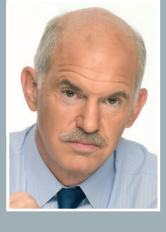
SEPE news

English edition 2009

Kostas Karamanlis

The development vision for Greece in tomorrow's world



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2010 will be a challenge for the Greek ICT market


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The role of SEPE in the Greek market

The Federation of Hellenic Information Technology & Communications Enterprises (SEPE), founded in 1995 by Information Technology companies.

SEPE operates as an institutional interlocutor vis-à-vis the Greek Government, the European Commission and other bodies of influence, by providing valid and accountable advisory feedback, regarding the development of Information and Communication Technologies (ICT) in Greece and by facilitating the development of synergy alliances among its members.

400 companies from all over Greece are currently members of SEPE. They collectively account for more than 95% of the country's turnover in the Information Technology and Telecommunications sector which in turn represents 4,5% of the GDP.

Our goals

- The rise of public awareness on the importance of ICT and the transition of the Greek society to an information culture for all.
- The modernisation of the Public Sector through the use of Information Technology.
- The development of a high - speed telecommunication network to complement the current Communication Infrastructure.
- The representation of the interests and views of Greek ICT Enterprises to the government, public and private institutions, international organisations, the European Union, the media and society.
- The promotion of close partnerships between ICT enterprises and the public sector as well as the collaboration with all relevant bodies for the development and effective implementation of a National Strategy for Information Society.
- The design and implementation of programs addressing the needs of a broad spectrum of business enterprises, so as to improve their competitiveness in the market.
- The cooperation between the ICT market and the academic community in order to strengthen the link between educational curricula and contemporary market needs.

The power and credibility of SEPE at the service of its members

- Active representation of its members in all relevant private or public bodies in Greece and internationally.
- Effective lobbying and leveraging power resulting from promoting members' matters collectively.
- Constant and consistent flow of information for current developments in the ICT market and promotion of opportunities for investment and growth.
- Advanced legal and advisory services that address issues relevant to the ICT sector.
- Fostering synergies with the largest information and telecommunications companies resulting from the exchange of views and the exploration of business opportunities.
- Access to a variety of research data and conference meetings that shape future market trends.

International Presence

SEPE represents its members in the global ICT scene, actively participating in the most prestigious international associations:

400 companies from all over Greece are currently members of SEPE. They collectively account for more than 95% of the country's turnover in the Information Technology and Telecommunications sector which in turn represents 4,5% of the GDP

- Member of the Digital Technology Industry Association (DIGITALEUROPE)
- Member of the World Information Technology and Services Alliance (WITSA)
- Member of the International Telecommunications Union (ITU)

SEPE members represent:

- 95% of the country's turnover in the ICT sector
- 4,5% of Greek GDP
- 55 global technology leaders
- 100.000 employees

We envision an environment that promotes the use of Digital Technology.

ERICSSON

What lies ahead in mobile communications; The Long Term Evolution of 3G

Mobile broadband is becoming a reality, as the Internet generation grows accustomed to having broadband access wherever they go and not just at home or in the office. Of the estimated 3.4 billion people who will have broadband by 2014, about 80 percent will be mobile broadband subscribers – and the majority will be served by High Speed Packet Access (HSPA) and Long Term Evolution (LTE) networks.

People can already browse the Internet or send e-mails using HSPA-enabled notebooks, complementing and in some cases even replacing their fixed DSL modems with HSPA modems or USB dongles and send and receive video or music using 3G phones. Nominal peak rates with HSPA today are about 7 Mbps and the next step with HSPA evolution nominal peak rates of about 21 & 28 Mbps has already been introduced in some markets including our own market, Greece. These speeds, when deployed widely in a mobile operator's network promise the end-user an experience equivalent to that of a DSL fixed broadband network with the additional convenience of mobility. With LTE, the user experience will be even better, equivalent to that of a next generation wireline access network based on fiber. It will enhance more demanding applications such as interactive TV, mobile video blogging, advanced games and professional services.

LTE offers several important benefits for users and operators, including the following:

- Performance and capacity – One of the requirements of LTE is to provide downlink peak rates of at least 100Mbps. The technology allows for speeds more than 300Mbps and Ericsson has already demonstrated LTE peak rates of about 160Mbps. Radio access network (RAN) round-trip times will be less than 10ms, meaning LTE, more than any other technology, already meets key 4G requirements.

- Simplicity – LTE supports flexible carrier bandwidths, from 1.4MHz up to 20MHz. LTE also supports frequency division duplexing (FDD) and time division duplexing (TDD). Fifteen paired and eight unpaired spectrum bands have already been identified by the 3GPP for LTE and there are more bands to come. This means an operator can introduce LTE in new bands where it is very easy to deploy 10MHz or 20MHz carriers and eventually deploy LTE in all bands. LTE radio network products will have a number of features to help simplify the building and management of next-generation networks. For example, features such as self-configuration and self-optimization will simplify and reduce the cost of network roll-out and management. LTE will be deployed in parallel with simplified, IP-based core and transport networks that are easier to build, maintain and introduce services on.

- Wide range of terminals – In addition to mobile phones, many computer and consumer electronic devices, such as notebooks, ultra-portables, gaming devices and cameras, will incorporate embedded LTE modules. As LTE supports handover and roaming to existing mobile networks, all these devices can have ubiquitous mobile broadband coverage from day one. Operators can introduce LTE flexibly to match their existing network, spectrum and business objectives for mobile broadband and multimedia services.

Ericsson has played a significant role to the development of LTE technology from inception of the standard and will further have a key role in the upcoming first commercial deployments in Europe, Asia & North America that are expected to take place in the end of 2009 and the beginning of 2010. In our own market, all mobile operators are evaluating the timeframe for the introduction of LTE in their networks and customers. A key role for this activity will be also played by the regulator EETT that will ensure an appropriate and fair usage of spectrum that this new wireless technology requires.

