



# The Knowledge Society in Greece: Current situation and future trends

*Description of the Euforia project*

*Paths towards a knowledge society*

*Current situation in Greece*

*Major trends and drivers of the knowledge society in Greece*

*Scenarios for the development of a knowledge society  
in Greece*

*Conclusions and recommendations*

*Bibliography*

*Annex 1: list of experts consulted*

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## *Description of the Euforia project*

In the context of its four-year work programme, *Analysing and Anticipating Change to Support Socio-Economic Progress 2001-2004*, the European Foundation for the Improvement of Living and Working Conditions launched a project on 'European Knowledge Society (KS) foresights for living conditions, working conditions and industrial relations'. The purpose of the project is to increase understanding of the 'drivers' of a KS and to anticipate their potential impacts on living conditions, working conditions and industrial relations. The underlying aim is 'to identify and support paths to positive transformation while avoiding unsatisfactory development paths'.

The European Knowledge Society foresight project sets out to be a new type of Foundation project, a 'developmental' project. It is intended that the project should be at the same time:

- integrative
- explorative
- experimental
- developmental
- forward looking

The project intends to look at life as a mix of living conditions, working conditions and industrial relations and to analyse these strands through experimental, developmental and future-oriented methods. The project should encompass research, network building and the fostering of exchange of information and expertise with KS specialists, social partners and the state. The 'foresight' concept links the project closely to the Commission's sixth European Research Programme 2002-2006 concerning network-building and the innovation policy framework of the European Research Area.

The project is also closely related to the goals of the declaration of the Lisbon Council. The Council's declaration set out the aim for Europe to become 'the most competitive and dynamic knowledge-based economy, capable of sustained economic growth with more and better jobs and greater social cohesion.' The project's relation to the declaration lies through investigating how social foresight can fill the gap between the Lisbon Council employment strategy and technology foresight.

The project has now entered its second phase (2002 - 2003) aiming at the:

- development of a report on advancement indicators of the Knowledge Society
- establishment of temporary national foresight centers in three different EC Member States
- production of national Knowledge Society foresights concerning the 'drivers and impacts' of the Knowledge Society
- production of a synthesis report consolidating the project results

***Role of the National Centre in the Euforia project***

The Greek National Centre for Euforia was created at the beginning of the project with the following members:

*Government, Ministries:*

1. General Secretariat for Research and Technology: Mr. Vassilios Laopodis

*Trade Unions:*

2. General Confederation of Workers of Greece: Mr. Petros Linardos Rulmond

*Employer Associations:*

3. Industrialists' Association of Northern Greece: Mr. Ioannis Lemperos (and Mr. Alexandridis)

*Researchers and Scientists:*

4. LOGOTECH S.A.: Mr. Nikolaos Maroulis
5. Aristotle University of Thessaloniki: Dr. Nikolaos Varsakelis

The first four experts participate also in the on-going National Technology Foresight Programme.

The National Centre was created with the aim to provide a pool of national experts in the fields examined by Euforia. Their expertise and knowledge was used during the workshops organised for the identification of the major trends characterising Greece's development, the formulation of the Delphi statements and the development of specific scenarios about a possible course to a Knowledge Society. Assistance was also sought for the identification of other experts according to the specific requirements of each workshop and the Delphi survey. Further support will be asked by the National Centre members for the dissemination of the Euforia results and their combination with the results of the National Technology Foresight Programme.

Additional experts were also consulted during personal interviews that were carried out in preparing the background material for the second workshop. All the national experts consulted during the Euforia project are mentioned in Appendix 1. The participants of the workshops were also called to provide feedback for the workshop reports before these were finalised and sent to PREST.

Two workshops took place under the Euforia project. The first aimed at identifying the major trends characterising Greece's development and formulating specific Delphi statements. The second one aimed at developing specific scenarios for a possible path towards a Knowledge Society. Furthermore, the Euforia Delphi survey was advertised during the International Foresight Conference that took place under the Greek Presidency at Ioannina in May 2003 and ATLANTIS members attended all the conferences organised by the National Technology Foresight Programme so as to keep track of the progress and the anticipated results to ensure synergies between the two projects.

## *Paths towards a national knowledge society*<sup>1</sup>

Knowledge society is a common ambition among the European Union Member States. The course of the EU towards a “knowledge society” with sustainable economic development, more and better work positions and improved social cohesion, is a new strategic goal since it is the basis for further development and welfare. For this reason it is interesting to investigate not only at what degree Greece moves towards “knowledge societies” but also in what way it does so. What does the Greek society need in order to be characterized as a “knowledge society”? How is Greece different from the other European Union Member states concerning the course towards a “knowledge society”?

In defining the path of a country to the Knowledge Society (or Knowledge Economy) the concepts characterising a Knowledge Society / Economy have to be explained first.

There are many who support that we are in transition for a new “knowledge economy” since knowledge in all economic activities has radically changed. Some support that this change is due to the achievements of Information Technologies and Science, which lead to a paradigm shift with basic changes in the rules of the economy concerning both enterprises and policies. However there is no commonly accepted definition for the “knowledge society”, let alone a concrete theoretical framework. This leads us in perceiving “knowledge society” more as a “metaphor” than a concrete concept. For some, this states that knowledge is now more important as an input to a system than it used to be in the past. In addition, there is a perception that codified knowledge is of major importance for any system that relates to the economy. Furthermore there is a concept that information and communication technologies are the key players, since they bring the most important changes in the natural barriers concerning the costs for collection and diffusion of information as well as the ability to codify knowledge.

The separation of the abovementioned concepts is quite difficult to achieve. Any assessment of the role of knowledge in today’s reality has to identify what economic activities were based on knowledge in all society’s forms from past times until today. The industrial society of the 19th century was significantly knowledge intensive and quite a few of the allegations for the so called “knowledge society” could have been used to characterize that era as well.

On the other hand, it is a fact that the evolutions during the past 30 years have been far more radical than those that took place in the more distant past. Furthermore, there are changes in various levels, which interact resulting into parallel and versatile developments and do not just expand individual tendencies that used to exist. The results of the intersection and the interaction of these developments create new dynamics. These dynamics can be considered as the determinants of the knowledge society from other forms of societies in previous periods.

In contrast to the Information Society, Knowledge Society is not supported by a specific scientific or technological area that could be characterized as the main source of developments. “Knowledge Society” is more a definition of an era with various developments that coincide and reinforce each other rather than a scientific definition of a procedure that keeps

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<sup>1</sup> This section was based on Innovation Tomorrow ([http://www.cordis.lu/innovation-policy/studies/gen\\_study7.htm](http://www.cordis.lu/innovation-policy/studies/gen_study7.htm)) and Innovation Policy in a Knowledge-Based Economy ([http://www.cordis.lu/innovation-policy/studies/gen\\_study4.htm](http://www.cordis.lu/innovation-policy/studies/gen_study4.htm)) and on a note about the concept of the Knowledge Society prepared by Ian Miles, PREST for the Euforia project.

changing. Accordingly, a useful way of thinking as far as knowledge society is concerned involves the conjunction of various different trends. These are:

- The increasing importance of “knowledge” as a tradable good. There are more and more companies that try to consolidate the “internal knowledge” they possess and use it as a determinant in negotiations for accessing business funds or alliances with other companies. In parallel there is an effort to assess the resources and the circulation of knowledge at both entrepreneurial and national level.
- The development and evolution of information society, which is based in large scale technologies and the use of new information technologies that allow phenomenal capabilities in processing, storage and transmission of data and information. Information and communication technologies provide a new technological basis, which radically changes the conditions for processing, diffusing, exchanging and codifying knowledge at individual, organizational, entrepreneurial and social level.
- The increasing significance of innovation as an issue of entrepreneurial and national competitiveness, and as a critical factor for the development of strategies for the improvement of performance and efficiency of organizations of all types. Innovation includes the application of knowledge (technologies, techniques, entrepreneurial and bureaucratic, knowledge of the users, knowledge of the markets and social needs) with the intention to find new ways of creation. Under this prospect innovation involves technology and organisational methods used by businesses and entities of all types that help in the creation and diffusion of innovation (flexible production methods, adaptation of products and services in client needs, new forms of quality control, etc).
- The increasing importance of services emphasise on the information processing as well as on personal interrelations and co-operations. It is a fact that such services are dominant, according to statistics, in financial activities and in employment. Specialised services (specifically those that are knowledge intensive for businesses) are an important input in organisations of all sectors at a large scale. In parallel, the services sectors are considered to be the most important user of information technologies as well as pioneers in innovative procedures. Furthermore, regardless of the sector they belong to, organizations provide more and more services to accompany their products.
- Social Learning. There are significant investments for the improvement of educational systems, the identification of qualifications, skills and knowledge that are important from a social and economic point of view. The efforts for the creation of “learning organisations” and the institution of various types of knowledge management are very important for organisations and systems of all kinds. These efforts expand beyond just measurement and consolidation of intellectual capital and include a series of steps for the improvement of production and use of critical knowledge. This way organizations and enterprises seek to apply techniques and new information systems to make more effective use of the information resources they possess (e.g. data mining), codify and diffuse information resources to their staff (e.g. Enterprise Resource Systems) and to render their expertise as more identifiable in order to undertake routine tasks as well as new activities (e.g. human capital development, team systems and cooperation systems).
- The aforementioned evolutions are motivated by the challenges that are brought about and reinforce globalisation. As a result, there is emphasis in the elimination of obstacles for commercial activities, investments in services, use of information technologies for the coordination of decentralised decision making systems, innovative activities, etc. Even if globalisation is not an inborn characteristic of the “knowledge society” (but mainly the framework that shapes and accelerates it) it is considered as one of its main elements.

With this in mind, there are many other important developments, which affect the shape of the “knowledge society” such as the changes in the demographic structure, in cultural practices, and in issues that concern the environment. This means that there might be many forms of the “knowledge society” according to how much and in what way each is characterized by the abovementioned qualities - as it used to be in the various stages of the industrial society.

In defining the course of Greece towards a Knowledge Society the wider socio-economic environment has first to be examined as the starting point, and then, the respective trends characterising this environment along with the major strengths, weakness, opportunities and threats. This is done in the following sections. Special reference is made to the living conditions, working conditions and industrial relations.

### ***Current situation in Greece***

According to the “Knowledge Society Advancement Indicators Report” (Empirica, 2003), prepared for the Euforia project, the main indicators characterising the advancement of a country towards a Knowledge Society can be grouped into the following categories: Media; Education, training and life-long learning; Work and employment; Economic environment; Social inclusion; Innovation ability; Quality of life. The performance of Greece against these indicators as well as based on other available studies, indexes and reports, is described below.

#### ***Media***

The use of mobile phones in Greece presents very high rates, while on the other hand Internet use is still at very low levels. The Greek society is characterized as a typical “mobile phone society” like most of the South European countries, which are characterised by very high mobile phone usage but very low Internet access figures. Concerning access to broadband connections per citizen (ISDN, DSL, Cable mode lines, etc), Greece is ranked last among EU member states and lower than Czech Republic, Hungary and Poland. Furthermore, the percentage of people using the Internet at home, in 2000 was again the lowest in the EU-15 and many of them interrupted or did not update their connections. The percentage of the “internet drop-outs” in Greece is one of the highest in Europe. This indicator needs additional data to provide sound conclusions but it is important to monitor the reasons for dropping out so as to identify potential problems or conflicts between the population and the Internet (Empirica, 2003).

#### ***Education, training and lifelong learning***

The educational system in Greece gradually changes with the introduction of new technologies and especially information technologies. Meanwhile, it is crucial to notice that Greece and Luxemburg are the countries with the lowest ranking among other EU countries concerning graduates in science and engineering (European Commission, 2002d). The most important problem faced by the educational system towards the knowledge society is the lack of long-term planning, the lack of liaison with the market needs, the hesitance of the teachers concerning adaptation to new technologies and the lack of specialised teachers for new technologies (Amanatidou, E., Damvakeraki, T., 2002).

On the other hand, regarding the part of the workforce that has received tertiary education (25-64), Greece is close to the EU average (European Commission, 2002d) as is the pupil/teacher ratio especially in primary and secondary education (Empirica, 2003). Furthermore, the levels of public expenditure in tertiary education were above the EU average in 1998 (European Commission, 2002b).

