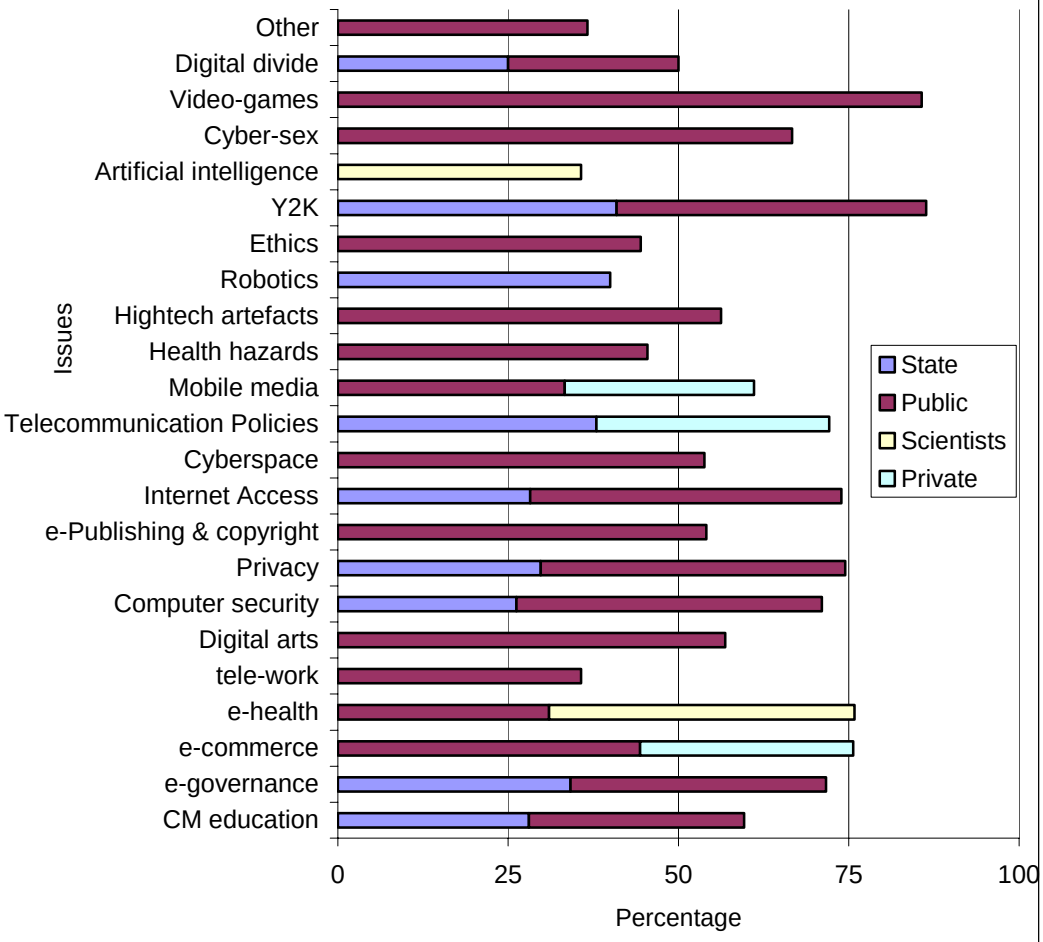
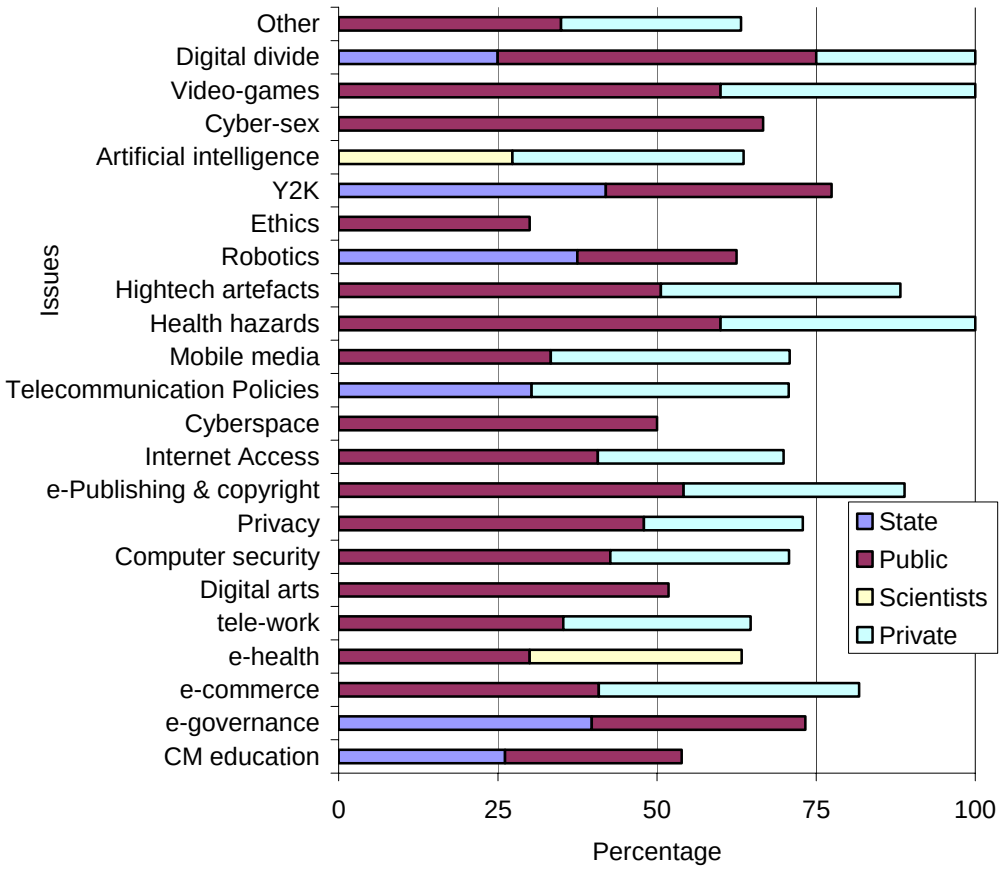