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KOSTAS KARAMANLIS

The development vision for Greece

The dynamics of the convergence of information and communication technologies leads humanity rapidly to the "knowledge society". In the coming world, the majority of goods and services will be available through the Internet. The broadband digital online information highways, either wired or wireless, enhance the provision of electronic government, distance learning, telecommuting, online information and entertainment. Technology abolishes boundaries and geographic distances and the entire planet becomes a global village. Development correlates to the integration of innovation in the productive and business structures and the operation of the state mechanism. The need to integrate new technologies in citizens' everyday life and the rapid exploitation of their advantages by the public and private sector is therefore imperative.

> Development correlates to the integration of innovation in the productive and business structures and the operation of the state mechanism

In the framework of its Digital Strategy, the Government promoted - and is still promoting - the vision of Greece as a technologically advanced and financially strong country, by encouraging the development of the appropriate network

in tomorrow's world

infrastructures for the new digital environment. Our strategy concerns on the one hand the fixed broadband optical fiber networks and the digital terrestrial television networks, and on the other hand the mobile broadband wireless networks. These measures aim at encouraging competition in both infrastructures and services. Recognizing that the prosperity and competitiveness of a country depend more and more on the possibility of businesses, the state and the citizens to use new technologies advantageously, the Government launched numerous initiatives, specific measures, plans and actions towards this direction:

A) It created and is still creating critical access infrastructures, both wired and wireless, terrestrial and satellite, to upgrade and improve business activities in the areas of the Greek territory, as well as to create and sustain new jobs.

B) It supported actions for the creation of metropolitan network infrastructures, mainly on a local and regional level, by financing and supervising projects of the Information Society to the benefit of the citizens, to combat bureaucracy and enhance transparency in the transactions of the citizen with the State.

C) It achieved the automatization and simplification of numerous administrative procedures. It enhanced the introduction of electronic government systems. It supported projects to upgrade the information systems of ministries, public authorities, social security organizations, etc.

D) It provided incentives to develop applications aiming at the elimination of regional inequalities and the improvement of quality of life throughout Greece, and in particular for the citizens who live in remote and island regions, for which it managed to ensure the provision of distance health, education and employment services.

Even though the development route is still hard to cross and uphill, the results of our policies are already evident. The progress made during the last few years is undoubted. Greece is no longer the last to use and offer high speed Internet and at the same time the first to impose the highest retail prices for this service. Our country managed to achieve a substantial broadband penetration. At the same time, through the promotion of healthy competition amang the providers, it managed to multiply the average connection speed and to decrease substantially the retail prices for broadband connections, which are today much lower than the EU average.

Through the systematic exploitation of the structural programs provided in the Third CSF, our country completed successfully the Operational Program "Information Society", putting emphasis on the digital services sector. Through this, important modernization actions were financed for the entire public sector, in the narrow and wider sense, the municipalities and the rural areas.

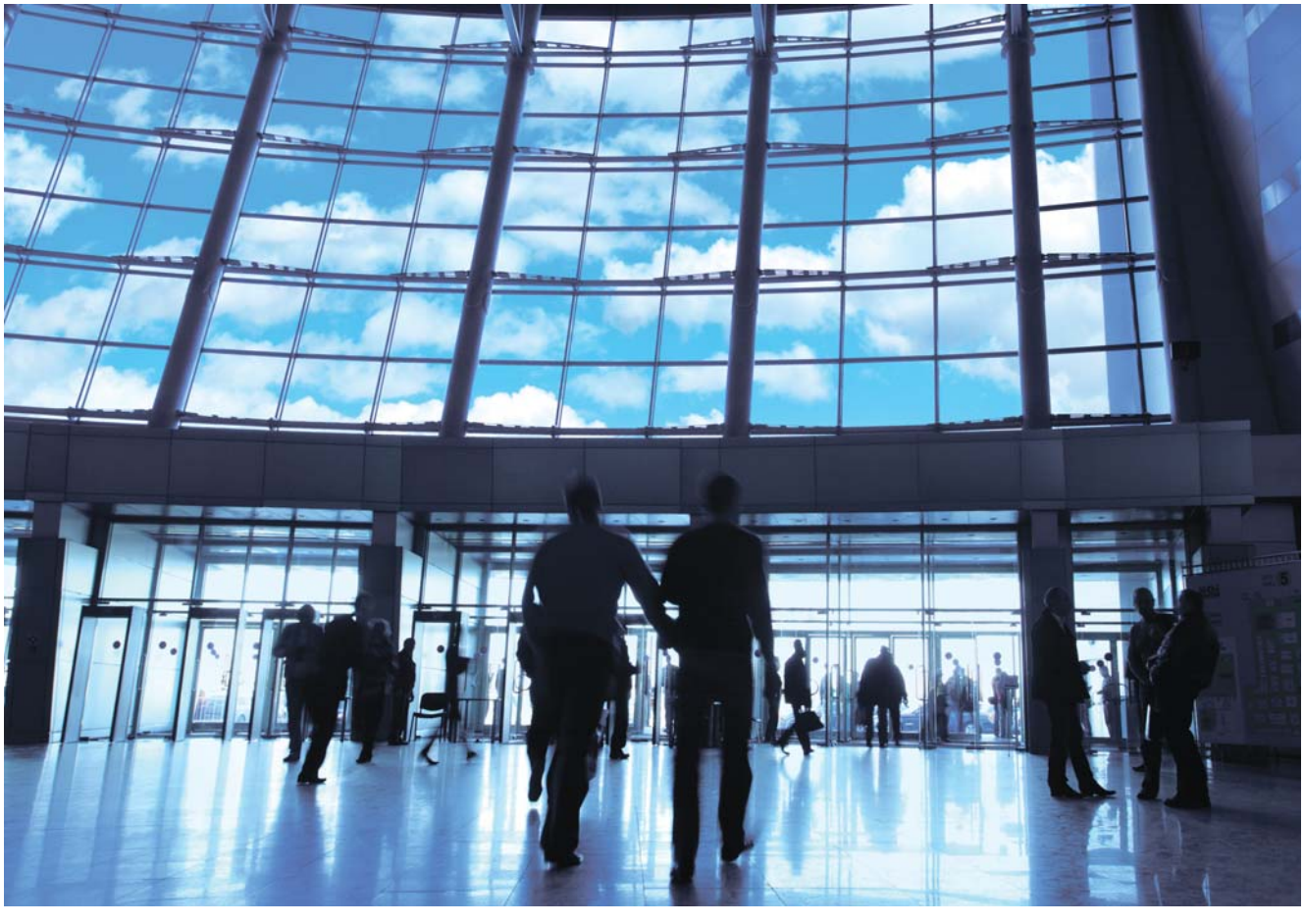
Through the new Operational Program "Digital Convergence" of the National Strategic Reference Framework (NSRF), our ambition is to bring our country to the same level of the advanced EU member states as to digital services. The new actions are focused on services that concern the citizens directly. Our aim is for the digital services to no longer be a privilege enjoyed only by a few "knowledgeable citizens" about the new technologies, but to become visible and perceived by the largest possible number of citizens, giving specific emphasis in those experiencing financial, social or geographical impediments or disadvantages.