A main characteristic of the knowledge society is constant development and innovation. Under these circumstances, individuals should develop new skills - or participate in life long learning. All types of learning are important, since they prepare the individual to accept and create new knowledge. Participation in vocational training and life-long learning is still low in Greece. It has to be noted here, however, that continual training and life-long learning in Greece first appeared in the '90s with the assistance of the Community Support Framework (CSF) programmes. The necessary structures and conditions were created under the first CSF and the time that intervened is still short to allow for the structures to develop and for dynamics to appear.

#### ***Work and employment***

Employment is a means for integration in society, attainment of social status and the fulfilment of life objectives while unemployment, which is mainly associated with the economic situation of a country, may lead to social exclusion.

Societies that are characterized as “technologically advanced” or as “knowledge societies” can be identified on whether they have a high unemployment rate for low educated workforce in relation to low unemployment rates for highly educated employees. Economies that are characterized by low unemployment rates are the ones that have achieved to integrate people that used to be unemployed (due to their low educational level) in their workforce by offering them further education and training (Empirica, 2003).

Greece and Spain are not included in the category of these countries since they both have high unemployment rates among people with post-secondary (non-tertiary) education as well as among people with post-tertiary (PhD level) education. Potential reasons for that is probably the difficulty that exists concerning mobility of employees from one level to the other as well as the lack of demand for high skilled employees. Another important hindrance is also the rigid and severe legislation in the labour market (ibid.).

Unemployment in Greece was 9.6% in 2002 and figures show that it has been slowly decreasing since 1999. However, around half of the people reported unemployed in the first quarter of 2003 have been unemployed for a period equal to or more than 12 months. Additionally, while men unemployment is close the EU-15 average (2002), women unemployment was almost double (15% women unemployment in Greece in 2002, EU-15 average: 8.7%) (National Statistical Service of Greece, 2002).

Concerning flexibility and adaptability of their labour markets, Greece, Spain and Portugal have a long way to go in order to cover the gaps that exist in relation to other countries. Regarding tele-working, Greece in 2002 appears to be in an average point, close to the EU average, with improvement tendencies. On the other hand, as far as tele-cooperation is concerned, Greece and Portugal are ranked last in the EU-15 (Empirica, 2003).

Furthermore, in Greece the percentage of the enterprises that provide training is very low in relation to other EU-15 countries and the same applies for the participation of employees in training seminars. Additionally, the participation of employees in self-training is lower than in other EU-15 countries. Concerning e-learning, Greece is again ranked last among all other EU-15 countries (ibid.).

### ***Economic environment***

Nevertheless, the course towards the knowledge society in Greece is taking place within an economic environment that is characterized by high development rates, low inflation and interests, and efforts to eliminate fiscal deficits. In 2002 the Greek economy was considered as one of the fastest developing economies in Europe. Since 1995 the GDP growth rate has been over the EU average. During the period 1991-1998 “knowledge intensive” technology investments were increased. For the largest part of the ‘90s the growth rate of the “knowledge intensive” investments (R&D, software, university education, etc) was one of the highest in the EU (10%) (European Commission, 2002b). Despite the fast growth rates, according to the study that took place in 2002 for the World Economic Forum and concerns international competitiveness of all countries, Greece still lags behind not only “highly developed” countries (USA, Finland, Canada, Japan, Germany) but from others that were not considered to be competitive at all (some of the newly associated EU states). Both at micro and macro level Greece is still lagging behind all other South European countries (Portugal, Spain) (Cornelius, P., 2002).

On the other hand, concerning labour productivity growth rate, Greece appears to be between the first countries in Europe. Where income per capita is concerned, Greece is ranked last among EU countries below Spain and Portugal; it is encouraging though that the annual growth rate of the income per capita grows a lot faster than the EU average (Empirica, 2003).

### ***Social Inclusion***

Social inclusion can solve specific problems concerning distribution and income inequalities and digital divide. Income distribution is on a smooth course in Europe since 1995-1998, while Greece, Belgium and Portugal remain the countries with the most significant income inequalities (Epirica, 2003). Furthermore, the digital divide in Greece appears to be quite high in relation to other EU countries. Additionally, ICT knowledge/skills for people below the age of 25 but also for those being over 25 is still at very low levels (ibid). In 2002, the Global IT IQ Ranking placed Greece 43rd (out of 100) concerning the certification of ICT skills.

### ***Innovation ability***

Innovation ability is characterised by both inputs (R&D expenditures, human resources) and outputs (scientific publications, patents). The R&D intensity (GERD as % of GDP) in Greece was ranked last in the EU in 1999 but has been presenting the highest average annual growth rate since 1995. Additionally, the business financed R&D as a percentage of industrial output was again the lowest (similar to Portugal) in 1999 but again presented one of the highest average annual growth rates since 1995. A similar situation appears also in the numbers of researchers and new PhDs while Greece (together with Portugal) presented highest percentage of female researchers in 1999. Concerning the outputs (scientific publications as well as EPO and USPTO patents) Greece again presents some of the highest average annual growth rates since 1995 but being still at very low positions in 1999 (European Commission, 2002b).

On the other hand, the Technological Achievement Index places Greece among the “potential leaders” in 2001, and specifically at the 26th position (out of 72). Nevertheless, Greece has a long way to go towards a Knowledge-based economy. The Network Readiness Index, measuring a country’s capacity to exploit the opportunities offered by information and communication technologies, places Greece in the 30th position (out of 82) concerning network use but at the 35th position concerning the existence of the enabling factors (network access, network policy, networked society and networked economy). Additionally, the E-Readiness Ranking shows that Greece is in 2003 three places lower than in 2002 (26th position in 2002, 23rd position in 2003) and is grouped with the rest of the European Southern countries regarding the Internet with scepticism and being reluctant to do business on line.

Furthermore, employment in high-tech sectors is another important indicator of the innovation ability. Whereas, the percentage of the workforce in the third sector in Greece matches the EU average, only a small part is involved in the high tech and medium-tech industries and services, thus placing Greece in the lower position in this respect (European Commission, 2002b).

### ***Quality of life***

Concerning environmental issues, CO2 emissions in Greece are equal to the EU-15 average (Empirica, 2003). However, the energy consumption is still one of the highest and despite the renewable energy resources availability in the country their exploitation is still low. Additionally, exports in the energy sector are decreasing and there are significant concerns about the abuse of the natural resources.

Job security and satisfaction play a crucial role in improving the quality of life. While about 70% of employees in Greece report they are satisfied with their job, this percentage drops down to 26,5% when it comes to job security. Additionally, both these figures are the lowest when compared to the ones from the other EU-15 countries (Empirica, 2003; European Commission, 2002e).

In addition, as factors affecting the development of the Knowledge Society, we should also take into account the low birth rates, the ageing of the population as well as the culture of a nation, reflecting a specific attitude towards creativity and change in general.

The population of Greece rose from 10.26 million people in 1991 to 10.96 million in 2001. However, the percentage of people aged less than 15 years old has been steadily decreasing since 1971 while the percentage of people aged 65 and above has been steadily increasing. The people aged between 15 and 65 years account for 67% of the population since 1991 and the projections expect the population to start decreasing after 2010. Additionally, marriages have been decreasing, live births have been reduced to half and divorces have tripled during the period 1971-1999. The population has been steadily moving from the rural to the urban areas, which accounted in 1991 for about 60% of the total population (National Statistical Service of Greece, 2002).

Furthermore, while the total investments in the health sector in Greece are at a very good level (4% of GDP equal to the Netherlands, Sweden and Canada) 75.5% of them come from private investments as the OECD Health Data Report 2003 shows (as referred to in Kadda, D., 2003). This is quite striking if we take into account that the respective percentages in Sweden and Canada for example reach only 28% and 10.9% respectively. The low public expenditure in the health sector affects the quality of the public services rendered, as well as the adequacy of the infrastructure and human resources. However, Greece also presents the largest availability of beds, a quite high efficiency in doctors and the highest public coverage of medicaid and pharmaceutical care. Despite that, the public health expenditure reaches only 56% (the lowest percentage among the EU-15 countries presented in the study) of the total health expenses, which reach a very high level (9.4% of GDP) in comparison with the other EU-15 countries. This means that Greek people spend quite more than the other Europeans for health purposes, but, although, they have the highest public coverage for medicaid, they are not reluctant to spend extra amounts for private health services, which are indeed increasing rapidly the latest years.

National culture, defined by Hofstede (as referred to in Varsakelis, 2000) as the collective software of mind and which distinguishing the members of one group or category of people from another, explains sufficiently how a society behaves, how it perceives the future and how it considers the relationship between its members. According to Hofstede, societies that are characterized by low social mobility and static environment usually do not rest on technological change for their economic growth. On the other hand, societies with high social mobility are characterized by their belief on systems and organizations and invest in new technologies (goods or processes) when the system fails to solve problems.

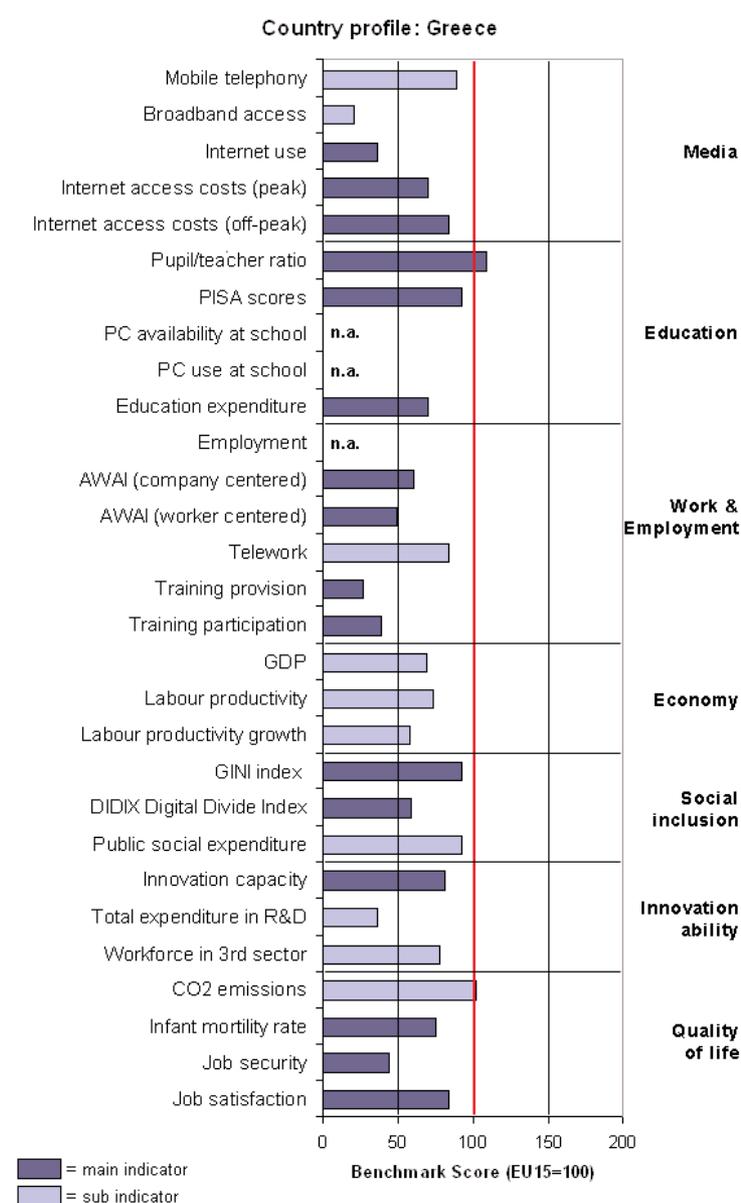
The cultural aspects of the population in any country can play a crucial role to the way people anticipate and react to changes, reforms, innovation, new technologies, and consequently affect the development in Information and Communication Technologies. Greeks, although adaptive, appear to be more traditional than other European nations; they tend to be risk averse and they react conservatively and suspiciously against new technologies and developments, even though the younger generations have proven to be more innovation adaptive in relation to the older ones.

