EDUCATION AND LIFE LONG LEARNING ARGUMENT FOR THE DEVELOPMENT OF KNOWLEDGE BASED ECONOMY AND SOCIETY

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Abstract

The scientific paper work's idea is generated by the Lisbon Strategy objective „creation of more and better jobs in competitive domains". Only this way can be developed a new society, knowledge based, which is centered on the human capital and all the aspects related to human wellness, needs for education and life long learning etc.

The theme is important in the actual European and global context that emphasizes the progress based on the economic and social development, in fact, the main goal is reaching„ sustainable development". The existing relations between economy and society knowledge based is the result of the human development. In this context the human education have not to be seen as only the tool for the improvement of the economic competitivity, but as a chance for them to become better individuals. Knowledge based society is not referring limitative to the best prepared individuals in a specific society and high technologies used. The goal has to be the improvement of the professional preparation during the whole life, thorough investments in human capital and the increased access to the knowledge for the members of the society.

The paper work is the following of my anterior studies and is considered an actual subject matter for the entire scientific and economic society.

Keywords: *Education, Knowledge Society, Knowledge Economy, Lifelong Learning, Competitivity*

Introduction

The scientific paper work is emphasizing the Lisbon Strategy objectives on the one hand the goal to have in the future a competitive human capital and on the other hand the society and the economy have to be capable to create more and better jobs all over the EU space. The main contribution in accomplishing these goals is brought by life long learning, the new Lisbon concept of preparation during the entire life of the individual. Only this way can be developed a new society, knowledge based, which is centered on the human capital and all the aspects related to human wellness, needs for education and life long learning etc.

Very important in this context is the link between the sustainable development as a main objective of this century's humanity and the concept of human sustainable development which is centering the entire process on the human being and his evolution in the next years.

The paper work is presenting the main concepts „knowledge society and knowledge economy", concepts that are considered the basis for the society of the future. In the mean time is

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emphasized the role of the education primary to tertiary and life long learning, including a proposed model of the knowledge society development.

That's why this work is going to be concentrated on the European space and also the European Policy regarding education in the new knowledge society and their influence on the Lisbon strategy main objectives and the economic evolutions.

The paper work is considered an actual subject matter for the entire scientific and economic society.

Main Concepts

What is knowledge society?

Knowledge society is that phase in the capitalist society evolution which represents:
  basic resource;
- main source of power and wellness;
- main space for generating and existing of new jobs;
- the way of acting for the main social actors;
- the zone for social conflicts;
- the base for governmental and managerial innovative decisions;
- competition existence (knowledge means innovation);
- criteria for national wellness.

What is knowledge economy?

In order to delimitate the post-industrial knowledge society the scientists proposed a new sectorization for the economy: **first sector** - direct nature exploitation: agriculture, mining, forestry, fishing, hunting; **second sector – industry includes: subsector <<a>>** - new industry (electronics, computers, robots, IT); **subsector <<b>>** - traditional industry; third sector – economic services (transportation, commerce, warehousing etc.); fourth sector – social services (health, banking, insurance, tourism etc.); fifth sector – IT services (R-D, education, collecting and managing information, management etc.)

