Chapter 6
Conclusions and Recommendations

Nowadays, the economy and society as a whole is relying more and more on the spread and use of information as a core element of their development. Information is becoming important not only for individual lives, but mostly for companies success, sector and market developments, and then for the development of country economies in today's global markets. Another element related today more than ever with information is communication. People communicate not only for the simple purpose of transmitting messages, but for exchanging information, which has become in a lot of aspects the reason for communicating, especially in an economic aspect.

Economies and countries, more eager for relying on information are requiring more ICTs as the only mean that can support the development of the society in the light of information and communication importance. So, the spread of ICTs is becoming a core element of the development of economies, contributing in a different stage not only of their development, but also in the development of the societies. The term information society is now defining this new stage, where societies do not rely only on production or consumption, or services, but mostly in the spread and use of information for the purpose of development, job and wealth creation, value added in the economy.

These new trends were lying behind the reasons of this study, which tried to deeply analyze the most important elements which affect the development of information society in the right direction. As our first goal was to bring to the reader more insight in the concept of Information Society and the elements underlying this concept, at the very end we can say that information society is a stage of development of a society strongly related with the economy that has the following characteristics:

1. Use of information and knowledge
2. Economic and technologic transformations
3. Use of ICTs
4. New economic methods and models
5. Demand for new professions
6. Change in business landscape

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Dealing with these changes requires a new vision for the development of a country and a strategy for achieving the stage of information society because the purpose should be to derive economic and social benefits from these new trends. This vision and strategy must include the use of rapid transformation in ICTs for improving peoples' lives through ICT use in the long term. This is possible only through a strategic vision for the economic impact which must include measurable outcomes and benchmarking over a given time frame.

The development of strategies for the information society has become a must in different countries since there are also regional strategies and those in the EU level that try to give a proper direction in the development of information societies. Strategy development need also the right measurements and the knowledge of the level of preparation of a country for IS development, in order to achieve the maximum economic and other benefits from the use of digital technology. The notion of preparation leads to the concept of e-readiness, which is one of the elements that characterize the information society.

e-Readiness is about readiness in human capacities, political leadership, institutional frameworks, supportive policies, complementary regulations, business environment, investment opportunities, and public–private partnerships in technologies. A review of recent experiences in the developing world shows that the countries which are the most successful in creating a favorable climate for the use of ICTs are those that make it a priority.

The success required from ICT strategy implementation affects and is affected from ICT facilities quality and information system quality. In turn, they affect the perceived benefits. An ICT project implementation can only be perceived to have succeeded if the perceived benefits are realized. ICT facilities quality can be assessed after careful evaluation of the infrastructure to determine technical functionality.

So, the physical infrastructure of Information Systems is one of the important components of the information society. From this perspective the basic infrastructures as well as the related services are object of the first assessments of e-readiness in different countries.

Another aspect of this work deals with the identification of the indicators to be used. After an attentive look of different methods, we conclude that the distinction between measurements of use, access, and impact is very important. Access indicators measure what people or businesses have in terms of ICTs or how many exist in a country. Usage indicators measure how and for what ICTs are being used by households, individuals, businesses or governments, etc. Impact indicators capture the impact of access and usage on economic growth, employment creation, improvement in public service delivery on a macro level; and company performance, household poverty levels and social inclusion on a micro level, to give just a few examples. Impact indicators are usually derived from analysis of primary or secondary data.

For the purpose of this study, we focused on access indicators and in some extent in use indicators and for this reason we studied the ICT sector and market in details. After a thorough examination of definitions and history of ICT sector, we conclude that the product/service in the ICT sector is the core of information society infra-

structure. To be more concrete, ICT are a collection of technologies and applications that enable the processing, storage, and electronic transfer of information to a multiple user or customer. These technologies and applications are further classified into three categories based on their use: (1) computing (2) communication, and (3) Internet—the possibility of communication and computation. The two most important aspects of ICTs are the main processes and communications **infrastructure**. Communication processes can be one- or two sided. The relatively new technology of communication involves a number of nets that connect to each other through electronic communication. The Internet represents the convergence of communication and computation as well as spinal forms of economy and information society. Substantial improvements in strength, speed of computation and storage or total capacity, have greatly encouraged the development of economy and society based on information and knowledge. New technologies include so, hardware, software, and services in various fields. They include government, business, entertainment and art, science and medicine as well as knowledge management and distribution among multiple applications.

The sense of the product/services of ICT sector affects both the access infrastructures needed for the IS development and the measurement of market value and revenues of companies that of ICT. Analyzing the sector requires reliable data from government institutions and the awareness of ICT companies to take part in the measurement process since they are providing with the necessary infrastructures for the information economy and society. The accessibility and reliability of such infrastructure is assuming a great importance to the knowledge-based economy and society. Indeed one of the most important becoming infrastructures is also the supply of broadband services.