A supplementary axis of the governmental intervention is the exploitation of the "digital share" and the redistribution of the map of available radiofrequencies, both terrestrial and satellite, to be used by the next generation television programs and telecommunications networks and services providers.

Within this dynamic and constantly changing environment, the Information and Communication Technologies sector is the most important strategic partner of the government in order to achieve all these ambitious objectives. We have faith on the Greek business community and we are looking forward to its creative contribution in order to overcome all the difficulties that will be encountered during the projects design, assignment and implementation procedure. We intend to exploit all the modern models to create reliable, viable, flexible and interoperable applications, which will require the minimum development and operation cost, which, even though centrally built, will be regionally used through the Internet by geographically distributed users throughout the entire territory.

KOSTAS KARAMANLIS

The development vision for Greece in tomorrow's world



I also consider it important to reaffirm the strong interest and the actions undertaken by the State for the rapid creation of the necessary infrastructures, which will soon bring Greece on the head of the countries with modern digital infrastructure. As we have repeatedly stated, we are working systematically for the implementation of the Fiber-to-the-Home (FTTH) network, with the aim to cover 2 million households and businesses in the entire country within the next 7 years. The Ministry of Transport and Communications has already prepared the legislative framework for this important project, which is equivalent to the electrification of the country during the 1950s.

As it was announced, this project of public benefit will be financed

> The implementation of the Fiber-to-the-Home project is equivalent to the electrification of the country during the 1950s. It may attract substantial investments and create thousands of new highly specialized jobs for the young people of our country

The Information and Communication Technologies sector is the most important strategic partner of the government in order to achieve the ambitious objectives

through the model of Public-Private Partnerships (PPP).

It is a main objective of our policy to supply Greece with a passive access infrastructure, which will be open to all network and services providers and will cover the needs of citizens and businesses for the next decades. The optic fiber networks may attract substantial investments and create thousands of new highly specialized jobs for the young people of our country. It may become the catalyst for the creation of numerous new export-oriented businesses and make critical electronic government and telemedicine services affordable for more Greek households. Finally, it may transform our country into a main regional telecommunications node, as it is the case in the energy sector, with the natural gas pipelines to Western Europe.

Another important intervention that we are about to complete in the near future concerns the bridging of the domestic digital gap, the inequality in the Greek rural areas as to high speed Internet access. We are examining actions for the promotion of subsidized wireless broadband connections for those living in the rural areas, with comparable characteristics and prices to ADSL connections.

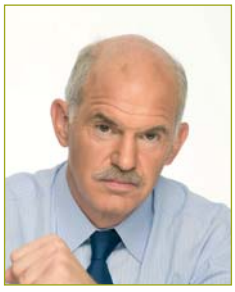
Ensuring fair competition among the businesses of the sector is a cornerstone for securing maximum transparency and safeguarding the objectives of our country's technological modernization. To this end, we have already simplified many of the conventional procedures followed during submission of tender, thereby decreasing the cost for the relative procedures. Moreover, we are planning the comprehensive application of electronic tenders for as many public procurements as possible, in order to eliminate all the areas of possible lack of transparency.

It is clear that the government considers extremely important the existence of competitive business schemes with domestic added value for the promotion and absorption of both the public actions for "Digital Convergence" and the digital economy in general

It is clear that the government considers extremely important the existence of competitive business schemes with domestic added value for the promotion and absorption of both the public actions for "Digital Convergence" and the digital economy in general. Encouraging new scientists and engineers to seek an outlet in new technologies companies or to setup new business units is a prerequisite for the survival of our society. In this context, we are planning new actions to enhance youth entrepreneurship and to simplify the procedures for setting up new companies.

After the end of the global financial crisis, we are looking forward to a modern and new generation of Greek businesses with high know-how and competitiveness, able to face the challenges of the most advanced new information technology applications and to lead the national effort to bring Greece in the cycle of the most advanced EU member states. The coming world belongs to those with a vision and a strategy, to those who know how to be prepared to face successfully the challenges of the new digital era.

Mr. Kostas Karamanlis is the Prime Minister of Greece.



GEORGE A. PAPANDREOU

Electronic government for

Five years ago, again in an article for SEPEnews Magazine, I referred to an Information Society where services and technologies would be accessible to all citizens equally. At the time I stressed, inter alia, the need for public administration to focus on the promotion of accountability and transparency. A modern public administration which must constantly improve services for citizens and enterprises.