From the prospective of technologic and professional the post-industrial knowledge society is defined as the society in which the great majority of the work force is working in the IT services sector (fifth sector) and in a subsector of industry.
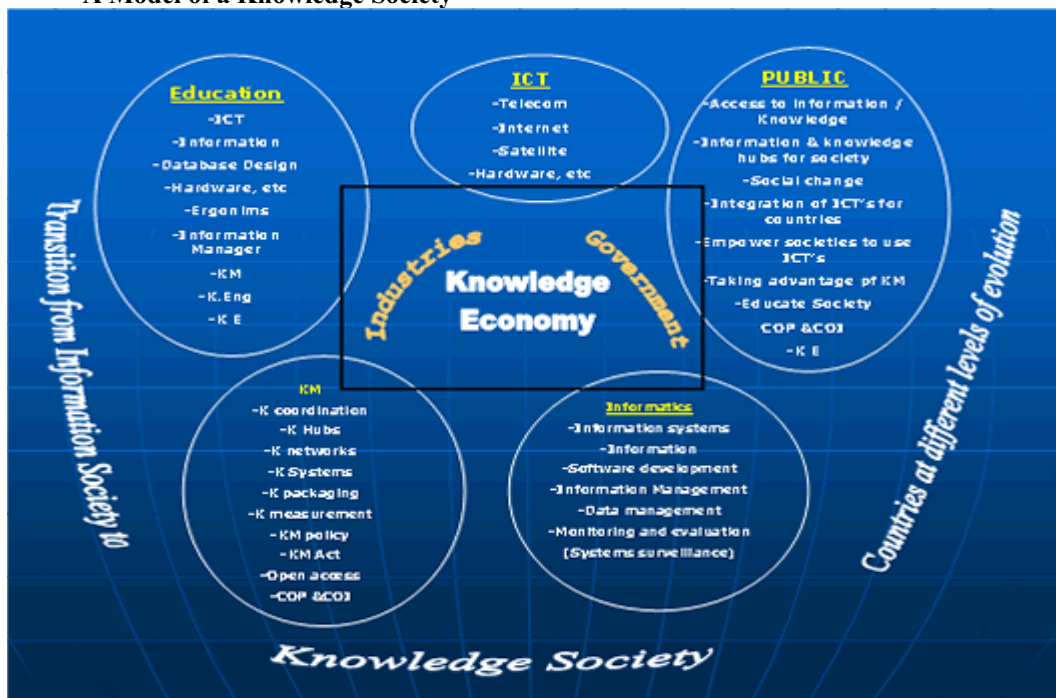
The **knowledge economy** is a term that refers either to an **economy of knowledge** focused on the production and management of knowledge, or a **knowledge-based economy**. In the second meaning, more frequently used, it refers to the use of knowledge to produce economic benefits. The phrase was popularized if not invented by Peter Drucker as the title of Chapter 12 in his book *The Age of Discontinuity*.

Various observers describe today's global economy as one in transition to a "knowledge economy", as an extension of "information society". The transition requires that the rules and practices that determined success in the industrial economy need rewriting in an interconnected, globalised economy where knowledge resources such as know-how, expertise, and intellectual property are more critical than other economic resources such as land, natural resources, or even manpower. According to analysts of the "knowledge economy", these rules need to be rewritten at
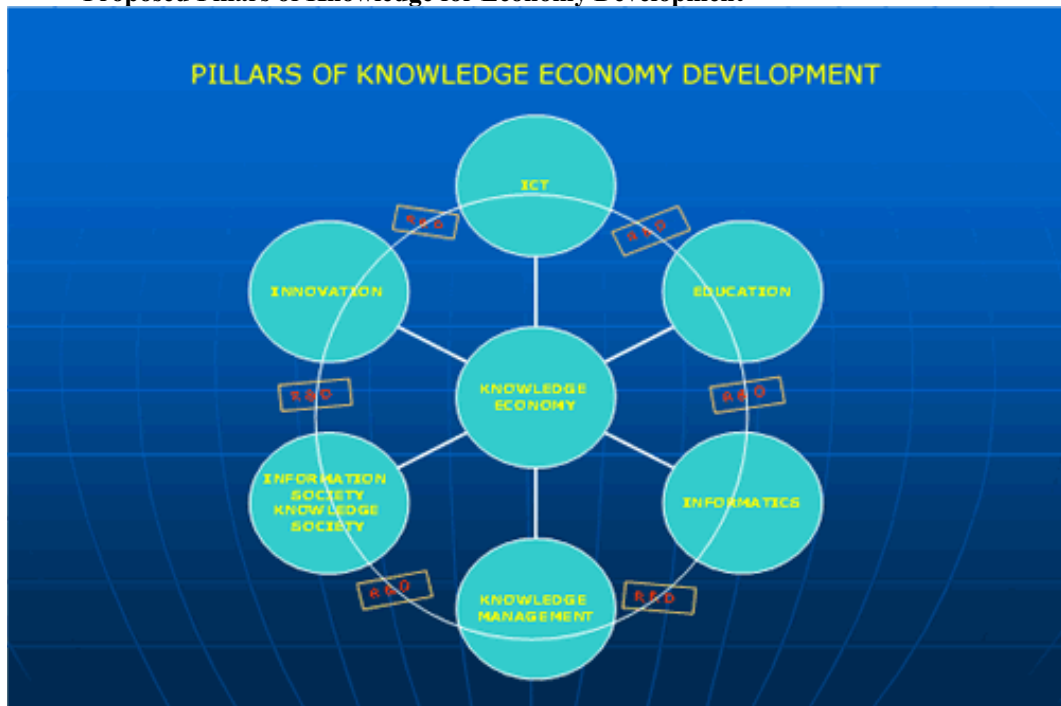
the levels of firms and industries in terms of knowledge management and at the level of public policy as knowledge policy or knowledge-related policy.