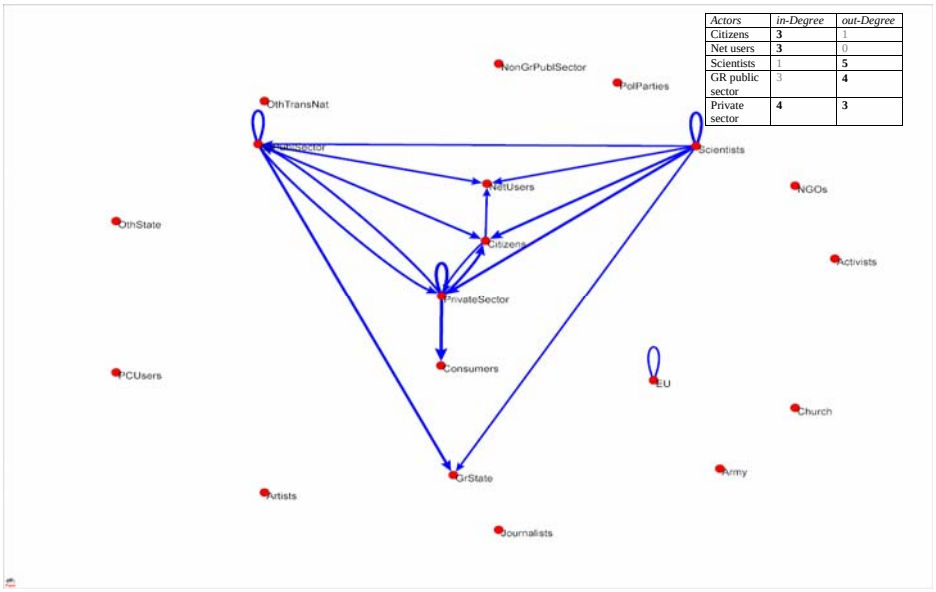