Since that time, I have been stressing the need for a leap in quality in the relation between the citizen and the state. In order to face the risks inherent in the lack of trust in the institutions. We envisaged the constant active participation of citizens in the procedures and decisions that concern them. We emphasized the need to create infrastructures which would accelerate and simplify public functions, while favoring innovation in both the private and the public sector.

Today, Greece is at the crossroads of a multifaceted crisis. It is a crisis which affects the economy, politics, institutions and values. Its consequences are experienced by all Greek people, practically in any part of their everyday life. Every citizen feels profoundly the corruption, the lack of transparency, the bureaucracy, the impediments, the waste and the exclusion. In sharp contrast to a government unable or unwilling to face these phenomena, we submit specific proposals which guarantee transparency, accountability and the open participation of all citizens in the democratic process through public consultation procedures.

Citizens need simple and friendly services in sectors which directly affect their everyday lives, such as insurance, taxation, as well as their general contact with public administration. Services recorded in an electronic transactions "booklet", so that every citizen may have absolute control over the services provided by the public sector. Electronic government means transparency, simplification for the citizen, speed where today there is delay. It means opportunities for electronic consultation, quality telecommuting for young people, the elder, the disabled, for isolated areas of our country.

Citizens need simple and friendly services in sectors which directly affect their everyday lives, such as insurance, taxation, as well as their general contact with public administration

We propose that electronic government is developed as a plan which will be implemented gradually, but quickly and efficiently and with immediate effects. A plan based on the principle that all public administration procedures are open by default. Procurements, registers, legislative proposals are analyzed, simplified and reorganized so that they become more and more "automatically transparent". In other words, it should be possible to monitor their progress easily, automatically and to be able to reuse all information.

The major issue concerning public administration is that gradually, almost without noticing, it becomes obsolete and outdated by the lightning speed by which the Internet changes the citizens' expectations. To avoid this outcome, the following proposals will start being implemented right after the next national elections, with a binding schedule.

A single and decentralized internet platform, for the digital organization and free disposal of all public data, where all public authorities providing services to the citizens will be integrated.

Publication of all state expenses on the internet, describing the scope, the contract, as well as the total price, the amount, the date and the Tax Identification Number of the beneficiary and the contracting authority.

Transparent property declaration, with a new system for electronic entry and publication of property declarations and cross-checking of all the information submitted by the officials participating in the decision making process for the appropriation of public resources and public funds.

An electronic procurement, allowing automated, transparent, effective

the citizen

We propose that electronic government is developed as a plan which will be gradually implemented, but quickly and efficiently. A plan based on the principle that all public administration procedures are open by definition. In other words, it should be possible to monitor their progress easily, automatically and to be able to reuse all information

public and resource saving procurement processes, by exploiting the available market solutions to overcome time-consuming procedures.

Transparency in recruitment. By abolishing immediately the interview before the Civil Service Staffing Council (ASEP) and planning a comprehensive recruitment plan for the public sector exclusively through the ASEP. By expanding the recruitment information system whereby all project and employment contracts concluded by the public authorities in general, either through the ASEP or not, will be announced.

A national Observatory of Prices with online information on prices for all kinds of products in each area. The citizens

GEORGE A. PAPANDREOU

Electronic government for the citizen

The shift and the application of electronic government will be supervised by the prime minister's office and by a commissioned minister who will coordinate the organic connection of all policy areas, all Ministries, with the aim to implement the best electronic government practices in a binding schedule

should have the possibility to participate and intervene to comment and update the information, while the competent authorities will answer all questions within five days.

To support the above-mentioned policies through electronic government applications horizontal interventions are required. We cite four main interventions which concern all the basic sectors of government policy.

First, new infrastructures for quality education, green development and more efficient administration. Our country today needs a large development project for an electronic communications infrastructure which will provide optic fiber connections to households, businesses and all the buildings housing public authorities in all the cities of the country. A project for the development of a new generation network which will be open to all telematics services providers. These infrastructures are a crucial parameter for the development of an open school, electronic libraries and electronic books, energy saving and the development of new electronic services. This intervention will help the country to steer a new development course through the creative use of new telecommunications infrastructures by the private and public sector.

Second, the public content should be returned to society. The public content consists of the information, the data, the administrative deeds and the ministerial decisions, as well as all the studies, research and the cultural content financed through national resources. Gradually, all of these resources will be

The challenge is big and therefore our proposals are radical. At the same time, they are an appeal to the private sector of the Greek market of the Information and Communications Technologies to become more active so as to exploit productively the large projects in favor of the citizens and the Greek economy

available free of charge on a decentralized online platform for digital organization and data provision to citizens and will cover all public sector activities. At the same time, as a second intervention we propose an executive agreement with publishers, producers and authors for the free disposal of publicly financed cultural content. Through organizations such as the Hellenic Broadcasting Corporation (ERT), the Cadastral, research and education bodies, bodies of the Ministry of Culture and libraries, our aim is to ensure immediately the free online disposal of all public content.

Third, electronic services based on open standards and open software are the main pillars for change in education and public administration. Our objective here is twofold: on the one hand, to use open software products in education and on the other hand to adopt an open software design and production at all education levels. The preferable use of open software in Public Administration will contribute to the reduction of operating cost, the independence from proprietary solutions, security improvement and more employment opportunities.

Fourth, the shift from hardware and software procurement to services based solutions. It is an intervention which will contribute to the development of the services sector and will lead to the transfer of funds from the hardware and software acquisition expenses to the domestic services market, contributing also to an improvement in the trade balance. It will contribute to the productive exploitation of large and critical information and communications projects undertaken by the state but so far not offering any benefits to the public administration and to citizens. At the same time, it is a green policy, because it contributes to the decrease of the required hardware, as well as the daily energy consumption.