In parallel, the Power Distance Index (PDI) can also help in understanding how culture affects the innovation aspects of a population. PDI is a measure of the interpersonal power or influence between the superior and subordinates perceived by the subordinate. Power distance defines a general societal norm, a value system shared by the majority in the middle classes in the society. The PDI norm deals with the desirability or undesirability of inequality and of dependence or interdependence of society. Both low and high PDI countries have hierarchies but they mean something else. In high PDI societies people are the first to blame for anything wrong in the system whereas in low PDI societies the system is to be blamed. In fact, in high PDI societies change in the system means change in top management of organizations or government services (Varsakelis, 2000).

Organizations or government services in low PDI societies are oriented towards the implementation of new processes in order to change the system. The low PDI societies invest more on R&D when they want to overcome the problems. As old processes reach the maturity stage, society invests on innovation in new methods. As a conclusion we may say that the lower the PDI of a country is, the higher the R&D investment intensity.

As far as the origins of national PDI differences, Hofstede (as referred to in Varsakelis, 2000) states in his study that the social mobility and the mobility of the middle class is stronger in low PDI societies than in high PDI. A key variable for this mobility and development is technology, since people need to invest in technical skills and knowledge in order to improve their status.

On the other hand, societies with high PDI are characterised by low social mobility and hence the need for personal and societal investment in technology and knowledge is low. Countries with a national culture expressed by low PDI are more system-fixing oriented and any time that something is wrong, either product or process, they invest in new technologies in order to fix the system. Greece, as well as Spain and Portugal do not belong to this category. They are characterized by a very high PDI, and interestingly present also low RTD intensities and few patents (Varsakelis, 2000).



### ***Working, living conditions and industrial relations in Greece***

Complementing the picture described above, special reference is made in this section to the working and living conditions and industrial relations in Greece.

#### ***Living conditions***

The lately published report about “Social Precarity and Social Integration” (European Commission, 2002e) with 2001 data, reveals that the Southern European countries are characterised by quite lower living conditions as compared to the other EU countries and especially the Northern European Member States. In Greece, specifically, poverty, as expressed by the percentage of households in financial difficulties, still remains one of the highest in the EU, although it presented a slight decrease since 1993. However, more low-income population reported financial difficulties in 2001 as compared to 1993. More than half of the Greeks attribute poverty to social (as opposed to personal) causes and about 40% of those affected by poverty report a duration of about 14 years.

Furthermore, the percentage of those who believe they are poorer (subjective poverty) is more than two times the percentage that is found to be under defined poverty conditions (objective poverty). The authors of the study make a very interesting remark in relation to this high difference. They consider that the higher proportion of people who regard themselves as “poor” reflects their desire for economic and social progress that will bring them access to better conditions of life as in the more “advanced” countries. They further note that this frustration can indeed be regarded as one of the preconditions for development, as the strong dissatisfaction of the rural population in France can be considered to have brought rapid development during the ‘three-decade boom’.

While social contact between the lowest-incomes population is higher than the whole population, the poorest people believe that they are socially isolated. While satisfaction with family life has improved since 1996 for the total population, it has decreased considerably for the low-incomes groups. On the other hand, satisfaction with social life has decreased since 1996 for both segments.

Greece also presents wide dissatisfaction with the society as well as the way democracy works and the highest proportion in agreeing that social policy is the responsibility of the government.

#### ***Working conditions***

According to the same study (European Commission, 2002e) task quality (variety, learning of new things, participation in decision-making) presented one of the sharpest declines in Greece since 1996. On the other hand, work pressure is significantly lower than other European countries, but the proportion with experiences of increased skills and responsibility were relatively high both in 1996 and in 2001, with a slight decrease between these two years.

Vulnerability to dismissal increased in Greece between 1996 and 2001 while the proportion with an experience of unemployment in the last five years more than doubled in the same time period.

About 95.5 % of the working population is employed in full-time positions. The part-time workers accounted only for 4.5% in the first quarter of 2003 and about 40% of them had a part-time job because they could not find a full-time job (National Statistical Service of Greece, 2002).

#### ***Industrial relations***

According to the 2002 Annual Review for Greece (European Industrial Relations Observatory, 2002) the numbers of collective agreements, signed at all levels, increased in 2002, intensifying a trend seen the two previous years.

However, the social partners do not yet seem to have made use of the potential provided by the Law 1876/1990, which broadened the scope of collective bargaining to include any issue related to the terms and conditions of employment (except pensions issues) as well as the exercise of the right to organise collectively within a company and company policy. It is still economic and financial issues, especially related to pay, that still predominate in the agendas of the social partners.

Concerning working time, no agreement has been reached so far about the reduction of the working week to 35 hours without loss of pay. According to the Federation of Greek industries this failure underlines serious problems related to flexibility and costs created by recent employment legislation. On the other hand individual company policies regarding working time issues underline a refusal to introduce a 39-hour week, and an interest in implementing individual agreements bypassing the process of collective bargaining.

In November 2002 the Greek General Confederation of Labour (GSEE) took a number of important decisions on organisational restructuring. Closer cooperation and an eventual merger within the next five years) has been planned with the Confederation of Public Servants (ADEDY) along with greater coordination between GSEE member organisations at regional, prefectural and sector levels.

The number of strikes rose from 15 in 1999 to 23 in 2002 amounting to 816,913 working hours lost in 2002. However, as a whole, 2002 was not characterised by the social tensions that had prevailed in previous years.

The “Joint Framework of actions for the life-long development of competencies and qualifications” agreed by the EU-level social partners in March 2002 does not yet seem fully to have engaged the interest of the social partners. GSEE noted that employers, public authorities and some trade unions are not yet ready to take special initiatives in relation to the framework. However, aspects of the framework are being implemented to a certain degree through joint (employers, employees, public authorities and local agencies) experimentation under the EU Equal initiative (a certification system for non-formal learning, certification of distance-learning and attempts to establish a qualified consultancy network to aid unemployed people). Furthermore, GSEE stressed the importance of the ETUC representatives in transferring international experience on the issues addressed by the framework to the national and regional levels.

Open-ended, full-time employment still remains the main form of employment in Greece accounting for at least 80% of paid employment. Of the flexible employment forms, temporary employment (fixed-term contracts and seasonal work represented the largest proportion of employees (15%) but part-time employment remains at low levels (4%) and does not show significant prospects for growth. On the other hand, tele-work and hiring-out of labour shows a clear tendency to increase.

The major developments in 2003 expected are the preparation of a comprehensive draft bill on labour relations oriented towards increased flexibility and part-time employment in the public sector, the creation of a legislative framework to regulate the terms and conditions of workers with fixed-time contracts, and the creation of a permanent national forum on employment and labour relations, a joint initiative of the government and the social partners.

## ***Major trends and drivers of the KS in Greece***

The situation presented above has to be complemented by the major trends related to the Knowledge Society in Greece that were identified by the experts consulted under Euforia:

### ***Society***

- The educational system is not built around the “idea” of lifelong education or on a proper knowledge management and creation approach. This results to producing ‘less competitive’ graduates as compared to other countries.
- The development of private non-profit bodies for the provision of higher education will increase competition, which will improve the quality of the education in the public universities and their orientation towards the fulfilment of the market needs concerning specializations and skills.
- The increasing ageing of the population affects the ability of the public health system to manage the increasing needs in medical treatment.
- The constantly increasing retirement age in combination with the possibilities for part-time occupation will result in the appearance of new forms of work after the age of 60 or 65: part time occupation in the same field or “alternative” or “social-voluntary” occupation. Some people may continue working (life-long working) assisted by lifelong training, while others are excluded from work after the age of 50 for a number of social reasons. This may result into the appearance of new categories of employees that will be unable to be insured and pensioned.
- The unbalanced ‘territorial’ distribution of people’s ages and incomes affects negatively the balanced development of the Knowledge Society in Greece.
- The changes in work types and conditions, as a result of the Knowledge Society, cause changes in the personal life and family structures.
- The “Showing off” society (anything that is not promoted does not have a value), as supported also by the mass media, creates consumer models that lead to ‘fictional’ needs and different priorities, which hinder the development of the knowledge society.

### ***Technology***

- The use of new technologies is restricted by the concerns of the civilians regarding the protection of their personal data (privacy especially at work), the inadequacy of the legal framework concerning IPR protection issues and the tendency towards political control of the information.

### ***Economy***

- The industrial relations and the working conditions as they are today in Greece do not promote the development of the knowledge society / economy.
- The development of the new peripheral markets (Balkans, Eastern Europe, Mediterranean) may alter the orientation of the Greek enterprises. Some of them exploit the cheap labour force, which leads them into being more competitive by reducing the production costs. Some others turn to the coverage of the needs of these ‘non-competitive’ markets by producing products and services of low quality, which results in the worsening of their competitiveness at European level. These strategies turn the enterprises away from the Knowledge Society.

- The ‘dualism’ that characterizes the Greek economy may be intensified as the competitive enterprises constantly improve their performances at national and European level, while the “traditional” and less competitive ones struggle to survive.
- The development of alternative forms of tourism may reform some of the rural and mountainous areas into poles of attraction for tourists and tele-workers and upgrades the quality of life in these areas.
- The ‘conservative’ organizational culture characterizing some areas mainly in Southern Europe results in the widening of the “distance” between subordinates and senior employees and therefore hinders the diffusion of information and the production of knowledge.

### *Policy*

- The peripheral disparities in Greece hinder the balanced development of the Knowledge Society. The large urban areas will be favoured and develop faster because of their improved infrastructure and better human resources, while the rural, mountainous, frontier and islands areas will be even more underdeveloped.
- E-governance enhances transparency in the procedures concerning the relationship between the citizens and the state and may contribute to the decrease of the population moving to the urban areas.

Furthermore, the experts confirmed that the following trends also characterise the Greek situation (each positive trend is counter-balanced by a negative trend):

There are new, well-designed policies in education, use of new technologies, employment, research, equal opportunities  
**BUT**  
There is insufficient coordination and limited effectiveness of the measures taken so far.

Use of new technologies is increasing (in the public sector, economy and society, as is the private research and innovation)  
**BUT**  
The demand for innovation is still limited and we keep on depending on low-added value products and services, the production of which is also decreasing.

Efforts are being made to increase transparency in public administration and to improve the relations between the public and the private sector  
**BUT**  
The economy is still characterised by a significant presence and intervention of the public sector.

Measures are being taken to modernise the public sector, purify the competition in the market and make the labour market more flexible  
**BUT**  
The competition in the market is not considered “healthy” yet and there is lack of the required skills and specialities.

The role of the regional authorities is becoming stronger  
**BUT**  
There is lack of expertise in the design and implementation of policies at local level and the regional disparities are still significant.

The growth rates are high

**BUT**

the starting points are at very low levels.

We are going to a Knowledge Society

**BUT**

The way knowledge is produced, used, diffused and exploited does not facilitate the course to a Knowledge Society, the population is ageing and there are large numbers of immigrants that are not integrated in the Greek society.

### **SWOT analysis**

Based on the analysis of the current situation and the major trends characterising Greece's course, the following were identified as the strengths, weaknesses, opportunities and threats in the way towards a Knowledge Society. (In a similar way to the trends, each strength is counter-balanced by a relevant weakness, each opportunity is counter-balanced by a relevant threat).

### **Strengths and weaknesses**

We are achieving high growth rates

**BUT**

The conditions to establish sustainability in the development are not here - we are reacting to external pressures.

We are "EU-optimist", "open" to doing new things, flexible, easily adjusting to new circumstances and able to survive under difficult conditions

**BUT**

There is lack of the required factors for change: people - priorities - willingness to take risks, the concept of "quality of life" is not integrated in our every day living, there is the notion that the state should do everything, and there is limited effectiveness of the social dialogue, communication, coordination and collaboration between the actors involved.

There is the business and scientific people of the Greek diaspora to exploit,

**BUT**

Our economy depends on the large public sector, the size of the economy is small, there are still "clientele relations" and thus, inability to attract investments and support new ideas.

The domestic scientific and technological workforce is of high quality, the expenses on education are relatively high, there is the belief that the use of new technologies is important and new technologies are in place in several manufacturing and services sectors

**BUT**

the labour market is not flexible, unemployment is high and there is a gap between the knowledge and skills provided and those required by the market.

There are comparative advantages that could be exploited and lead to a specific model of development

**BUT**

There is limited understanding and demand for innovation and the development model so far has been based on infrastructure investments.