However, this concept has grown and expanded beyond the definition developed by Drucker. As depicted in the diagrams below the concept does not focus on IT developments or innovation only but a whole range of matters related to: *information, information flows , information management , knowledge, knowledge flows, knowledge production, knowledge management, knowledge flows, knowledge transfer, knowledge sharing, knowledge translation (innovation) access, knowledge institutions/ industries, knowledge services, knowledge trades , Research and Development, Education, knowledge supplies and demand and knowledge society.*
The interpretation will change depending on the area of focus and issues to be addressed. For any country to begin with matters of knowledge economy there is a need for conceptual operationalization for different sectors. A need for countrywide participation and involvement, massive creation of awareness of the concept and how it applies to different sectors and impact people at national and individual levels. An important point to make is that knowledge economy does not refer to science knowledge only but all forms of knowledge as long as such knowledge and or activities lead to economic growth and job creation.

A Model of a Knowledge Society

Proposed Pillars of Knowledge for Economy Development

This is the main reason for which the World Bank initiated a Program for assistance that helps different countries to accede to this society. In the mean time, Education for the Knowledge Economy refers to World Bank assistance aimed at helping developing countries equip themselves with the highly skilled and flexible human capital needed to compete effectively in today's dynamic global markets. Such assistance recognizes first and foremost that the ability to produce and use knowledge has become a major factor in development and is critical to a nation's comparative advantage. It also recognizes that surging demand for secondary education in many parts of the world creates an invaluable opportunity to develop a workforce that is well-trained and capable of generating knowledge-driven economic growth.

What is the World Bank doing to support work in this area?

World Bank assistance for EKE is aimed at helping countries adapt their entire education systems to the new challenges of the "learning" economy in two complementary ways:

***Formation of a strong human capital base*:** A framework for knowledge-driven growth requires education systems to impart higher-level skills to a rising share of the workforce, foster lifelong learning for citizens, and promote international accreditation of a country's educational institutions. Efforts along two dimensions are needed: to provide quality and relevant education to a larger share of each new generation of young people through expanded secondary and tertiary education; and to train and retrain the existing labor force to provide opportunities to those who were unable to complete secondary or enter tertiary education.

***Construction of an effective National Innovation System (NIS)* :** A national innovation system is a well-articulated network of firms, research centers, universities, and think tanks that

work together to take advantage of the growing stock of global knowledge, assimilate and adapt it to local needs, and create new technology. Tertiary education systems figure prominently in NIS, serving not only as the backbone for high-level skills but also as the main locus of basic and applied research.

EKE encompasses a wide range of efforts, comprising:
- Secondary education to lay the foundation of a healthy, skilled, and agile labor force
- Tertiary education to create the intellectual capacity to produce and utilize knowledge
- Lifelong learning to promote learning throughout the life cycle and help countries adapt to changing market demands
- Science, technology, and innovation capacity to continually assess, adapt, and apply new technologies
- Information and communications technology (ICT) to multiply access to learning opportunities for those who need them most (such as out-of-school youth and children with disabilities) and to improve the quality of teaching and learning outcomes
- Cross-cutting efforts to rethink the role of the state away from sole provider to enabler and quality assurer, identifying options for sustainable financing, strengthening labor market linkages, and addressing the political economy of reforms

Education in knowledge society context

The revitalized Lisbon Strategy underlines the crucial role of education and training to Europe's future prosperity and social cohesion.