The shift and the application of electronic government will be supervised by the prime minister's office and by a commissioned minister who will coordinate the interconnection of all policy areas, all Ministries, with the aim to implement the best electronic government practices in a binding schedule.

Our successful recovery from the current major economic crisis will depend not only on the interventions to several sectors, but also on our ability to adopt and integrate to Greek people's everyday lives the appropriate technologies in the most efficient and socially fair way.

This is a big challenge and therefore our proposals are radical. At the same time, they are an appeal to the Information and Communication Technologies sector of the Greek market to actively participate in large ICT projects in favor of the citizens and the Greek economy. The efficient contribution of all the information technology companies and the employees of the sector are crucial in order for our interventions to be successful.

In conclusion, the implementation of our proposals has only one objective: to make the lives of the citizens more humane by providing them with new opportunities, possibilities, forces, as well as by setting them free of bureaucracy, clientele list politics and everyday corruption. It will be a contribution to the quality of our democracy, the dynamism of our economy, the creativity of our civilization, the simplicity of our everyday life.

Mr. George A. Papandreou is the Leader of the Opposition and President of PASOK.

VIVIANE REDING

The future Internet must be

It is now well recognized that the Internet as we know it today defies traditional regulatory theories and governance practices. The main reasons are linked to the blurring of the concepts of national territory and sectors. But as we consider the future of the Internet, we see even greater challenges ahead, with many questions related to privacy, security and governance. Now is the moment to initiate a global reflection on achieving an improved, more effective and inclusive Internet.

All these dimensions of the future of the Internet are of crucial interest for Europe - and I believe for the rest of the world. For this reason, the European Commission will step up, from 2009, its efforts and its involvement in all these dimensions. We will increase research and development; actively participate in discussions on the regulatory approach to applications and services; make proposals on governance issues, and actively promote IPv6 roll-out. With more than 3 million ".eu" domain names registered to date, the European Union has an even stronger legitimacy to be a key player in the future of the Internet.

The Internet economy is changing

The Internet underpins the entire economy in an increasing part of the world. Information and communication technologies (ICT) contributed 40 per cent of overall productivity growth in the economy for the ten years up to 2004. The networking effect has made possible an accelerated and global diffusion of innovation. The ensuing changes to our economy, as well as to the lives of our citizens, have been remarkable. The diversity and sheer number of applications and business models supported by the Internet have also greatly affected its nature and structure - Internet traffic increases by 60 per cent every year!

Could one say that the Internet has become mature infrastructure which has exhausted its innovation and growth potential? I am deeply convinced that this is not the case. Let me share with you not only why I believe that we are at the

start of a new phase of Internet-driven innovation and growth, but also what we have to do to unleash this potential, which is even more necessary in times of economic trouble. Indeed, to get out of the economic downturn we need to stimulate solid and sustainable business growth in high-value goods and services that respond to real market needs. For example, we in Europe need to make full use of the economic potential of the single market that is still locked up in our fragmented national markets. This should apply primarily to services based on the Internet, which has, by its nature, a cross-border dimension.

Internet drivers

What are the current drivers and future perspectives of the Internet? I see at least three main drivers: social networks, the Internet of things and the mobile Internet.

Social networks

A first driver clearly emerging is a shift from "Web 2.0 for fun" to Web 2.0 for productivity and services. "Web 2.0 for fun", is all about social networking. It is today one of the fastest developments of the Internet and also has the potential to connect minds and creativity for business on a scale never before attained or even imagined. The sheer power of networking that the Internet offers makes it possible to reach unprecedented levels of information regarding the collective behaviour and needs of entire populations.

Web 2.0 networking in the business world holds the prospect of interoperability across different business segments. This is an important opportunity, especially for small-and medium-sized enterprises, because more and more sophisticated and high-added-value products and services will be delivered through opportune collaboration of a multiplicity of business actors.

The Internet of things

A second important driver of the Internet of the future is the emergence of an "Internet of things". Soon the Internet, which today connects computers, servers and web pages, will start connecting myriads of objects and devices of all kinds.

What will be the implications of such an extended nervous system? Surely, new classes of application will come to life, combining information from the virtual world with perception of the physical world. The economic prospects are very significant, with an estimated global market of €30 billion by 2016 just for the segment of applications enabled by radio-frequency identification (RFID). The increased intelligence and connectivity of objects and devices will be of prime relevance to our citizens, as it opens up new prospects for greater accessibility and gives them more control over their lives. Tremendous pay-offs can also be realized in terms of better energy distribution and consumption, environmental controls, urban transport, health and care services, and so on.

But to achieve the promise of the Internet of things, both policy-makers and industry need to work intensively, be it in terms of architecture, of standards, of security or of governance. We cannot just ignore the privacy and governance issues related to the Internet of things. So, my intention for 2009 is to set certain principles for the European Union in order to give legal certainty to the industry, and to have a sound dialogue with our main trading partners on the public interest issues at stake.

> Information and communication technologies contributed 40 per cent of overall productivity growth in the economy for the ten years up to 2004

Open service infrastructure

Reaping the benefits of these promising applications will not be possible without a powerful open service infrastructure. The trend towards deployment of server farms with distributed "cloud" computing capability is leading in that direction. An interesting characteristic of "cloud" infrastructure is that it lowers the barriers to market entry and enables small companies - even micro ones - to develop their own online commercial offers with zero infrastructure investment.

A second aspect regarding these "cloud" services, which needs careful consideration, is associated with

VIVIANE REDING

The future Internet must be truly global

Today, the volume of data traffic in high-speed mobile networks is, on average, three to four times larger than that of voice traffic

operational business risks as well as the potential for serious data storage risks. To what extent will businesses accept moving truly mission-critical applications outside their firewalls? How should the governance of data migration be handled? Again, these are questions about which industry and public authorities need to speak to each other.