### *Opportunities and threats*

A new model for development (tourism, health, culture, education, energy, sales, shipping) can be developed and followed

***BUT***

There is lack of an “aggressive” vision, or policies promoting a specific image of Greece and we persist in depending on the already replete comparative advantages and are unable to create new ones and dynamic ones (based on the quality of human resources, knowledge, infrastructure and technology).

New technologies to be placed under the service of the new model for development

***BUT***

There is the danger of a new form of illiteracy and social exclusion, and the knowledge / skills which are rapidly down-rated are not replaced / upgraded.

There is the opportunity to have positive impacts from reacting to external pressures (EU directives - Common Agricultural Policy - Community Support Framework - opening of the EU towards the Balkans, Eastern Europe and the Mediterranean)

***BUT***

There is the danger that the reaction is not effective or comes too late and that the interest in exploiting the low-competitive markets of these countries will preserve our persistence in producing low-added value products and services.

There is the opportunity to exploit the geo-political position of Greece in the Balkans and the Mediterranean at social, economical and political levels

***BUT***

There is the danger of agitations in the wider area that may delay the positive impacts of such an orientation.

### *Desirability and likelihood of trends and events*

The trends, reported above, which were identified through expert consultation and desk research, have to be complemented by the responses of the Greek participants in the Euforia Delphi survey. The participants agreed that the situation described by the following statements is the one expected by 2015.

#### Living conditions

- Despite social and employment policy interventions, for most workers their work-life balance deteriorates causing rising family stress and conflict
- Harmonisation of educational standards (including certification) across the EU increases trust and transparency in my country’s educational system
- Life-long learning becomes widespread with a majority of workers undertaking more than one period of substantial retraining during their working life
- Widespread concerns are expressed in my country about social isolation and loneliness, associated with increased reliance on Information and Communications Technologies in working and everyday life

#### Industrial relations

- A major increase occurs in my country in the use of electronic networks for remote supervision of new kinds of work (tele-working, mobile working), and new atypical forms of work
- New forms of networked business organisation, that were unknown or very rare at the turn of the century, will now account for a substantial level of economic activity in my country
- A majority of the workplaces in my country, in which collective agreements were in place at the turn of the century, are covered by individually agreed employment contracts

#### Working conditions

- Social and policy changes in my country encourage female entry into professional and technical jobs that are currently male-dominated, leading to substantial decreases in gender-related pay inequalities
- The attitude towards co-operation and organization is improved in the next 10 years contributing to the creative absorption and management of knowledge within the Greek enterprises.

#### Governance and mobility

- New technologies and knowledge management methods greatly strengthen the ability of governments and organisations to engage in widespread social control in my country
- Widespread use of ICT in e-governance enhances transparency in the procedures concerning the relationship between the citizen and the state in my country
- EU policies are used to promote labour market mobility, despite resistance from individuals, trade unions and employer organisations

#### Sustainability and development

- Europe has developed into a leading force in the area of sustainable development and the use of environmental technologies
- The public educational system is upgraded and restructured (concerning the type of knowledge provided, the way students and professors are evaluated) because of the competitiveness with the other countries' systems.
- The large urban centres, such as Athens, Thessaloniki, Patra and Crete, evolve into 'innovation islands', while the periphery remains underdeveloped.

#### Health and privacy

- Widespread use of telemedicine and on-line health monitoring systems increases the ability of people with serious chronic and age related diseases to maintain their independence

They also stated that the following statements are more or less true but to a lesser degree compared to the ones presented above:

#### Governance and mobility

- Labour relations organisations (e.g. trade union and other representative bodies) will have a major influence on government and business in shaping the knowledge society in my country
- The balance between immigration and emigration in the EU15 causes the percentage of non-EU15 immigrant workers to more than double by 2015.

#### Sustainability and development

- EU enlargement shifts economic resources towards accession and possible pre-accession countries, diminishing disposable income in the EU15 and creating the conditions for persistent unemployment of at least 10% across the EU15
- New European styles of business management emerge to rival the American model of economic and business management.

#### Working conditions

- Widespread growth of a '24-hour' society in my country leads to a doubling in the amount of unsocial working time
- Widespread self-employment reduces reliance on conventional forms of employment in my country
- New organisational procedures and systems that turn firms and other organisations into "learning organisations" have been widely adopted, and not just by a small vanguard, in my country
- There is widespread perception in my country that workplace violence and harassment has been reduced substantially by new monitoring, reporting and management procedures.

#### Health and privacy

- Everyone in my country is compelled (at birth or entry) to provide blood or tissue for depositing in a national "genetic fingerprint" databank to support health, criminal justice, and other systems
- Concerns about possible health effects of low-level, long-term exposure to physiologically and psychologically active chemicals, microwave radiation and products of genetic engineering have debilitating influences on major industries.

On the other hand, they considered that the following statements overestimated the situation in 2015:

#### Sustainability and development

- The widespread use of e-commerce removes obstacles to accessing products, services and employment in the peripheral regions in my country, increasing their competitiveness and stemming depopulation
- The development of e-commerce decreases the peripheral disparities relating to the access to products and services.

#### Industrial relations

- Trade unions have become more important in my country, responding to new work arrangements, offering networked membership, new types of social security and other services to their members
- Large organisations in my country have widely introduced new, innovative and systematic models for employee participation in decision-making relating to working practices and capital investment.

#### Health and privacy

- Practical use of DNA screening to test a person's suitability for work, education and health insurance creates new forms of ("genetic") inequality and discrimination in my country
- Social and political movements concerned with civil liberties have a major influence on government and business.

#### Sustainability and development

- Increases in wealth creation and quality of life are achieved using proportionally less energy and natural resources than at present
- The competitiveness of Greek enterprises that target 'non-competitive' markets in the Balkans, Eastern Europe and Mediterranean decreases.

#### Working conditions

- Widespread abandonment of conventional notions of retirement in my country enable the elderly to continue working if they wish to.

#### Governance and mobility

- Regulatory authorities take steps to ensure that users are confident that world-wide communication networks are secure against practically all conceivable emergencies.

#### Living conditions

- A practical emphasis on ethics, justice and equity increases in working life, and strongly influences the development of business and conduct of professions in my country.

### ***Synthesis of outcomes***

The data and information about the current situation in Greece as well as the trends, views and expectations of the experts consulted can be summarized as follows:

#### ***Economic structure and performance***

High growth rates but also low starting points characterise the Greece's performance and there are concerns that these high growth rates are caused by circumstantial factors that may cease to exist and not conditions that can guarantee sustainability in development. Although income per capita and GDP increases, there are still significant income inequalities hindering a balanced development. Efforts are being taken to 'purify' the competition in the market but the presence of the public sector in the economy is still significant and 'clientele' relationships hinder the 'healthy' operation of the market. E-readiness and networking are at very low levels and people do not believe that e-commerce will be widespread and have positive impacts on decreasing regional disparities by 2015. However, there is good potential in innovation ability if the good quality of the human resources in science and technology is further exploited and the efforts to create a financial environment conducive to innovation are continued and start bringing positive results. High-tech sectors are growing dynamically but employment in medium and high-tech industries and services is low and there is also the tendency to outsource ICT production to cheaper labour force coming for example from India or Bulgaria. Therefore, it may be more meaningful to place new technologies in the service of the traditional areas like tourism and agriculture, which present a significant development potential (health tourism, agro-tourism, re-location after retirement, re-location exploiting tele-working, business tourism, biological cultivations, energy cultivations, etc.). Additionally, persistence on producing low added value products and services has to be eliminated. The high potential of even the traditional and quite developed sectors like tourism can only be exploited if services have something new to offer and products are innovative and their rendering is supported by improved infrastructures and better qualified human resources.

#### ***Social and political circumstances***

Some people fear that use of new technologies and the knowledge society will only benefit specific segments of society and will thus increase social inequalities and regional disparities. They think that the large urban centres will get most of the attention and the periphery will continue to lag behind. However, the regional authorities have started to become more important and will be called in the near future to play an active role in designing and implementing regional

development policies. Nevertheless, there are doubts whether the necessary expertise and competences are available at local level.

New policies have been designed aiming to tackle the deficiencies in several areas (like education, training and life-long learning, employment) but although they seem well designed, greater coordination is needed and the effectiveness of measures has been limited so far.

The education system is not built around the 'idea' of lifelong learning. Furthermore, the way knowledge is produced, used, diffused and exploited does not create the conditions necessary to develop a Knowledge Society. The education system and the services provided, however, are expected to improve, due to the harmonisation of educational standards across EU and the competition from the more advanced countries. Life-long learning is also expected to spread in the coming years. The good level of education of the Greek population, on the other hand, which is close to the EU-15 average, the low pupil-teacher ratio at primary and secondary levels, and the high-quality of the Greek scientists and researchers along with the potential to exploit the Greek diaspora give encouraging signals for the development of a Knowledge Society in Greece.

### *Working conditions*

On the other hand, the labour market is characterised by limited flexibility and adaptability. High unemployment with significant variations between men and women, levels of education and age groups complement the picture. However, people believe female employment will increase due to social and policy changes and gender-related pay inequalities will decrease in the future.

Working conditions in Greece do not show a course towards increased task quality (variety, learning new-things, participation in decision-making) and work pressure is lower than other EU countries. Indeed, people doubt that the majority will become 'learning organisations' in Greece and employees will have an increased role in company decision-making. However, the proportion of experiences of increased skills and responsibility are relatively high in comparison to other countries. On the other hand, they tend to agree that the attitudes towards organisation of businesses will also change in favour of knowledge management and creation over the next ten years. They also think that labour market mobility will increase within the EU but they have doubts that we are going to become a '24-hour' society and that the amount of unsocial working time will double. They are also sceptical that self-employment will reduce reliance on conventional forms of employment and they don't believe that conventional notions of retirement will be abandoned so that the elderly continue to work if they wish to.

### *Living conditions*

The population is ageing, divorces are increasing, and the birth rates are low. The average family size was 3 people in 1991 and steadily declining (National Statistical Service). On the other hand, there are large numbers of immigrants that can contribute significantly to the country's development and to solving the lack of income of the social insurance system if they are integrated in the Greek society (Kadda, D., 2003a). However, increased criminality attributed to immigrants and loss of jobs due to cheaper labour costs ('black' labour) has made Greeks reluctant to accept integration of other nationalities and cultures in the society. The situation is only now starting to smooth out.

Several people are dissatisfied with the quality of their lives. Some believe that despite social and employment policy interventions the work-life balance will deteriorate and they have concerns about social isolation and loneliness but also privacy violation caused by increased use of information technologies. However, the younger generations are more adaptive to and keen on using new technologies and, thus, this 'conservativeness' is expected to lessen significantly in the coming years.

The Greeks also feel less secure in their jobs and less satisfied than the other Europeans (EU-15) and express concerns about their ability to be pensioned and live only on their pensions when they are retired, if the retirement age is further increased and the pensions are reduced. However, no such intentions have been expressed by the government.

The notion of 'quality of life' hasn't been integrated in everyday living. Energy consumption is high and despite the large renewable energy resources available in the country, these are not exploited in full. In addition, there is still abuse of the natural sources in some cases and people do not believe that less energy and natural resources will be used by 2015. Nevertheless, they believe that Europe will be a leading force in sustainable development and use of environmental technologies by 2015.

The Greeks express also limited satisfaction in the way democracy works and they do not believe that by 2015 social and political movements for civil liberties will have a major influence on government and business or that emphasis on ethics, justice and equity will increase in working life influencing the development of business and conduct of professions. Furthermore, they believe that new technologies will give the ability to governments for social control but they also think that e-governance will enhance transparency and improve relationships between the state and the citizens.

### ***Industrial relations***

The industrial relations and working conditions as they are today in Greece do not promote the development of a Knowledge Society. The legislative framework for the upgrading and adaptation of the industrial relations to a new reality has already started to develop but the potential has not been used yet by the social partners. They are still occupied by economic and financial issues, mainly related to pay. However, decisions have just been taken to restructure and merge the two major trade unions and establish greater collaboration between government and social partners. Furthermore, a new chart for employment has been prepared to tackle unemployment especially for women and young people, increase flexibility and part-time employment in the public-sector, regulate terms and conditions for fixed-time contract workers, and establish a forum on employment and labour relations. However, people have doubts that by 2015 the labour organizations will have a major influence on government and businesses or that they will develop new services responding to the new working conditions.