After a discussion of infrastructures in developed countries, it is understood that they have relied in their strategies more on free market forces, but the lack of government leadership has led to calls for governments to reassert themselves in this policy field through such means as regulatory reform and renewed public investment. Their experience shows that the role of municipalities and communities could also be very important in constructing their networks, as core elements in infrastructures of a country.

But the vision and the strategy designed in different countries depend on their context, so it is different in developing and developed countries. In fact, one of the questions raised at the beginning of this study was whether the information society will be built relying more on public efforts, or private sector.

We can say that market forces alone cannot make a difference, but even counting only on government leadership and public actors' efforts is not the best solution for building the information society. In fact, the initial enthusiasm for the development of ICT has already been replaced by caution that without focusing on all elements influencing, only the introduction of new technologies, will not provide the expected promised development.

Many governments, especially those of developing countries including Albania, are seeking to promote economic growth by assisting in the emergence and growth of local ICT industries. In this context, an important role in achieving growth and

productivity in the ICT sector will play all the factors which influence the growth and development of this market.

A nation's regulatory policies can have a profound influence on ICT investment and use. Where a nation's legal framework offers strong incentives for people to develop and acquire ICTs—including the skills necessary to use ICTs effectively—governments will have greater success in leveraging the power of ICTs and ICT industrial growth to advance social and economic development goals.

After reviewing each of the above factors for the development of ICT sector in Albania several important conclusions for each of the factors influencing arise from qualitative research and empirical data that lead analysis a step further.

ICTs are finding today in the Albanian society, a steadily increasing use, for the Albanian Government has established and implements the national strategy for ICTs.

Concerning the legal framework which is needed in order to facilitate and support the implementation and improvement of new technologies, new services and new regulations in the Albanian ICT sector little is left to be done, as most of the basic requirements for success in this field have been fulfilled. The regulatory framework for ICTs is not very updated in accordance with the European Union standards but however much work is under process.

ICTs are now used more in sectors such as governance and administration, but also education and business. They are used less in health or other sectors. There is still much to do, although ongoing efforts are taking place for its nationwide expansion.

Some important findings show about the growth of users of Internet and mobile phones, as well as the number of graduate students in ICT curricula around the country. Beyond the actual use, digital literacy means more. Increased use will come from more education and trainings in ICT. But, efforts to improve in this regard are also scarce. A low percentage of organizations subject to the interviewing through their managers/owners to train employees train their employees in the field of computer science, compared to the percentage of those who do not train.

It can be asserted that ICTs have just started to have a bigger attention from the business community and Albanian government as well. However, there is still to be done in terms of ICT infrastructure development and ICT SME usage promotion. Without a modern ICT infrastructure, the business community will find itself behind their regional competitors and will not be ready to fully cooperate regionally or internationally.

Big enterprises have started to adopt e-learning training tools for their staff and there is a good sign that this will increase in the near term. The majority part of small and medium business fully understands the benefits of ICT usage but they lack the proper funding and facilities to apply ICT in their premises.

The *e-Albania* campaign that includes the most important activities and services in the country such as e-health, e-government, e-schools, e-business, e-commerce, e-tax, and e-procurement should be more reactive and should involve more small and medium enterprises in terms of seminars, workshops, conferences, and trainings.

Albania should seriously consider the need of investments in building high capacity optical fiber terrestrial backbone infrastructure in order to support the

building and delivery of a broadband Internet network. Albtelecom is still the only operator with national and international connections available but still has a very limited coverage. With the help of more investments in infrastructure and more preliminary construction planning of pipes and ducts in new roads, a lot can be done to improve the urban, interurban, and international connections.

The main infrastructural issues to be covered are the penetration of fixed lines and Internet, the percentage of PC ownership, costs of Internet and mobile access and services, low level of awareness of the benefits of the use of ICTs, digital gap between urban and rural areas and in comparison to other countries in Europe, low level of state subsidies and lack of policies to support all these.

The ICT market was declining during the last years because of the crisis as stated by IDC. But it is foreseen that when the crisis will slowly begin to recede, the country will gradually achieve positive GDP growth, and the ICT market will return to solid annual growth rates.

But, on the other hand, it must be admitted that there are some problems which need to face Albania for the development and use of these technologies. As seen from the description of the general economic framework of Albania, to bear in mind some limitations connected with the overall situation. These include:

- High social inequalities in the country with a relatively unfamiliar with computers and technology and lack of knowledge of English language, from a part of population
- Lack of funds to a significant fraction of the population to ensure access to ICT
- Problems of lack of proper infrastructure for the access of the population at appropriate levels.

Some of the opportunities of Albania related to factors that impact positively on development and growth of ICT sector are:

- Excellent human resources in terms of specialists
- Has experienced growth in important sectors of the economy, as the construction sector of trade
- Number of businesses born each year, business structures
- Continued growth rates of lending to the economy, etc.