Beyond their broad mission to serve society as a whole, education and training systems are of particular importance in helping to deliver sustainable growth and creating more and better jobs. Over recent years, Member States have made significant progress in working together under the Education and Training 2010 work programme – the education and training component of the Lisbon strategy for jobs and growth – to modernize Europe's education and training systems to meet the demands of the knowledge-based economy and society.

Information and communication technologies have the potential to significantly advance our progress towards the Lisbon objectives. New open and flexible forms of ICT-supported learning (eLearning) are increasingly being used for the re-skilling of workers, and are opening the way to new forms of education and training for the knowledge society. Consequently, ICT is a cross-cutting theme in the new Lifelong Learning programme for the period 2007-2013, which aims to promote greater mobility and stronger links among education and training institutions.

The Commission's 2010 initiative, a European Information Society for Growth and Employment, takes on board this revised policy agenda. It highlights the opportunities and challenges of eLearning, its key role in creating knowledge and new innovative learning content and services, and the role of lifelong learning together with innovation and research in the triangle of knowledge.

It also emphasizes the growing need for digital literacy as an essential competence in the knowledge society and skills for the workplace.

Education is a primary concern in all European countries. It assumes particular importance in the context of the Lisbon strategy to boost EU growth: in the emerging knowledge-based economy success – both for individuals and for Europe as a whole depends crucially on realizing human potential. Making this happen requires a fundamental transformation of education and training throughout Europe. This process of change is being carried out in each country according

to national contexts and traditions and is being driven forward by co-operation between Member States at European level.

Although Member States invest significantly in education, we still have some way to go to ensure that opportunities are open to all. Almost 16% of young people in the EU still leave school early, often without any qualifications, and nearly 20% of 15 year-olds continue to have serious difficulty with reading literacy. Only about 77% of 18-24 year-olds complete upper secondary education – still far below the EU's target of 85% – and only 10% of adults aged 25-64 take part in life long learning.

Moreover, there is little evidence of an increase in employers' investment in continuing training.

The role of traditional educational institutions – schools, colleges and universities – in educating younger generations has never been more important than it is today.

To succeed in tomorrow's knowledge based economy and society, we have to equip young people with the knowledge and skills necessary to cope with continuous change in their private and professional lives. They need not only the technical skills necessary to engage with the new technologies – so-called 'digital literacy' – but also the <<softer>> skills such as creativity, problem-solving and team work.

Approaches to training are changing too. As the world of work becomes ever more complex and portfolio careers become the norm, barriers between work and learning are disappearing. Employees are moving in and out of work and between working tasks in a world where skills, disciplines and jobs mutate rapidly. Organizations require a flexible workforce with broad competencies and increasingly individuals are taking responsibility for their own professional development as part of their life long learning.

Hence, learning today is no longer confined to educational institutions, companies or training centers. New technologies and tools offer learners greater flexibility, easier access to information and the opportunity to match learning to their specific needs, circumstances and learning profile. The home is increasingly important as a learning environment.

The boundaries of learning are changing all the time. Technological developments, such as the internet, mobile communications and virtual environments, create possibilities to support learning in new ways. In addition, our definitions of learning are changing, as we gain new insights into how people learn and what they need to learn to adapt to changing economic and social conditions.

Challenges for Education and Training in EU

To ensure their contribution to the Lisbon strategy, in 2001 Ministers of Education adopted a report on the future objectives of education and training systems in the EU, agreeing for the first time on shared objectives to be achieved by 2010. This resulted in a 10-year work programme, Education and Training 2010, approved by the European Council.

These agreements constitute the EU strategic framework of co-operation in the fields of education and training, and are implemented through the open method of coordination.

Member States have agreed on three major goals to be achieved by 2010 for the benefit of citizens and the EU as a whole:

- to improve the quality and effectiveness of EU education and training systems;
- to ensure that they are accessible to all; and
- to open up European education and training to the wider world.

Actions to achieve these goals are based around specific objectives covering the various types and levels of education and training (formal, non-formal and informal) and aimed at making

a reality of lifelong learning. Systems have to improve on all fronts: teacher training; basic skills; integration of ICT's; efficiency of investments; language learning; lifelong guidance; flexibility of the systems to make learning accessible to all; mobility; citizenship education, etc.