Mobile Internet

A third key trend is the Internet going mobile. The emergence of a wireless web is becoming a reality, under the combined influence of two factors. The availability of smartphones, whose penetration is increasing very fast, is boosting the mobile Internet, with usage more than ten times higher than that through less sophisticated terminals. This is enabled by the advent of true broadband mobile networks. Operators that have implemented third-generation (3G) mobile high-speed options - and there are more than 220 such networks in 100 countries - have seen their data traffic skyrocket in no time. And you can imagine how it would be with more affordable prices, notably for roaming across borders.

Today, the volume of data traffic in high-speed mobile networks is, on average, three to four times larger than that of voice traffic. It will therefore be crucial to release the necessary radio-frequency spectrum for high-speed wireless Internet access, to ensure an adequate level of competition and to foster coordinated allocation to generate economies of scale. To make the mobile Internet become an economic reality for Europeans, for example, we must also devote great attention to ensuring that the "roaming borders" that still exist in Europe are progressively brought down.

Other key issues at stake
Openness of the Internet

We will only be able to reap the full social and economic benefits of a fast-changing technological landscape if we manage to safeguard the openness of the Internet. Openness is one of the key ingredients that has made the Internet so successful as a place of innovation, and we have to make sure that it is not compromised. In its Communication on future networks and the Internet, adopted at the end of 2008, the European Commission outlined three key areas where we have to ensure that openness remains preserved.

Net neutrality

In the first place, "Net neutrality" has to be guaranteed. New network management techniques allow traffic prioritization. These tools may be used to guarantee good quality of service, but could also be used for anti-competitive practices. The Commission has taken additional steps, through measures proposed to reform the EU's telecommunication package, to better prevent such unfair abuse to the detriment of consumers.

Open standards

Another important issue relates to open standards. We need to take advantage of the win-win scenario of open interfaces and standards so that the market can grow for all. Dominant players may try to use proprietary standards to lock consumers into their products or to extract very high royalties, ultimately stifling innovation and forestalling market entry by new players. The European Commission's competition rules have an important role to play in tackling such practices.

Openness is also key for the Internet of things. If no coordinated action is taken, we can expect multiple architectures, standards, and intellectual property models to proliferate. The RFID domain already gives us an example where, due to a lack of openness, standards are being produced with significant intellectual property access costs. And if we want these systems to be integrated with all sorts of business or entertainment processes, market entry barriers need to be lowered in such a way that small and medium-sized enterprises can play their role as economy boosters.

But a lot remains to be done before these platforms can be integrated into complete enterprise systems, because use of proprietary solutions hampers interoperability. In this field, governments have a key role to play as "interoperability

The Commission proposed a "Recovery Package" in November 2008. Infrastructure investment is clearly identified as a priority and the sum of €1 billion has been earmarked to support high-speed broadband deployment

and openness pathfinders". This is what we are doing in the Commission under our IDABC (Interoperable Delivery of European eGovernment Services to public Administrations, Businesses and Citizens) initiative. This proposes an interoperability and openness framework for pan-European governmental services.

Globalization

There is no doubt that the future Internet will be truly global, and reach populations that have so far not been connected. China is already the largest country in terms of Internet users. This trend can only accelerate, with a clear consequence: the demand for a certain shift of Internet "power" from the developed regions to the developing ones.

This has far-reaching consequences and it is not certain that we can understand them all today. Multilingualism is one of them. Seventy per cent of Internet users do not have English as their native language. We need to prepare for a future Internet that takes languages and local cultures into account in a much better way. This is another form of openness, and a crucial one in my view.
Globalization may bring about a "Balkanization" of the Internet, for such reasons as attempts to preserve national security, cultures, or economic systems. Again, this possibility must reinforce our commitment to work in global partnerships to defend the open model that we want.

Economic recovery

In these times of economic trouble, we must continue investing in areas that are essential for our short- to medium-term recovery and our long-term future.

Let's look at the longer term first. The current debate is about how the Internet will evolve to support an ever-larger number of applications, business models, users and environments. There is, however, no guarantee that today's Internet architecture, which was designed more than thirty years ago, is going to support these changes. In Europe, we are moving forward with the 7th Framework Programme and our ICT research initiative. Under this umbrella, European industrialists and academic researchers have together launched a large-scale coordinated effort, worth some €400 million, addressing the future of the Internet. At its meeting in November 2008, the European Council welcomed the Commission's intention to move towards an industry-driven public-private partnership in this domain.

High-speed fixed and mobile broadband networks are the arteries of the emerging economy. But they require huge investments, which need to be optimized to maximize returns. In these times of economic downturn, we must invest in promising technologies that provide the competitive edge that will accelerate the economic recovery. The Commission proposed a "Recovery Package" in November 2008. Infrastructure investment is clearly identified as a priority and the sum of €1 billion has been earmarked to support high-speed broadband deployment. In order to maximize the reach of the Internet in Europe, we have proposed that this money should be used to support high-speed broadband in rural and remote areas that tend to be ignored in commercial deployment plans.

Mrs. Viviane Reding is Member of the European Commission responsible for Information Society and Media.