Figure 12: Cross-tabulation of issues and affected actors



The current interplay of the different actors in the Greek ICTs public deliberation is graphically represented in the following Figures, depicting the network of actors 'connected' through articles[14]. It is very interesting to note that the launch of the Greek 'Information Society' scheme in 1999 has not affected the actors involved in deliberation: not only have they remained the same but also the pattern of their interaction survived unscathed.

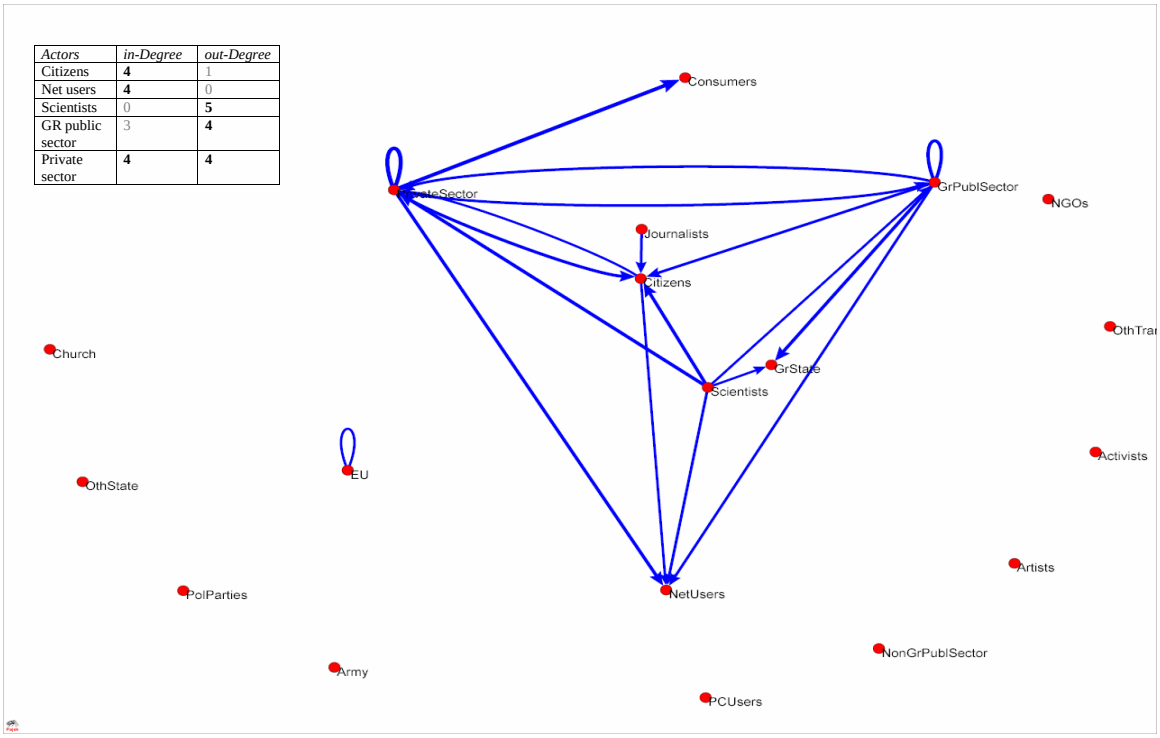
[14] The existence or not of a link between to actors denotes their connection through articles. The arrows start from actors who 'make the claim' and points towards actors who 'are targeted' and/or 'affected' by it.



Actors	*in-Degree*	*out-Degree*
Citizens	**3**	1
Net users	**3**	0
Scientists	1	**5**
GR public sector	3	**4**
Private sector	**4**	**3**

Connected actors at national level, 1995-1998

Actors	*in-Degree*	*out-Degree*
Citizens	**4**	1
Net users	**4**	0
Scientists	0	**5**
GR public sector	3	**4**
Private sector	**4**	**4**



Connected actors at national level, 1999-2002

Discussion

ICTs are currently regarded as but the latest policy area that Greece has to ‘catch up’ with the advanced European core. Thus, the debate is one of ‘technological progress’ and ‘modernisation’, giving the State authorities ample reasons to boast that the Greek administrative bureaucracy is modernized and that schoolchildren are given a chance to learn more about ‘new technologies’. The wider implications this ‘modernisation’ might have in terms of public deliberation and participation do not seem to thrill anyone. To that extent, the ‘official’ debate is nothing more but a list of (State) targets set and (hopefully) met. In parallel, a broader, ‘unofficial’, debate is taking place, mainly in the mass media. Although for the time being, this one is also primarily framed in ‘technological’/‘modernisation’ terms, one could plausibly expect that in the near future it will acquire a more politicized character. Since we are now witnessing but the emergence of the ICTs debate in Greece, it would be highly speculative to comment on its possible intensity, direction and actors’ involvement even for the short term.

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