In order to avoid having the next generation facing social exclusion, each EU member state have to speed up the education reforms and achieve the Lisbon strategy main goals. These include the ability of the EU citizens to communicate in foreign languages, basic competences in mathematics, science and technology, digital competence, and interpersonal and intercultural skills.

The reality we face is that national reforms are moving forward but there is too little progress against those benchmarks related most closely to social inclusion. The pace of reforms should be accelerated in order to ensure a more effective contribution to the Lisbon strategy and the strengthening of the European social model.

Education and Training 2010 integrates all actions in the fields of education and training at European level, including vocational education and training (the "Copenhagen process"). As well, the Bologna process, initiated in 1999 is crucial in the development of the European Higher Education area. Both contribute essentially to the achievement of the Lisbon objectives and are therefore closely linked to the Education and Training 2010 work programme.

Education and Training Policy

The crucial role of information and communication technologies (ICT) in building Europe's social and human capital is reflected in the strong emphasis given to technology in educational action programmes.

The EU eLearning Programme supports actions that foster new approaches to education and training and the development of quality multimedia content and services. Various projects are actually ongoing, focusing on a series of priority areas chosen for their strategic relevance to the modernization of Europe's education and training systems. These include: promoting digital literacy; encouraging exchange and sharing schemes; strengthening networking between European schools; and sharing and dissemination of best practices.

The opportunities brought by ICT also feature prominently in the EU's policy on lifelong learning. In its Communication entitled, *Making a European Area of Life Long Learning a reality*, the Commission notes the need to develop education and training measures for lifelong learning across Europe. Member States should adapt their formal education and training systems to the demands of the modern environment, breaking down barriers between different forms of learning and giving all EU citizens the chance to develop ICT skills.

These concerns were reiterated in the latest policy review in 2005, which again underlined the key role of ICT in the future of Europe's education and training systems. The new 2010 initiative, a European Information Society for Growth and Employment, also recognizes the importance of learning and skills to Europe's digital economy. It will highlight the opportunities and challenges of eLearning, and its key role in creating knowledge, new innovative learning and content services.

It emphasizes the role of life long learning, together with innovation and research, in the triangle of knowledge, and underlines the growing needs for digital literacy as an essential competence in the workplace and in the knowledge society. Support for digital literacy and lifelong learning will be a key focus of a proposed European initiative for eInclusion, under 2010, which is planned for 2008.

The European eSkills Forum, a stakeholder group on ICT and e-business skills, has noted the crucial importance of e-skills for the future EU workforce and population and has invited the

EU to adopt a comprehensive strategy for improving ICT skills and training. These issues have been taken up by the ICT Task Force, an expert group set up under the 2010 strategy. Based on input from the eSkills Forum, the ICT Task Force and other stakeholders, the Commission is expected to issue an action plan on "eSkills for Competitiveness, Employability and Workforce Development" in early 2007. Building on the achievements of earlier education and training programmes such as Socrates, the Commission is launching a new Integrated Lifelong Learning programme for the period 2007-2013.

The programme covers four areas: schools (Comenius), higher education (Erasmus), vocational training (Leonardo), and adult education (Grundvig).These are complemented by four horizontal areas of activity: policy development, language learning, ICT and dissemination work.

This Communication intends to take the ICT-enabled learning agenda a step forward and to develop a coherent strategy framework for the best possible integration and exploitation of ICT for lifelong learning.

Where the Information Society meets Education
Information Society Main Activities

1. Research and Development

European research in this field was part of the Information Society Technologies (IST) programme, one of the thematic priorities in the Sixth Framework Programme (FP6) for Research and Technological Development. Research activities are managed by the **Learning and Cultural Heritage Unit** within DG Information Society and Media.

Technology-enhanced learning (TeLearn for short) research aims at improving our knowledge of how learning can be supported by information and communication technologies. The focus is on intelligent solutions tailored to individual learners, motivating and supporting people who learn on their own or collaboratively with others.

Research priorities are to:

• enhance our capacity to ***reflect the complexity of learning*** in complex and dynamic environments;

• reinforce learning as a ***social process*** through new collaborative models;

• ***customize learning to individual needs*** – at school, work, throughout life;

• ***build competence*** – by linking organisations' objectives and learning goals of individuals;

• support pedagogical approaches that ***offer new and traditional ways of learning***.