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EUROPEAN INFORMATION TECHNOLOGY OBSERVATORY

2010 will be a challenge for the

The value of the Greek Information and Communication Technologies (ICT) market for 2009 is estimated at €10.9 billion compared to €10,6 billion in 2008, according to the European Information Technology Observatory (EITO), Figure 1. €2.4 billion of these correspond to the value of the Greek IT market and €8.5 billion to the value of the Communications market. The market growth rate during 2008 - 2009 is estimated to rise up to 2.9% versus 3.5% during the period 2007 - 2008. For 2010, EITO forecasts that the Greek ICT market value will reach €11.2 billion and the growth rate for the

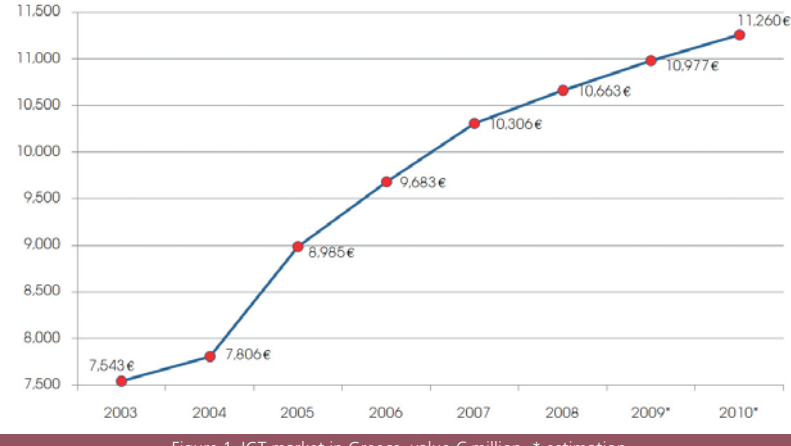

Figure 1. ICT market in Greece, value € million, * estimation,
Source: EITO in collaboration with PAC, Idate and GfK, analysis by SEPE, 2009

Greek ICT market

	2006	2007	2008	2009	2010	2006 -2007	2007 -2008	2008 -2009	2009 -2010
IT Equipment	793	827	896	951	967	4.3%	8.3%	6.1%	1.7%
Software	515	543	566	578	583	5.4%	4.2%	2.1%	0.9%
IT Services	872	910	942	963	975	4.4%	3.5%	2.2%	1.2%
Total IT	**2,179**	**2,281**	**2,404**	**2,492**	**2,522**	**4.7%**	**5.4%**	**3.7%**	**1.2%**
Telecom end-user equipment	581	587	580	548	557	1.0%	-1.2%	-5.5%	1.6%
Network Equipment	845	886	844	946	1,027	4.9%	-4.7%	12.1%	8.6%
Carrier Services	6,078	6,552	6,834	6,992	7,155	7.8%	4.3%	2.3%	2.3%
Total telecommunications	**7,504**	**8,025**	**8,258**	**8,485**	**8,738**	**6.9%**	**2.9%**	**2.7%**	**3.0%**
Total ICT	**9,683**	**10,306**	**10,663**	**10,977**	**11,260**	**6.4%**	**3.5%**	**2.9%**	**2.6%**

Table 1. ICT market in Greece, value € million, * estimation,
Source: EITO in collaboration with PAC, Idate and GfK, analysis by SEPE, 2009

The Greek ICT market value will reach €11.2 billion and the growth rate for the period 2009 - 2010 is estimated to reach 2.6%

period 2009 - 2010 is estimated to reach 2.6%, Table 1. According to EITO, the big challenge for the Greek ICT market is achieving to follow without delay the path of recovery, which the other European countries is estimated to join from 2010 and not suffer tardily from the consequences of the economic crisis.

In details, regarding the IT segment, the Greek IT Equipment segment, in 2008 - 2009, is estimated to have a 6.1% growth rate and this market's value in 2009 is estimated at €951 million. The fact that the PC users average in our country is less than the corresponding European average, creates hope for the development of this specific market that has entered a recession, leaving behind the excellent performance of the period 2007 - 2008. According to EITO, the demand for notebooks and cheaper desktops along with the Government's initiatives for strengthening the penetration of computers in the new generation improves the situation. Especially for the category of Notebooks, which dominates at the time both the wholesale and the retail of the IT businesses, during the period 2008 - 2009 the growth rate is estimated at 15.3% and for 2009 - 2010 is expected at around 2.9%. In regards to items' sales, it is noted that in 2009, 333,685 Desktop PCs and 701,256 Notebooks will be sold in Greece. The value of these items is estimated at €126 million and €384 million respectively.

EITO is projecting a 2.1% growth rate for the Greek Software market during 2008 - 2009, reaching a volume of €578 million. For the period 2009 - 2010 the market is estimated to move per 0.9 % and its value to reach up to €583 million. The local public sector with its tendency to drive technologies and innovation continues to demand IT applications, being the top IT spender. The demand for IT Applications, even in areas affected by the crisis, such as tourism and industry, is one of the reasons for maintaining the positive growth rate in the sector, as EITO's analysts point out. System Infrastructure Software and Business Intelligence Solutions also maintain a positive growth rate. The IT Services Greek Market recorded an annual growth of 3.5% in 2008. For the period 2008 - 2009 this market is estimated to have a growth rate of around 2.2% and its value will reach the amount of €963 million in 2009. In 2010 the market's value is estimated at €975 million and its growth rate at 1.2%. The Project Services remain the major pillar of the IT services market versus the Maintenance market. The contribution of Outsourcing Services is also significant in this market's course. Further, the Maintenance segment value in 2009 is projected to reach €195 million; the Project Services to reach €529 million and the Outsourcing Services market is estimated to reach €239 million. In 2010 the amounts will be established as follows: €196 million for the Maintenance Service Systems market, €523 million for the Project Services and €256 million for the Outsourcing Services.

In the Telecommunications segment, the investments in IPTV solutions will continue both in 2009 and 2010. The increased demand for broadband

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2010 will be a challenge for the Greek ICT market

services drives the market, despite the fact that the growth of revenue by these services is being restrained due to the competition in the industry. As the Greek mobile market has reached a saturation point, the mobile handset market growth has been on a slowdown since a couple of years. However the development of 3G services throughout the country is a positive sign for a brighter perspective on high-end model sales next year. The satellite platform was the only pay-TV operator in Greece before the launch of IPTV services - limited to some parts of the country. According to EITO, the Greek telecommunications market value in 2009 will amount to €8.4 billion and the growth rate in the period 2008 - 2009 is estimated at 2.7%. In 2010 this market value is projected at €8.7 billion and the growth rate for 2009 - 2010 is estimated at 3%.