On the other hand, employers are increasingly interested in individual agreements, and refuse to decrease working time without loss of pay cause of low flexibility and high costs by recent employment legislation. Part-time employment does not show a tendency to increase but tele-work and outsourcing presents increasing trends. Indeed people believe that by 2015 electronic networks will be used for remote supervision of new kinds of work and atypical forms of work, new forms of networked business organization will account for a substantial level of economic activity and individual agreements will replace a great part of collective agreements. On the other hand, they doubt that even large organizations will have introduced new models encouraging employees' participation by 2015.

The synthesis of all the above findings along with the Greek and European scenarios developed under the National Technology Foresight Programme formed the basis for the development of the Euforia scenarios presented in the following sections.

## *Scenarios for the development of a KS in Greece*

### *Background*

Based on the current situation and the major drivers and trends characterising the course of Greece to the Knowledge Society, three scenarios were developed:

- the “Awakening” scenario where social change and radical reconsideration occurs and the conditions are created for the trends to have positive impacts and for the negative impacts to be tackled,
- the “Lethargy” scenario with no major changes from today (business as usual), and
- the “Nightmare” scenario where the characterising trends lead to negative impacts due to ineffectiveness of measures, no real change and other external factors with severe consequences.

The second scenario, “Lethargy”, where no major changes occur, was presented at the scenario workshop with the aim to verify once more the current trends and drivers and their interactions and impacts, rather than to develop a specific scenario out of it. Therefore, this scenario is not presented here, as it overlaps with the description of the current development course of Greece that was presented in the previous sections.

The basis for the development of these three scenarios was the scenarios that were developed under the National Technology Foresight Programme. However, the National Technology Foresight Programme scenarios were less oriented to the evolution of living and working conditions and industrial relations or to the Knowledge Society. Therefore, additional input was used to enrich these elements in the Euforia scenarios. This input came from documents describing the industrial relations and working conditions in Greece, the Euforia Indicators Report, and the Delphi first round Greek results as presented above.

The development of a specific scenario requires defining the prerequisites and characteristic conditions that have to be in place for it to emerge. The characteristics and prerequisites of a specific scenario, in turn, are dependent upon the conditions existing within the wider environment affecting the course of this scenario. Therefore, a scenario concerning the course of a country cannot be developed in isolation but only within the wider global and EU environment affecting the course of this country.

As a result, the Greek scenarios were placed within specific characteristics of the world and the EU. The “Awakening” scenario was placed under global characteristics of “Beginning of sustainability” and under a “European Union Renaissance”. The “Nightmare” scenario was placed under “Rake’s Progress” concerning the world and under “Hard Times” concerning the European Union.

Additionally, the way the Knowledge Society is developed is a key characteristic in each scenario. The “Awakening” scenario is based on a Knowledge society developed by coordinated initiatives and demand from the “basis” (“Strength through Coordination”), while the “Nightmare” scenario is characterised by the development of a “Knowledge Society by Decree”. The characteristics concerning the world environment, the European environment and the way of development of the Knowledge Society that were integrated in the Greek Euforia scenarios were elaborated based on scenarios provided by PREST. The wider environment under which the Greek scenarios were placed is described below.

### *The "Awakening" Scenario*

#### Global environment - beginnings of sustainability

- The evolution of some very large companies early in the new Millennium focused the attention of governments and world organisations on the question of governance. The result was the evolution of regional blocs, some formal others less so with the ability to conduct discussions and negotiations of issues of a global kind. Sustainable development was the first of these. These steps helped to understand and showed that policies are effective only when conducted collectively, that inter-governmental organisations were of limited effectiveness, and that there is a need to frame policy of breadth and depth rather than on the basis of economics, the principles of which tend to lag rather than lead global development. The true nature of sustainability begins to be understood to be more than environmentalism and the new understanding of sustainability increases the dynamism of innovation. However, the free market philosophy remains a dominant way of doing business and new economically dynamic regional blocks appear (e.g. Asia) whose emergence, nevertheless, establishes even more the turn to sustainable development.
- While in absolute quantities the largest fuel users remained the same, renewable sources had begun to supply a significant fraction of the world's energy demand. However, major instabilities occurred in the industrial production system as some resources became scarce before the effects of the agreed global policies for sustainable development began to have an effect, but for a time this seemed to be compensated for by an accelerated growth in services.
- Unemployment has been tackled at low but steady rates but the problem of the ageing of the population still persists especially in the developed areas with the deaths exceeding births.
- While poverty and instability still exists - particularly in Africa, where population growth has continued unabated despite the AIDs epidemic decimating the young age cohorts in particular - considerable strides have been taken toward choices to eliminate gross poverty. There is evidence of better (more equal) distribution of food around the planet and signs of independence of the poor areas through support of local agriculture and reduction of mortality due to malnutrition.
- The world is largely at peace and organised terrorism acts are decreased, but not extinguished, and informal forms of international criminal activity appear along with attempts to control it. Inter-regional disputes are usually settled through the intervention of the global community and its institutions.
- The appearance of new and/or mutated viruses (that become resistant to existing drugs) has caused increase in the collaboration among countries and significant pressures on the pharmaceutical industry to create vaccines and new ways of treatment. In parallel, business trips have decreased due to contamination concerns but also due to the widespread use of new technologies in communication.

#### European Union - renaissance

- The EU enlargement is considered to be a success. Although there are different rates of development amongst the different countries, the benefits have exceeded the costs both for the new and the old members, which have managed to achieve a steady development course. This has allowed the EU to re-organise its institutions according to the principles of de-centralisation, transparency and subsidiarity. The role of the re-organised / new institutions is mainly about coordinating the efforts and initiatives of the member states according to the "open method of coordination", which has facilitated the collaboration amongst the countries in several areas (science and technology, employment, education, etc.).
- On the other hand, there is a common European policy among the member states concerning foreign affairs, illegal immigration, justice, security and internal affairs.

- The policies of the individual member states are oriented to social and economic principles of sustainable development. The citizens participate in the decision-making processes through civil organizations. New, dynamic public or/and semi-public, non-profit, non-governmental organizations have appeared in the area of rendering social services (training, support to people of low income, etc). In a generally positive climate, a new ethos is being established for tackling the needs of the social support systems and the integration of new members in the EU.
- The EURO has established its position among the other strong currencies and new relations have been built between the EU and the dynamically emerging economies of Asia and the Pacific. The ageing of the population did not reverse the development growth rates in the developed regions and the strengthening of the entrepreneurship climate. Effective measures were taken as a result of well-designed and coordinated national / regional policies between the member states according to the principles of subsidiarity, self-reliance and collaboration.

#### Knowledge Society - strength through co-ordination

- The Lisbon targets are under revision. While, there are a lot who support the view that there is a specific definition concerning the Knowledge Society and specific quantitative targets should continue to be set and pursued, another view has appeared and dominated the scene. This view says that the Knowledge Society is a transition period that could last several years as the Renaissance, and that there are different models of development of the KS. In parallel, the view persists that the Knowledge Society can be created only by combining the free market principles with those of the social and ecological sustainable development.
- It is further recognized that the EU is a 'melting-pot' of cultures and aspirations of great vibrancy and potential. A 'new European society' notion has dominated in which it is believed that knowledge of all kinds acts as the 'flux', rather than the 'glue', in fulfilling people's aspirations regarding their life-choices and ways of living by embracing the cultural diversity of the European scene. Thus, by 2015 with the minimum of guidance (and heavy emphasis on a new form of subsidiarity) the EU is able to feel, with confidence and satisfaction that the Lisbon Council's intentions are on the way to fulfilment.

#### *The "nightmare" scenario*

##### Global environment - rake's progress

- The decisions taken in the Rio Conference (1992) concerning sustainable development are not taken into consideration in the process of policy making.
- There are only few people - politicians and others - who have realized the world situation and everyday life needs (industrial production, consumption, food per capita, life expectancy, stability and safety). These people try to raise awareness not always successfully.
- Asia is turning into a financial and business centre due to the cheap and specialized personnel; however this development does not reflect the respective welfare of the local population.
- Cities with two faces is a common phenomenon: in the large city centres there is development and modernization, new buildings, streets, parks, etc, while in the areas around the city there are ghettos where the majority of the population lives in poverty due to the increased unemployment.
- The population in undeveloped countries has increased - especially in Africa despite the fact that AIDS remains one of the most dangerous and widespread diseases.
- Due to the limited energy resources, and the high cost of the use of renewable energy sources, there is extensive use of nuclear power that endangers the environment as well as the health of the population (Chernobyl type of accidents).

- Ecological catastrophes are possible to happen (since the international agreements for the environment are not implemented - there are intense “Greenhouse effects”, the rainforests in Amazon are being destroyed, etc)

#### European Union - hard times

- The European Union after the enlargement went through a weakening phase. Although in the beginning everyone thought that the Enlargement would be implemented smoothly, it resulted into different rates of development between the member states rapidly intensifying regional disparities.
- Most of the newly associated states were unable to fulfil the demands and criteria set by the EU and the funds provided are not sufficient to help them resolve their problems.
- Ineffective government measures and decisions from some of the new member states have pushed the EU to interfere by undertaking major responsibilities and implementing protective measures for these countries.
- Respectively the old member states have realised that the benefits they expected from the enlargement (e.g. opening up of new markets) have yet to appear.
- There is discontent and lack of trust, due to the difficult economic situation in several EU countries.
- There is an increase of nationalistic trends that were not so popular in the previous years.
- The institutions for cooperation and common policy are characterised by increasingly limited effectiveness and use (coordination and transnational cooperation is decreasing) -the “Open Coordination” method has proven ineffective.
- There is instability in the Middle East after the war in Iraq (2003). There are local riots and the US is preparing for new wars. The EU fails again to present a unanimous decision concerning the support or not to the war. This division between the member states is weakening the EU even more.
- The average life expectancy of the population in developed countries keeps increasing
- Regional disparities are increasing.
- National policies for insurance, education, employment and welfare cease to be priorities due to financial problems that need to be resolved first in several countries.

#### “Knowledge society by decree”

- The EU has lost its prestige between the member states especially after the enlargement.
- The Lisbon objectives for the creation of a knowledge society have lost their ‘essence’. For this reason, and because it is very difficult for the member states to achieve these objectives there is increasing questioning and even indifference whether they are leading or not towards development.

#### *Common elements among the Greek scenarios*

While the two scenarios (“Awakening” and “Nightmare”) present two extremes, they have some common elements. These elements are important characteristics or trends influencing the wider environment today and expected to continue to exist in the future:

- Marginal increase of the global population - ageing population - low birth rates.
- Immigrants keep coming in the country and there is increase of the workforce mobility among the EU countries.
- Further development and expansion of information technologies - maintenance of digital divide.

- Continuation of the global economic development and technological progress.
- New economic powers appear in Asia and the Pacific-rim countries.
- The EU has not evolved into a Federation. There are different “rates” of development between member states.
- Terrorist attacks as well as new mutated viruses keep on threatening citizen’s safety.

### ***Scenarios analysis***

The Euforia scenarios for Greece were developed in a first draft form and presented to specific experts at the second Euforia workshop. There, they were discussed and finalised according to the following questions.

For each scenario:

- To what extent are the identified characteristics adequate to give a complete of the specific scenario and to differentiate it from the other two?
- To what extent the way things develop in the specific scenario is compatible with the trends and evolutions in Greece and in Europe?
- Is there coherence among the driving forces characterizing the specific scenario? Which forces are adversary - where are there any inconsistencies?
- To what extent is the specific scenario realistic? To what extent it is desirable?
- To what extent do the existing policies lead us to specific characteristics of the scenario and which are these?

For the most desired scenario (the “awakening” scenario):

- What changes are required in the existing policies so as to avoid negative trends and conditions and to create the conditions necessary for a positive course?
- What social changes are required to support the effective implementation of the proposed changes in policy?
- In what areas / fields do we need more knowledge and research so as to facilitate the realization of the required social changes / innovations and consequently help the proposed political changes bring positive results?