2. Other Activities

The **eTEN** Programme is concerned with the large-scale roll-out of public interest services, primarily in support of the 2010 initiative. In this context, eTEN projects address eLearning as a main action line. Activities support the efforts of the Member States to accelerate the adaptation of education and training systems for all in the EU and the development of virtual campuses.

The **eContent** *plus* Programme (2005-2008) supports the production, use and distribution of European digital content and promotes linguistic and cultural diversity on global networks. Improving the accessibility and usability of educational material is a key priority.

For the future, and with particular reference to the 2010 strategy, the main such instrument will be the **ICT Policy Support Programme**, which is part of the Competitiveness and Innovation Framework Programme (CIP). With a budget of €728 million, it will stimulate converging markets for electronic networks, media content and digital technologies, test new solutions to speed up the deployment of electronic services, and support modernisation of the European public sector.

Computer-enhanced tools and methods of education have the potential to raise the performance and extend the availability of Europe's educational systems.

Policy Context

Open and flexible forms of technology-enhanced learning contribute increasingly to the quality of education and training systems. ICT make teaching and training processes more tailored to the needs of the learner, help foster and support innovation in pedagogy, and make learning more engaging. They also support organizational transformation within education and training institutions, which will help to improve educational quality, and to extend access to learning beyond traditional educational settings.

Nevertheless, integrating ICT as a natural part of teaching and learning at all levels in educational and training systems remains a major challenge for Europe. The European Commission has been very active in supporting and complementing the efforts of EU Member States to modernise education and training systems. At practitioner level, current efforts in this direction focus on the eLearning Programme. This initiative has four components: to equip schools with multimedia computers, to train European teachers in digital technologies, to develop European educational services and software, and to speed up the networking of schools and teachers. In addition, the European eLearning portal has been set up (http://elearning.europa.info) to provide the support structure and act as a hub for promotion and exchange of best practice.

Future of eLearning

eLearning is progressing from the basic use of ICT for learning (e.g. as a research tool and replacement for books), to new forms of education and training – which emphasise creativity and collaboration – and new skill requirements for the knowledge society. This, in turn, requires a significant change of emphasis, away from a focus on technology, connectivity and the internet, towards a greater consideration of the context of learning, and of the need for collaboration, communication and innovation. Despite the considerable efforts undertaken, the eLearning sector is still fragmented and there are many open questions on how to exploit the potential of ICT in education and training. A broad partnership between the various stakeholders of industry, education and training, public sector and civil society is needed for Europe to reap the full benefits of ICT and learning in the knowledge society.

Virtual Campuses and Sharing for Higher Education

With the world of higher education increasingly competitive, many institutions are looking to virtual working to achieve critical mass as centers of high-quality learning. IST-FP6 project **iCamp** has the vision to become the educational web for higher education in the enlarged Europe. It will provide an infrastructure, the "iCamp Space", for collaboration, content sharing and social networking across systems, countries and disciplines. Interoperability amongst different open source learning systems and tools is the key to sustainability of iCamp.

Scientific and technical skills are crucial to Europe's future. For Europe to be able to compete on global markets and to meet the Lisbon targets for growth and jobs, it needs a pool of highly skilled scientists, engineers and mathematicians. Moreover, as the everyday world becomes ever more complex, it is essential for all citizens to have a good understanding of mathematical concepts, and a reasonable level of literacy on science and technology. Indeed, in a Recommendation published in 2005 as part of the Commission's lifelong learning policy, MST was identified as one of eight key competences necessary for every European to prosper in a knowledge - based society and economy.

The EU benchmark for the total number of graduates in MST has been set to increase by at least 15% by 2010 with, at the same time, a decrease in the gender imbalance. Reaching the benchmark implies an increase of about 100,000 graduates, to 748,000 in 2010. Despite the progress observed, the percentage of new graduates in these areas is not enough to fulfill the increasing demand from academia, industry and service sectors.

Thus, Europe must encourage children and young people to take a greater interest in MST and to ensure that those already in scientific and research professions find their careers, prospects and rewards sufficiently attractive to keep them there.