European ICT Market

The messages from EITO's analysts regarding the course of the European ICT market are optimistic. According to forecasts, the drop of 2009 will soon recover. In the IT segment the conditions are more difficult, as the current economic crisis has made the businesses reluctant for investments on IT. On the contrary, a rapid growth is foreseen for Carrier Services in the Telecommunications sector.

The European high technology market is ready to rebound. In 2009, it is projected to close with a decrease of 1.7% in ICT products sales, reaching the amount of €716.6 million. In 2010 the market is projected to rise by 0.3%, reaching €718.6 million.

According to EITO, the EU Telecommunications market in 2010 will amount to €365.7 billion, increased per 1% in comparison with 2009. In the Telecommunications sector rapid changes and shake-ups are foreseen. Across Europe, the fixed voice phone services will be reduced by 6.8%. The sales for Internet access will also move upwards, while the mobile phone market is projected to be forces by the strong corporate competition and the pressure of the European Commission for cheaper pricing.

In regards to the IT market, EITO foresees to decrease by 2.2% in 2009, reaching €296 billion. In 2010 the total IT market is projected to show an increase of 0.6%, reaching €297.9 million. Especially for the Equipment sales a fall by 6.6% is projected and the market value to reach the amount of €85.7 billion. This market is affected by the price competition and the businesses' reluctance to invest. The provision for a 5% increase in Services sales in Europe is included in this framework.

Smart network design uses energy efficient base stations

When the impact of telecommunications on climate change and the overall green agenda is mentioned it is usually in the context of cutting down on unnecessary business travel or improving the efficiency of freight transport and other logistics. Certainly, the savings are compelling – the carbon foot-print of a one-hour mobile phone call can be thousands of times smaller than the environmental load of the travel required for a face-to-face meeting. Getting the maximum number of containers onto a ship before it departs can depend on marshalling truck movements by mobile phone.

But there is also an environmental impact of running telecommunications systems – they make up about 0.5% of global CO_2 emissions, for example. Although relatively small compared with the output from some other industries, operators are becoming much more aware of their responsibility, especially given the huge growth potential of networks in developing countries. Further, improving energy efficiency makes compelling business sense – there are also substantial savings to be made in operational and capital expenditure.

Playing a full part in driving sustainable business and benefiting from lower costs requires the right equipment and tools for deploying energy efficient networks. Using renewable energy to power base stations in remote regions is of course an important way of making savings, but for the radio access side, and applicable in all regions, the foundation of energy efficiency is good network design, which minimises the number of base station sites and also uses the latest low energy technology. There are approaches that can be applied to both new and existing networks.

For a new radio access network there is an opportunity to plan for the minimum number of base stations while maintaining a high level of performance. Maximising both uplink and downlink RF performance is essential, as it increases the cell size and so requires fewer base stations, which is especially important for rural areas. To address this, Nokia Siemens Networks offers a Smart Radio concept that boosts both transmission and reception performance. Further, it is also possible to locate new sites in the best places, again reducing the number of stations.

Meanwhile for existing Nokia Siemens Networks WCDMA indoor base stations, significant energy savings can be made by setting a higher operating temperature and so reducing air conditioning, or changing to an outdoor site design. Air conditioning costs can also be cut by using fresh air cooling with fans, if the outside climate allows. Another primary method of saving energy is to use the base station's software functions to balance energy consumption with traffic flows. Stations can be set to save power during low usage times, such as at night, and by idling the downlink transmission when the remote side of the call is not talking. There are also other technical configuration options that can cut energy consumption such as dynamic power control, half-rate AMR and TRX prioritisation.

Business models show that savings can be significant for example for a typical Western European GSM network operator that decreases cooling at indoor sites and uses downlink transmission and night time saving features. One model shows a 50GW/h saving – about 30% of total energy consumption – translating into a cut of around €5 million in the electricity bill, and about 25,000 tons less CO_2. Still higher savings – more than double this – could be made if old base station hardware is replaced by the latest equipment, such as the Nokia Siemens Networks Flexi platform.

Other ways to increase efficiency include:

- Deploying feederless sites – the RF equipment is positioned close to the antenna in these sites, minimising cable loss and boosting power. Feederless sites can cut the number of stations by 25%.
- Using a lower frequency band (eg 900MHz instead of 2100MHz) – this increases the cell size, and the number of sites can be cut by 50-65%.
- Using four-way diversity instead of the typical two-way unit used in GSM/EDGE and WCDMA networks can also increase cell size, although there is a trade off in less OPEX and CAPEX savings as more equipment is required.

There are other options for reducing energy consumption applicable to both new and existing networks, but those above all greatly decrease the overall consumption of a new network.

Athanasios Exarchos
Country Director & Head of
Lead Customer Team Nokia Siemens Networks

There are other environmental by-products of telecoms networks that can be sensitive in some markets – for example littering problems caused by discarded prepaid cards in Africa, while landfill bans for outdated equipment is a big issue in Europe. But the longevity and efficiency of the latest network technology will go a long way to minimising the core issues of reducing CO_2 emissions and the number of base stations needed to maintain a high quality network.

The Global e-Sustainability Initiative (GeSI) is currently assessing the environmental impact of the information and communications technology (ICT) sector and the role it can play in 'catalysing transformation to a low-carbon economy'. Telecommunications operators will want to play their full part in the roadmap ahead, particularly in developing regions where the ICT growth rate is higher than that in more mature markets.

The role of telecommunications in driving a positive environmental impact has been recognised by Sohu.com, a leading online portal in China, which has selected Nokia Siemens Networks as one of the top five 'green enterprises' in the country.
For more information visit:
http://www.nokiasiemensnetworks.com/environment

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