The structure for describing each scenario was agreed to be the following:

- Title and short description
- Specific features of pathway, main trends, events and turning points
- Economic structure and performance
- Social and Political Circumstances
- Living Conditions (Work-life balance, Family structures, household composition, Child and elder care, Levels of living, consumption practices, Health and access to health, Incomes - financial resources, Education and Training, Participation in social life, Housing and Environmental quality, Transportation, Criminality and safety, Relaxation, Culture and European dimension, Time management)

- Working conditions (Work hours, Contractual arrangements, Physical and social features of job, Nature of hierarchy, management of structures, Requirements for skills, Security of career and work (status, incomes, social security, rights), Health and welfare (health hazards, organisation of work), Development of skills (qualifications, training, educational institute, evolution of career), Conciliation of work and personal life (working and non-working time, social infrastructures)).
- Industrial relations (Formal representation structures, Informal structures, Quality of industrial relations - participation in decision making, etc., Industrial conflict and conflict resolution, Quality of industrial relations - participation in decision making, Collective agreements, working conflicts and ways of solving them (strikes, etc)).

The final versions of the Greek scenarios are presented below.

### *The 'awakening' scenario*

#### *Title and short description*

Awakening - sustainability - acceptance and promotion of multi-cultural environment - steady high rates of development - peace - the basis has been created for a better future - the course towards a Knowledge Society is now clear and visible along with the first positive results.

#### *Specific features of pathway, main trends, events and turning points*

- 2004 was a significant turning point for Greece. The EU enlargement resulted in the loss of the competitive advantage concerning the cheap labour force, which Greece still enjoyed at a certain extend in some economic sectors in 2000. The growth rates stopped after 2004, when the investments because of the Olympics finished and the structural funds decreased after the accession of poorer regions. These facts resulted in a “shock” and the “awakening” of the Greek state and society around 2006.
- The media played an essential role in making people realise the difficult situation. They gave even more emphasis in criticizing and evaluating policy decisions and in awakening the Greek society. This resulted in an increasing demand coming from the “basis” for re-designing the development course taken till that time.
- The revision of the Lisbon objectives and the adoption of the subsidiarity and self-reliance principles in achieving them resulted in the “demystification” of the “Knowledge Society” and the “Information Society”. The Operational Programme for the Information Society did not achieve the targets set to the degree expected in 2006 but the “ground” was prepared for the development of the Information Society in Greece. In parallel, the view persisted that the development of the Knowledge Society in Greece should be unhooked from the Information Society and that it should be based on the natural (static) as well as the anthropogenic (dynamic) comparative advantages of the country.
- Consequently, policies were re-designed in 2006 according to the natural comparative advantages and the ability to create dynamic advantages concerning the human resources with special emphasis in the differentiation and the quality of the products and services, education and training, health and tourism with the wider sense (business, pleasure, moving to Greece after retirement, thermal springs, etc.). In 2015 the “development engine” is the agricultural sector (integrated management of cultivations, biological-organic, energy cultivations), the respective sectors for processing the agricultural products, and the services (tourism-health-culture, sales and shipping). The development of the rest of the manufacturing sectors has remained steady at the levels of the beginning of the 21st century. However, there are exceptions of remarkable manufacturing enterprises. The first results from this “turn” and “awakening” are evident in 2015.
- The educational system is considered one of the most important pillars of the system in the course to the Knowledge Society and has been given significant priority both by the state and the society in general. The public educational system has been upgraded and modernized and now competes equally with the systems in the other developed EU

countries, as well as with the domestic private educational centres, which still remain the minority in Greece in 2015. The upgrading of the education provided by the public centres as well as the training provided by vocational training centres are now in line with the needs of the market in skills and qualifications. Moreover, they take into account the differentiation and upgrading required especially in work positions where the knowledge is rapidly downrated. Knowledge is provided through flexible curricula according to the interests of the students, exploiting their talents and inclinations. This is further facilitated by a new generation of teachers / trainers having the necessary skills. Education is now obligatory till the end of high school (12 years of education) and equal opportunities are guaranteed for general and specialized courses through the use of new technologies. Access to Internet is free of charge and owning a P/C is the major transaction means with public services, work, communication and education. In parallel, the desire of the society for vocational training and life-long learning has been rapidly growing exploiting the measures taken by the state.

- The upgraded educational services, the revival of the “traditional” sectors (agriculture, tourism) and the appearance of new sectors in combination with the general good economic situation achieved around 2010 has resulted in the improvement of the capital infrastructure, the human resources and social capital of the country, as well as in the increase of the investments and the creation of new work positions.
- The public sector has been modernized through the use of new technologies and the adoption of a new, friendlier and more collaborative attitude towards the citizens and the private sector (several semi-public and private entities appear rendering services to the citizens).
- Purification concerning the market competition has gradually been achieved with the elimination of the public interventions and the “cliente relations”. Thus, domestic and foreign investments are now attracted more effectively.
- Several of the new work positions are taken by foreigners and immigrants, who have been positively integrated in the Greek society. The Greek society accepts and encourages cultural diversity.
- The policy for equal opportunities has at last brought positive results since it has been effectively combined with additional actions and motives (financial, social, society awareness, social support structures for child and elder care, all-day schools). The low birth rates, however, are still a problem both at national and European levels.
- Research is focused on differentiating products and services related to the agricultural sector, to the integration of new technologies in the “traditional” sectors (tourism, health, education, energy and the environment, where effective measures are taken for the exploitation of the renewable energy resources). Renewable energy resources along with natural gas and biomass cover large part of the domestic energy demand in 2015.
- Relations with Turkey have improved dramatically. Turkey was accepted in the EU, as originally planned, and a positive climate re-emerges for solving the Cypriot issue. These facts have facilitated the reduction of the public expenses in defence and the increase of the public expenses for health, social welfare, research, innovation, entrepreneurship, education and training.
- The general good conditions attract not only foreign investors but also the Greek scientific and business community located abroad (the Greek diaspora located especially in the developed EU countries and the USA) who contribute even more to the development of the country and the creation of the conditions necessary for continuous and stable (sustainable) development.
- In 2015 Greece belongs in the group of EU members with the medium development growth (and not the lowest) and is the centre of the “European region” of the Balkans with increased role of the citizens in policy formulation through extensive use of social dialogue mechanisms and e-governance.

### ***Economic structure and performance***

- The market operates in a rational and effective way and is characterized by the harmonious co-existence and interrelation of the rules of the free market and the principles of social responsibility adopted both by the state and the enterprises.
- Competitiveness is based on the exploitation of the natural comparative advantages and the creation of new dynamic advantages regarding anthropogenic qualities. The revival of the “traditional” sectors and the appearance of new ones have resulted in more work positions, thus tackling, slowly but steadily, the unemployment problem.
- Innovation is promoted in a wider sense (quality and differentiation) as a major political target. All bodies (enterprises, universities, research centres) understand that innovation is a pre-requisite for development.
- Policies are formulated based on criteria of balanced development and sustainability and also on principles combining liberal and social economy rules and norms.
- The services sector is the most important in the Greek economy

### ***Social and political circumstances***

- Politics and the state have the role of facilitator in the development of the market but also of the creator of the framework for the achievement of agreed, long-term objectives. The regional government has been strengthened after 2006 and is now actively involved in the design, apart from the implementation, of policy at local level. However, regional disparities still exist but are slowly decreasing.
- New movements appear and “gain space”, supporting a wider philosophy for the quality of life (sustainable development, private and public social responsibility) by combining ideologies of the past and the present. We are a society of educated and informed citizens and socially responsible investors and entrepreneurs.
- E-governance has expanded and become the major and only means of transactions between the citizens and the state. Thus, the demand for e-education and e-business has increased. E-governance has brought transparency in the relevant processes, has decreased the time and costs of the transactions and increased the satisfaction and trust of the citizens towards the polity.
- Due to the wide spread of e-education, families are now spending less money on education (in Greece or abroad) thus being able to spend more for improving their quality of life.
- The acceptance of a multi-cultural environment, which supports diversity and peaceful co-existence of several different civilizations, has brought new trends in arts and literature.

### ***Living conditions***

- Work-life imbalance has decreased with the use of new technologies, which allow working outside a specific working place and time-frame. At the same time, knowledge acquisition is considered as a prerequisite both for the personal as well as the professional development of a person, thus confusing where working time ends and where personal time begins especially in the knowledge-intensive work positions.
- The average number of children remains one per family in 2015, but divorces have stopped to increase dramatically. However, single-parent families have grown to be a significant part of the society. In parallel, there is a looseness regarding “marriage” (many decide to have children without getting married first) but the institution of “marriage” still remains a strong pillar of the Greek society. The role of the two sexes in the family has been revised allowing for greater equality. House keeping and childcare are becoming more and more services undertaken by others (specialized people, nursing stations, etc.).

- The general good economic conditions and the steadily decreasing unemployment has allowed for more social services for the unemployed, the elderly and the children.
- “Green values” are dominant in the way of living, working and consuming.
- In 2004 the end of the social insurance funds was more threatening than ever before. This made the government adopt a radical, new as well as risky policy for solving the “insurance” problem, which eventually proved to be successful. This policy was designed in close collaboration with the social partners (increasing the public funds provided to the social insurance system, eliminating invasion concerning the enterprises contributions to the social insurance system, integrating the different public insurance funds, promoting and supporting the creation of professional insurance funds, tackling “black labour”). Thus, in 2015, the savings increased, without the reduction of the pensions or the increase of the retirement age above 65 years, or the increase of the contributions of the employees. At the same time, the positive integration of the immigrants in the Greek production system contributes to tackling the “insurance” problem, which, however, is not considered to have been solved definitively as there are still concerns that the problem will be intensified after 2030 due to the low birth rates and the increase of life expectancy.
- The public health services have been modernized and upgraded and now render quality services both at the urban as well as the rural and remote areas of the country, covering all economic and social statuses of the population. However, the EU citizens of middle and upper classes can afford private health services as well which are considered of better quality than the public services, in contrast with the low-income classes and immigrants. Private health services can be paid for by using the benefits provided by the public and the private insurance systems that a person is entitled to. The use of new technologies and e-health services is applied faster in private health centres but still remains at low levels in 2015.
- The average family income has increased and the concept of “quality of life” is now incorporated in every day living. Several regions like Attica and Crete are now Objective 2 regions. However, intra- and inter-regional disparities still exist but to a lesser extend than in the past.
- The use of new technologies at work and in every-day life had brought imbalance and isolation from social life but in 2015 the situation seems to have restored its balance again, while new forms of social life have found their place in the society (thematic parks, virtual parks, chat rooms, etc.).
- The right balance regarding working at home is improving the relationships within the family and at the same time the development of infrastructures and the improvement of the living standards at the countryside have brought inversion of urbanism.
- The positive integration of the immigrants and the acceptance of multi-culturalism, in combination with the increased social benefits and rehabilitation of socially excluded groups, has improved social cohesion, and decreased criminality as well as the funds spent in tackling such problems.
- The non-exclusion of the elderly (with the development of services for their care, nursing, psychological support and entertainment) along with the efforts to exploit their knowledge and experience have resulted in greater cohesion and better communication between the young and older generations.
- Time management has improved after going a rather crucial, initial phase with the use of new technologies (at work, at home, in the transactions with the public services).

### ***Working conditions***

- The labour force has increased with the integration of the immigrants and other EU nationals. The emphasis given by the majority of the enterprises in quality and differentiation, rather than on producing cheap products, has facilitated the decrease of the working time to 35 hours per week without a decrease in salaries and the promotion of new forms of work (focused vs. multi-skilled, full vs. part time, flexible working hours and places, tele-working).

- The flexibility in the labour market has brought flexibility in the labour legislation, which has been upgraded to represent the needs of the new groups of employees. The working week lasts 35 hours but the places where multi skills and responsibilities are needed continue to require more working time but give considerable flexibility in the time and place.
- The increased sense of social responsibility has brought increase in voluntarism, which is now a major engagement during the free time of people.
- Roughly speaking, three forms of employees have appeared in all sectors of the economy, either in the public or the private sector: those doing repetitive jobs using or not using new technologies, those rendering customized services, and those holding posts requiring a combination of various skills and qualifications. These new forms have caused changes in the management structures within enterprises and organizations. The “vertical” hierarchies have been replaced by “horizontal” management structures and changes appear in the way an employee evolves within an enterprise or organization.
- Corporate social responsibility has been adopted by most enterprises and expands from “respecting the environment” to improving the relations between the employers and the employees, thus having a positive impact in the working conditions and industrial relations.
- The Knowledge Society concept characterizes the function and organization of the enterprises. This has resulted in more training programmes organized by the enterprises for their employees in new methodologies and technologies with the aim to improve quality, innovativeness as well as satisfaction from work.
- The state, in collaboration with the enterprises, take measures to ensure safety at the workplace but also satisfaction concerning salaries, insurance, recognition and acknowledgement of the employees’ contribution.
- The promotion of women employment and entrepreneurship has changed the social attitude regarding working women. This, along with the increase and improvement of the services provided concerning child- and elder care, has helped more women start / continue working.