MST education should be an entitlement for every child and introduced at an early age. More effective and attractive teaching methods should be introduced, in particular by linking learning to real life experiences, working life and society, and by combining classroom based teaching with appropriate extracurricular activities such as science fairs, competitions, science camps, visits and museums. A broad approach is necessary, since no single measure alone will be sufficient to achieve the overall goal, and different students will be influenced by different kinds of measures.

Lifelong learning occupies an increasingly central position in the EU's education and training policies. The knowledge-based economy, along with wider economic and societal trends such as globalization, changes in family structures, demographic change and the impact of ICT, present the European Union and its citizens with many potential benefits as well as challenges. To take full advantage of these opportunities we need to be open to acquiring knowledge and developing new skills and competences throughout our lives. Although lifelong learning is gaining ground in Europe, too few adults are benefiting from it.

According to the latest estimates, only around 10% of adults in the EU aged 25-64 take part in lifelong learning. Almost 16% of young people in the EU still leave school early, and nearly 20% of 15 year olds continue to have serious difficulty with reading literacy. Only around 77% of 18-24 year olds complete at least upper secondary education, still far from the EU benchmark of 85%. In a world that is increasingly reliant on knowledge and skills, such a situation is storing up problems for the future.

A Council Resolution on lifelong learning in 2002 stressed the need for all Member States to develop coherent and comprehensive strategies. Relevant actions are reflected in the work programme for Education and Training 2010, which also includes specific actions for vocational education and training (the Copenhagen process) and higher education (the Bologna process). This work programme is the education and training strand of the Lisbon strategy and aims to modernize Europe's education and training systems.

In the latest policy review, published as a Communication in November 2005, the Commission calls for Member States to speed up the pace of reforms in education and training systems to avoid large proportions of the next generation facing social exclusion. To help achieve this, the Commission has set out what it sees as eight key competences every European citizen should have to prosper in a knowledge- based society and economy. These include the ability to communicate in foreign languages, basic competences in mathematics, science and technology, digital competence, and interpersonal and intercultural skills.

The goal of lifelong learning implies a culture where people regard knowledge and skills acquisition as a continuous part of everyday life. Learning cannot, therefore, be confined to traditional settings, such as school or university, and then left behind as a finished and acquired asset. It must be maintained, refreshed and extended.

Learning needs to coexist harmoniously alongside normal life, and must be accessible whatever a person's inherent intellectual capability, family situation, health, culture, gender, language or geographical context. Education has to meet people where they are. It must break

down the barriers of distance. ICT has an indispensable role to play. It can bring educational materials to people. It can bring people together in real and virtual communities. It can help them find what is available, matching aspirations with resources. And ICT can provide measurement and assessment services, defeating some of the cross-cultural and interpersonal biases that creep into traditional systems of reward and assessment.

Conclusions

The "Knowledge revolution" is the ability of the society to create, access and use knowledge that becoming fundamental determinant of global competitiveness.

Seven key elements of "Knowledge Society"
- Increased codification of knowledge and development of new technologies
- Closer links with science base/increased rate of innovation/shorter product life cycles
- Increased importance of education & up-skilling of labor force, and life-long learning
- Investment in Intangibles (R&D, education, software) greater than Investments in Fixed Capital
- Greater value added now comes from investment in intangibles such as branding, marketing, distribution, information management
- Innovation and productivity increase more important in competitiveness & GDP growth
- Increased Globalization and Competition

Bottom Line: Constant Change and Competition Implies Need for Constant Restructuring and Upgrading

For the knowledge economy is - an economy that creates, acquires, adapts, and uses knowledge effectively for its economic and social development.

Four Key Functional Areas
- Economic incentive and institutional regime that provides incentives for the efficient use of existing and new knowledge and the flourishing of entrepreneurship
- Educated, creative and skilled people
- Dynamic information infrastructure
- Effective national innovation system

The link between society, economy, knowledge and education is created introducing the eLearning that represents the progress for education and training - which emphasise creativity and collaboration – and new skill requirements for the new society.

The research related to this subject matter is an actual one and the challenges of the subject are more and more important in order to develop the future society and to create new models for the education and learning in equal conditions for all the individuals and in a competitive society.

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