The e-readiness assessment provides all the information regarding the constraints and obstacles to a swift development of ICTs. Such constraints and obstacles are in fact an invitation to action, and it is the role of the strategy to define how to overcome them. Measurements of information society and e-readiness in Albania put Albania in middle ranking in a world level, but in the last positions in the SEE region. Skills level of population is a positive factor affecting these positions better than world average, but access in ICT and their use still are putting Albania in low levels. According to network readiness, the problems remain mainly in business usage, infrastructure, and economic impact, where Albania has the lowest scores. But even in government usage and political regulatory environment, where our efforts have been considerable, the scores are not satisfiable. Albania should look at the experience of some of SEE countries that, even in somewhat similar conditions,

have done significant progress especially in infrastructure and access and also in usage of ICTs. Their efforts in innovation, individual usage, and government usage are also higher.

Further on, the literature review showed that development of ICT sector depends on different forces that can be grouped in four categories: Innovation and government efforts, entrepreneurship, literacy, and use of ICT from human resources and infrastructure and access to ICT.

Our fifth degree model of linear regression test showed that some variables have not been important in Albanian case. In fact, the forces that the most have drown the development and growth of ICT market in Albania in last 8–10 years are the government efforts and the evolution of the mobile market, through the strong raise of mobile subscriptions. Other important factors are also those regarding Internet use and the capacity of investments in ICT.

After this study, some of the recommendations for policymakers, on strategies to promote an ICT-based growth for an information society, include:

- ***Provide effective patent protection for ICTs***: Patents stimulate innovation by giving firms the means to protect new and useful technologies against misappropriation. The requirement that inventors publicly disclose their innovations as a condition of protection, combined with the widespread practice in the ICT sector of cross-licensing patented innovations to third parties, promote the diffusion of technical knowledge and spur follow-on innovation by subsequent inventors. Inventions that otherwise meet the criteria for patentability should not be denied protection merely because they are implemented in computers or other ICTs.
- ***Policies must also take into consideration building a regulatory environment that supports microfinance***: An important complement to property ownership—and a critical element to the viability of business-to-consumer e-commerce—is straightforward, widespread access to microcredit and microfinance. Governments should also remove regulatory barriers that might impede financial institutions from offering credit cards and similar financing options to consumers, and should provide incentives and consumer protections to ensure that such credit options are available to underserved populations.
- Promote open, competitive trade in ICT products and services by implementing the policies that ***incite market access for ICTs and cross-border e-commerce***: Government in developing countries, especially in Albania should ensure that the ICT market is not distorted by preferences for certain classes of producers, including those utilizing specific development or licensing models, should base ICT procurement decisions on relevant performance-related criteria such as value, total cost of ownership, feature set, performance, and security. While e-commerce allows vendors in developing countries to reach customers regardless of geographic location at low cost, thereby helping them compete effectively in the global marketplace. So proper e-commerce solutions would help business readiness which is lacking in Albania.

- ***Encourage collaboration between public and private researchers***: Joint research ventures between publicly funded institutions (such as universities or other nonprofit research institutions) and ICT firms can provide an important financing mechanism for basic scientific research. Such collaboration can also shorten the time between the discovery of new technologies and their commercial application.
- ***Provide incentives for ICT education and training at all levels***: Primary and secondary schools should offer ICT skills training and testing opportunities, and colleges and universities should be given incentives and additional resources for providing ICT skills training. ICT retraining and lifelong learning programs are also critically important to ensure that workers have the opportunity to strengthen their IT skills and thereby become more employable and productive.
- ***Strengthening business education and training and including ICTs***: Lack of critical business skills may impede the emergence of a domestic, entrepreneurial ICT sector. Government and domestic business associations have major roles to play in providing a framework to encourage business skills development, *e.g.*, through vocational training and other training programs directed at improving the businesses of SMEs.
- ***Support microfinance mechanisms***: Microfinance has proven to be an extremely effective development tool, although to date much of this financing has been provided through nonprofit organizations. Governments should foster microfinance-based initiatives and remove any regulatory obstacles that might impede access to such financing. In the longer term, governments should examine ways also to provide such financing through for-profit institutions so as to ensure that these mechanisms are sustainable.
- ***Incentives for private-sector R&D and ICT spending***: Promoting a regulatory environment that values innovation and encourages ICT investment is vital to capitalizing on the potential of ICTs to promote development objectives. Tax credits and other incentives for private-sector R&D will foster innovation, while similar incentives for investments in telecommunications infrastructure will promote broad public access to the benefits of ICTs. To promote productivity growth, businesses and other organizations should be offered financial incentives to invest in ICTs and provide IT training to their employees. Examples of such incentives include tax credits, loans at favorable interest rates, and accelerated depreciation schedules for ICT assets.
- ***Invest in targeted broadband network development***: Although universal broadband network access is likely to be prohibitively expensive in the short term, targeting specific industries or locales for broadband development may in certain cases be economically feasible and provide important benefits. For example, efforts to provide broadband access to technology parks or other areas with high concentrations of IT firms would stimulate IT sector development and serve as a model for broadband deployment more broadly.