### ***Industrial relations***

- Strikes have decreased considerably because the role of the social dialogue in solving issues and problems has increased and become more effective.
- In parallel with the old forms of work, new forms have appeared and become important (focused vs. multi-skilled, full vs. part time, flexible working hours and places, tele-working).
- The appearance of the 3 new groups of employees has caused changes to the industrial relations. The trade unions have developed services to cover the extra / different needs of these new groups (networking, not massive representation, flexibility for working time and place, (re)specialization, and changing work positions).
- The social partners, have not only developed new services, but they have also reorganised themselves into new smaller groups and applied new structures to cover the needs of the new forms of work(ers) There is good combination of both formal and informal forms of representation of workers and employees (virtual networks, e-representation).
- Individual contracts have increased considerably but collective agreements are still the main tool for negotiations.
- It is now obligatory for the social partners to actively participate in the decision-making and policy-formulation processes.
- The employees take part in the decision-making processes within the companies and organizations.

## *The “Nightmare” Scenario*

### *Title and short description*

Nightmare - fearing tomorrow - social inequalities - poverty - isolation - return to the past.

### *Specific features of pathway, main trends, events and turning points*

- Turkey has not managed to be included in the EU and tensions in the Greek -Turkish relationships have increased.
- The EURO did not make it as a strong and stable currency and at this stage seems to be about to collapse
- Because of external threats (Turkey, tension in the Balkans, etc), the instability in the EU, the weakening of the Euro and the unsuccessful integration of the immigrants in the Greek society, the government has been taken over by parties that have nationalistic ideologies which try to promote national priorities and safety and try to detach from EU policies
- There are constant violations of human rights - secret services are very developed in order to re-establish stability
- The world is going through an oil crisis which results in a more general economic crisis
- The situation in the Balkan area is unstable
- There have been negative development rates in the Greek economy after 2005
- There is a general disappointment and lack of trust towards the EU
- Due to the economic crisis that exists in the country the terms and preconditions set by the EU can not be fulfilled and there is a possibility of leaving the EU (willingly or not)
- There has been increased migration towards the central European countries
- The population increases in the city centres and there are very few people in the rural areas resulting in a worsening quality of life

### *Economic Structure and Performance*

- The EU funds as well as the national support schemes have decreased significantly after the end of the 3rd Community Support Framework
- The situation in agriculture is worsened (after the end of the Common European Agricultural Policy in 2010) and the same applies for tourism and other services sectors due to the bad policy implementation undertaken by the government as well as the inability of the private sector to improve products and services
- There are new monopolies and oligopolies in several sectors
- The competitiveness of the enterprises that have been doing well is decreasing while most enterprises just struggle for survival - there are no “quality improvement” objectives, the main objective is the low production cost
- But after the enlargement Greece has lost the competitive advantages since it can no longer offer cheap labour
- The public sector - instead of decreasing - keeps growing and becoming more and more ineffective and bureaucratic
- There is no Foreign Direct Investment towards the country
- The two most important sectors in the country (agriculture and tourism) tend to be saturated

- There have only been marginal improvements that mainly took place in sectors where there is either state support, e.g. agriculture and defence, or there is pressure from the EU
- “Black economy” is blossoming

#### *Social and political circumstances*

- Social Inequalities are increasing rapidly
- Intense presence and development of secret services / army and police forces
- State provisions towards the citizens are decreased in all sectors (education, health, security, etc)
- Retirement age is increased while there is a decrease in pensions, social provisions and social infrastructures
- There is severe monitoring of those leaving or coming in the country
- But illegal migration keeps increasing and so does unemployment
- The population keeps moving towards urban centres while the rural areas are abandoned
- The quality of life is worsened even in the most developed areas

#### *Living conditions*

- Work is taking up most of the time of people - and no time is left for an integrated family and social life, because people need to work for many hours and sometimes in several jobs, due to the low income (bad quality of life and lack of personal time)
- Enterprises seem to appreciate “foreign labour” since the immigrants are much cheaper than the local workers - increasing “black labour”
- The population is ageing and there is social exclusion of elder people from the social life
- The welfare and health support services systems collapse. There are new private health services - increased prices, but only few can afford them
- There is very slow and small development of E-governance services which can only be accessed and used by an “elite”
- There is no social participation in the decision making process
- There is an increase of bureaucracy as well as of the inefficiency of the public sector
- There is increased lack of trust towards the government
- Social monitoring / development of secret services / cameras in all public places/ there is limited social life or entertainment - which was anyway limited due to the lack of time and money
- The enterprises due to the bad economic situation do not give priority to the further training of the people they employ - the Knowledge Society loses its “essence”
- Concerning family structures, lack of time due to intensive work of both spouses, does not permit the smooth family living. However, divorces are not increased (one-parent families are almost impossible to get by from a financial point of view) but there is a significant decrease in the birth rate while the position of women in the society is undermined.
- The quality of housing due to the inefficiency of resources is getting worse, and so does the quality of family life. On the other hand, environment is also worsened due to the lack of state services and infrastructure.

### ***Working conditions***

- Innovation plays a very small role for very few enterprises
- Increase of retirement age
- 35 hours of work per week is no longer a demand of the trade unions but a long lost dream
- There is no satisfactory working environment and there are many working life hazards within the workplace. Government services and enterprises cannot improve the situation due to the bad economic conditions.
- Employees feel insecurity in their jobs - not even those working in the public sector are now sure that they will be able to keep their jobs ('life long employment is abolished)
- There is no satisfaction from work since new ideas and proposals for innovation have no longer a place in enterprises and organisations
- New technologies are mainly used for monitoring working places (cameras, microphones, taping of phone calls, etc)
- Internet has not penetrated Greek enterprises nor the public sector since information is being controlled and employees can not use the internet freely
- Women participate in the workforce (due to the increased needs within the family), but they keep being occupied in low-income jobs and mainly in "black labour" - indicative of the failure of equality policy.
- Full time employment remains the main type of employment
- There are no equal opportunities in education or information. There is an elite that excels in relation to the rest of the population.
- Peripheral disparities keep growing as well as the population and the workforce in the urban centres resulting in the increase of unemployment and desolation of the countryside
- Business management, following the example of the national government plays a very dictatorial role and do not permit smooth liaison with the employees.
- Due to the fact that everyone is trying to decrease the production cost and to produce only low added value products, knowledge intensive services are absent, and consequently there is no increased demand concerning skills and capabilities of employees. Those who have more skills are limited and they hold high management positions.

### ***Industrial relations***

- Collective agreements are not in the best interest of the enterprises and the state aims to weaken the Trade Unions - which are already weakened due to the increased unemployment.
- Demonstrations concerning employment policies are increasing but there is low representation of the employees (due to the weakened trade unions) resulting in the desirable results not being achieved.
- Many businesses are bankrupted and many employees lose their jobs; the unemployed - protesting - occupy the buildings of these businesses
- There is increase of the regional disparities
- There are no informal forms of employees representation in the businesses due to the strict management
- Companies do not satisfy the demands of the employees because they can easily replace them by hiring immigrants

### *Comments of feasible key social innovation by 2015 and role of key players*

#### *Policy implications*

The extent was examined to which existing policies lead Greece to specific characteristics of a scenario. It has to be noted that the workshop participants expressed the feeling that the existing policies, and more specifically the measures taken lead Greece to characteristics of the “Nightmare” scenario. Therefore, the changes needed in the existing policies were discussed so as to avoid negative impacts and create the conditions for the course to the “Awakening” scenario.

The way to the “Awakening” scenario is possible only if the required conditions are created not only at the national but at the European level. Among these prerequisites, the situation in the EU plays a major role. However, the EU situation is not expected to be the one described in the “Awakening” scenario by 2015. It was noted, though, that it may be achieved some years later (2020-2025). Nevertheless, this scenario is the desired one and in order for it to be realised, specific policy changes are required, apart from the “awakening” of the Greek polity and society:

- To make the changes needed for the ‘purification’ of the market, the financial environment and the development of businesses,
- To increase the flexibility of the labour market and to be able to cover the needs of the market in skills and qualifications.
- To reduce the public intervention in the economy and to eliminate “the clientele relations” between the state and the businesses as well as the social partners.
- To reinforce the impact of the social dialogue and effective cooperation with the social partners.
- To create a new regulatory framework to cover “atypical” work (flexitime, tele-work, etc.)
- To adjust the way knowledge is produced, used and diffused in both the educational institutions as well as the enterprises and organizations, according to the characteristics of a Knowledge society, so that the demand for further training and life-long learning comes from the “basis”.
- To further support the scientific and technological human resources and to create the conditions that are necessary to attract the business and scientific resources located abroad (Greek diaspora).
- To take effective measures to tackle the social insurance problem, the purification and improvement of the public health and welfare system, and the problems related to low birth rates.
- To increase the independent structures to control and tackle corruption concerning public money as well as evasion concerning taxes and social insurance contributions.
- To take measures to eliminate “black labour”.
- To turn to the exploitation of the natural (static) advantages of Greece and the creation of new anthropogenic (dynamic) comparative advantages.
- To place the new technologies in the service of these advantages, in the improvement of the public services and in the increase of quality of life and work.
- To take measures for the positive integration of the immigrants and foreigners in the Greek society.
- To adopt the concept of innovation (quality differentiation) as a major political target and as a major pre-requisite for development at all levels (state, economy, society).
- To increase coordination, evaluation and control of the effectiveness of the measures and actions taken in all policy fields.

### ***Key social innovations required***

The discussions with the workshop participants also addressed the social innovations needed so as to support the effective implementation of the changes proposed in the policy areas. The most important ones that were identified were the following:

- To develop and adopt a commonly agreed vision for an “awakened” Greece in 2015.
- To integrate the concept of quality of life in the Greek society, way of living and working.
- To increase the trust and collaboration between the public and the private sectors, the state and the citizens. To exploit the power of the media for this purpose and for “awakening” the Greek society.
- To upgrade the social partners to represent the new forms of work and employees.
- To combine the principles of the free market and those of the private and public social responsibility in rationalising and improving the function of the economy.
- To strengthen the social dialogue role and the active participation of the societal organisations in policy formulation and decision-making processes.
- To create the necessary framework and structures for the promotion of the collaboration between the entities of the polity, the economy and the society.
- To allow for new movements to appear which promote social responsibility, quality of life, diversity and multiculturalism.

### ***Needs for research, more knowledge***

Finally, the areas / fields were identified that needed more knowledge and research so as to facilitate the occurrence of the social innovations and consequently enhance the effectiveness of the proposed policy measures and changes:

- To identify the natural (static) and anthropogenic (dynamic) advantages of Greece and how these can be exploited in the course to the Knowledge Society.
- To explore how and what new technologies can be set to serve these advantages.
- To explore what new skills are required for the “Greek model” of the Knowledge Society.
- To examine the new organisational structures needed in the “Greek version” to the Knowledge Society.
- To examine the spatial and regional dimension of the measures that should be taken.
- To carefully study the current position of Greece and the reasons for being here (major trends, drivers, suspending factors for development, etc.) along with the weaknesses, the strengths, the opportunities and the threats from the wider European and global environment.
- Benchmarking, exchange of experiences and identification of good practices from other countries / regions.

### ***Lessons learnt in the national settings***

#### ***Assessment of the outcome of workshops and surveys***

The outcome of the workshops and surveys is affected by the vagueness of the concept examined, the Knowledge Society. However, although, a commonly accepted definition was not reached, the discussions lead to useful conclusions that can guide a wider and more proper elaboration of this concept.

The workshop conclusions were verified through bibliographic review and personal interviews. However, the limited attendance to the workshops may have hindered more and different views to be heard and recorded.

People are reluctant to look 'ahead' in drawing up Delphi statements. Experts seem 'stuck' in today's situation and what it needs to be improved. Young researchers may be better to address in developing Delphi statements based on the things (trends, impacts, obstacles) they hear from the experts.

Even if more people are targeted to avoid missing specific expertise at the workshops the result might not be satisfying. A reason for this may be that the sponsor of EUFORIA is not the Greek state, in which case experts from employees' and employers' organisations would be more motivated to have their voice heard. Another reason may be the several workshops of the National Technology Foresight Programme taking place in parallel with EUFORIA, which results in requesting the help of specific experts too often in relation to their usually heavy timetables and regular obligations. Another reason might be the still limited critical mass in Greece of experts combining foresight knowledge and expertise in areas like living conditions, working conditions and industrial relations.

### ***Assessment of the usefulness of scenarios in conveying the possible pathways toward a knowledge society***

The development of scenarios require in depth knowledge of the subject in question. The subject of developing a Knowledge Society is as vague as is multi-disciplinary and requires the combination of expertise in a wide range of areas and topics. Ensuring the attendance of all the relevant experts is very difficult if not impossible. Even identifying experts in specific fields may be quite hard.

Furthermore, while the development of specific scenarios can be based on the inputs of researchers and experts, the development and adoption of the political strategies and social changes needed for the realisation of any scenarios require the commitment of policy-makers. This cannot be achieved under a pilot foresight exercise such as EUFORIA. The involvement and commitment of the "users" may turn out to be a long and hard process prior to the foresight exercise and, however hard the efforts, it may not be accomplished if it is not the same "users" that 'ordered' the foresight exercise.

Additionally, the necessary 'foresight' culture in the policy-making process is absent in the Greek reality and the critical mass of foresight experts needed is only now being created. This affects the usefulness and impact that any scenarios can have in policy and decision-making.

## ***Conclusions and recommendations***

### ***Likely development of an EU-wide knowledge society by 2015***

The general feeling that prevailed was that the EU is not expected to develop as described in the 'Awakening' scenario by 2015, although people believed that Europe is going to be a leader in sustainable development and use of environmental technologies.

Different development rates are expected to characterize specific areas of the enlarged European Union with the already developed regions accelerating their progress and the less developed ones still striving to survive. In a similar way, certain societies, or even segments of society within a country, will lead a course to a Knowledge Society but the benefits will not be enjoyed by all. Although progress has been made to decrease regional disparities and social inequalities, these will continue to exist at a large extent in 2015.

Apart from different economic environments, labour markets and working and living conditions, the quite high Lisbon objectives are being pursued under the framework of new challenges caused by ageing populations, low birth rates and

different educational and organizational systems, some of which may not be well suited to promote knowledge diffusion and exploitation.

The creation of a Knowledge Society and the achievement of the Lisbon objectives need a novel approach combining the rules of the free market with those of social economy and responsibility. This is the primary challenge along with creating the conditions necessary to ensure sustainability in development.

The notion of a Knowledge Society is still too vague and different interpretations can fit different socio-economic environments. Although, several discussions were held with the experts consulted and even more are currently undergoing at European level a common definition has yet to be reached. However, it is doubtful whether a commonly accepted definition can, or even, should be reached.

Knowledge may be clearly defined but when it comes to knowledge-based society or economy and even more to a way towards the development of such a society, a clear and commonly accepted definition may be more limiting than useful. The Euforia project indicates that different paths can be followed for the development of a country. The different degree of development among countries does not necessarily mean that the path taken is the wrong one. However, a path followed is not usually effective if it does not allow for the positive integration and exploitation of the country's culture, specificities and strengths.

In this framework, different models of a Knowledge Society can be developed. The development of a Knowledge Society is not necessarily dependent only on the use and spread of information and communication technologies or the presence of high-tech sectors in the economy. While these may facilitate its development, a series of other factors have to be in place such as education and training systems promoting the creation of knowledge, organizational systems enhancing the diffusion of knowledge, working and living conditions requiring the advancement of knowledge and the intellectual cultivation of people.

### *Greece's possible path towards a knowledge society*

The drivers and trends characterising Greece's development falls far behind from leading to a Knowledge Society. However, a possible course to developing a knowledge society has been identified in the 'Awakening' scenario although it may not be achieved as early as 2015.

This development path is characterised by the "awakening" of the Greek state and society and the understanding that the situation is not so positive as the 'figures' show and that growth is not going to last if the conditions to ensure sustainability in development are not in place and if a different orientation from the one followed till now is not followed. An 'aggressive' and commonly agreed vision for an "awakened" Greece in 2015 needs to be developed based on the concept of quality of life, which has to be integrated in every-day living.

As a result, Greece focuses on the exploitation of the natural comparative advantages and the ability to create dynamic advantages concerning the human resources with special emphasis in the differentiation and the quality of the products and services, education and training, health and tourism with the wider sense (business, pleasure, thermal springs, agro-tourism, moving to Greece after retirement or because tele-working facilitates re-location, etc.). New technologies are placed in the service of these sectors. The "development engine" is the services sector (tourism-health-culture) along with the agricultural sector (integrated management of cultivations, biological-organic, energy cultivations), health and the environment related ones (energy, water management, etc.).

This course also depends upon the upgrading and modernisation of the educational system and the services provided, which have to be in line with the needs of the market in skills and qualifications and take into account the differentiation

and upgrading required especially in work positions where the knowledge is rapidly downrated. As a result, the attitudes towards “organisation” change in favour of knowledge creation, management, diffusion and exploitation and the demand for further training and life-long learning increases in the “basis”.

Other pre-requisites for the development of this path is the modernisation of the public sector through the use of new technologies and the promotion of their integration in every-day living (public services, work, communication and education), thus helping people accept more easily new things and changes.

The ‘purification’ of the market competition and the elimination of the ‘clientele relations’ are also major conditions for the effectiveness of this path to attract private investments and facilitate risk taking and development of new ideas. However, the right balance has to be found for the harmonious co-existence and interrelation of the rules of the free market and the principles of social economy and responsibility, which have to be adopted both by the state and the enterprises.

Finally, the integration of the immigrants and foreigners is crucial for the development of Greece. Therefore, the Greek society has to ‘open up’ to accept cultural diversity and learn to co-exist and develop within a multi-cultural environment, which can bring new trends in arts and literature.

This model of a Knowledge Society requires a re-orientation of policies, careful design and ensured effectiveness of measures but also radical social changes and strong political will. Although it was considered the least realistic, it was also believed to be the one that would bring sustainability in Greece’s development. Otherwise, Greece will continue to lag behind if not end up facing several of the problems and negative consequences described in the ‘Nightmare’ scenario.

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### **Annex 1: List of experts consulted**

First workshop invited/ attendants (Athens 28/1/2003):

<b>INVITED</b>	<b>ATTENDED</b>
1. Vasilios Laopodis, General Secretariat for Research and Technology, IT Expert (*) (***)	X
2. Fivos Papadimitriou, University of Macedonia, Greece, Cerographer	X
3. Thanos Mytilinaios, Atlantis Consulting S.A., Economist, HRM	X
4. Vasilis Daglas, National School for Public Health, S&T policy	X
5. Dimitris Kioupiolis, National School for Public Health, Public Policy	X
6. Alexandros Kyrtis, University of Athens, Faculty of Economics, Sociologist (**)	X
7. Nikolaos Varsakelis, Aristotle University of Thessaloniki, Faculty of Economics (***)	X
8. Nikos Maroulis, LOGOTECH S.A., Foresight practitioner (*) (***)	X
9. Nikitas Kastis, Lampraki Research Foundation, ICT and Education (**)	X
10. Stamatis Antoniou, Special Sociologist	X
11. Dimitris Desypris, General Secretariat for Research and Technology	
12. K. Tortopidis, Federation of Industrialists of Greece	
13. Nikolaos Koukoumas, OCTAL , researcher (**)	
14. Dimosthenis Agrafiotis, National School for Public Health (*)	
15. Petros Linardos – Rulmond, General Associations of Greek Employees (**) (***)	
16. Anastasios Alexandridis, Federation of Industrialists of Northern Greece (**) (***)	

(\*) Coordinator of the Greek National Technology Foresight Programme

(\*\*) Expert in the Greek National Technology Foresight Programme

(\*\*\*) Member of the national EUFORIA team

Second workshop invited/ attendants (Athens 17/6/2003):

INVITED	ATTENDED
1. Mr. Vasilios Laopodis, General Secretariat for Research and Technology, IT Expert (*) (***)	
2. Dr. Fivos Papadimitriou, University of Macedonia, Greece, Cerographer (**)	X
3. Mr. Thanos Mytilinaios, Atlantis Consulting S.A., Economist, HRM	
4. Mr. Vasilis Daglas, National School for Public Health, S&T policy (**)	X
5. Mr. A. Petroulias, Network of Voluntary Organisations of Magnisia	X
6. Prof. Alexandros Kyrtis, University of Athens, Faculty of Economics, Sociologist (**)	
7. Prof. Nikolaos Varsakelis, Aristotle University of Thessaloniki, Faculty of Economics (***)	X
8. Mr. Nikos Maroulis, LOGOTECH S.A., Foresight practitioner (*) (***)	
9. Mr. Nikitas Kastis, Lampraki Research Foundation, ICT and Education (**)	
10. Prof. Stamatis Antoniou, Special Sociologist, University of Athens (**)	
11. Mr. Dimitris Desypris, General Secretariat for Research and Technology	
12. Mr. K. Tortopidis, Federation of Industrialists of Greece (**)	
13. Mr. Nikolaos Koukoumas, OCTAL , Expert about health issues (**)	
14. Prof. Dimosthenis Agrafiotis, National School for Public Health (*)	
15. Mr. Petros Linardos – Rulmond, General Associations of Greek Employees (**) (***)	
16. Mr. I. Lemperos, Federation of Industrialists of Northern Greece (**) (***)	
17. Prof. E. Koukios, National Technical University of Athens (*)	
18. Ms. E. Anyfandi, Eugenidou Foundation (**)	
19. Ms. Deligiannis, Federation of Greek Industries	
20. Ms. N. Antoniou, INTRASOFT (**)	
21. Mr. S. Analytis, (EOMMEX) Greek Organisation for SMEs and Handicraft	
22. Mr. P. Basilopoulos, Journalist, Citizens' Society "PAREMBASH" (Intervention)	X
23. G. Boulgaris, National Centre for Social Research (**)	
24. Ms. S. Dakanali, Regional Authority of Crete	
25. Mr. P. Falaras, National Centre of Scientific Research "Demokritos" (**)	
26. Prof. Fytianos, Aristotle University of Thessaloniki (**)	
27. Mr. C. Chrisanthidis, CRETA FARM S.A.	
28. Prof. Chionis, Demokritian University of Xanthi (**)	X
29. Mr. G. Amitsis, Institute of Social Innovation	
30. Mr. S. Gavroglou, National Labour Institute	
31. Ms. Georgiadou, PASEGES (Pan-hellenic Confederation of Agricultural Associations)	X
32. Mr. E. Kassos, OAED (Greek Employment Organisation)	
33. Mr. T. Kokkoris, (EOMMEX) Greek Organisation for SMEs and Handicraft	
34. Mr. D. Konstantinidis, (ELINYAE) Greek Institute for Health and Safety at Work	
35. Mr. I. Kouzis, Panteio University of Athens	
36. Mr. Stergiou, Aristotle University of Thessaloniki	
37. Ms. O. Stergiou, General Secretariat of Research and Technology	

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Experts interviewed on the main trends and SWOT analysis for Greece in the course of the knowledge society:

1. Mr. Dimitris Deniozos, General Secretary of Research & Technology
2. Prof. Ioannis Katsoulakos, Economics University of Athens
3. Prof. E. Koukios, National Technical University of Athens, Coordinator of the National Technology Foresight Programme
4. Prof. Nikolaos Varsakelis, Aristotle University of Thessaloniki, Faculty of Economics
5. Prof. Dimosthenis Agrafiotis, National School for Public Health
6. Mr. Nikitas Kastis, Lampraki Research Foundation, ICT and Education
7. Mr. Nikolaos Koukoumas, OCTAL , Expert about health issues
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