

Strategies for Development of Information Society in Montenegro

Vujica Lazovic, Tamara Djurickovic

Abstract—Creation of information society, or in other words, a society based on knowledge, has wide consequences, both on individual and complete society, and in general – on a economy of one country. Development and implementation of ICT represents a stimulant for economic growth. On individual level, knowledge, skills and information gathered using ICT, are expanding individual possibilities of persons, enabling them to have access to timely sensitive information, such as market prices or investment conditions, possibilities to access Government's or private development funds, etc. By doing so, productivity is increased both on individual and national level and therefore social wellbeing in general. In one word, creation of information society - a knowledge society is happening.

This work will describe challenges and strategies that will follow the development as well as obstacles in creating information society – knowledge society in Montenegro.

Keywords—eDevelopment, eTransformation, information society, knowledge economy

I. INTRODUCTION

INFORMATION society is a term used to describe a society in which creation, distribution and manipulation of information became the most important economic and cultural activities. Information society can be completely opposite to societies in which economic incentives have mostly industrial or agricultural character. Machines and tools of information society are computers and telecommunications, not lathes and ploughs.

Progress of information and communication technologies is changing the way humankind is living: the way people work and perform activities, the way children are educated, how studies and research are performed, and the way people train and have fun. Information society is not only influencing the way that people communicate, but it also requires the traditional organization structures to become much more flexible, much more included and decentralized.

The idea of a global Information Society can be seen in perspective of Marshall McLuhan's prediction that

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communication media will transform the world into a “global village”.

Also, a very useful definition is the one from the report of IBM Community Development Foundation: “The net result – report on activities of national working group for social inclusion”, from 1997:

“Information society: society characterized by a high level of information intensity in everyday lives of most citizens, in most organizations and job positions; use of mutual or compatible technologies for a wide range of personal, social, educational and business activities, as well as capacity for transferring, receiving and exchanging digital data, in a very fast way and between different locations, no matter of the distance between them.”

There is no doubt about the fact that information and communication technologies (ICT) have a significant impact on economic development, employment and human resources. Bearing this in mind, it must be realized that the development of economy based on knowledge, creation of efficient public administration and inclusion of all citizens in organization of public life should become priorities of outmost importance for a small country like Montenegro, with limited resources.

According to the European Union strategy for information society, i2010, ICT represents about 25% of GDP and about 40% of productivity growth in EU. In order to achieve such results, and to make Montenegro an equal member in terms of use of information and communication technology, it is necessary to develop modern ICT solutions, used by both public and private sector. In that way a clear idea is sent, saying that creation of information society is a strategic task for Montenegro, in its social, economic and political development.

Development of information society, together with the ICT implementation in order to raise the level of efficiency of different economic and social processes, requires coordinated efforts and activities among all Governmental institutions.

Primary tool of an information society as a post-industrial society, are computers and telecommunication tools, and means of transport are Internet and mass media. This model's characteristics are use of prevalent compatible technology for personal, educational, business and social activities, as well as fast and easy transfer of information, no matter of the geo-political borders.

While the industrial society was characterised by needs for consummation, individualism and material, productive power, in the economy of information society information trade

becomes dominant, compared to material and agricultural economy of the industrial society.

Information society is bringing need for progress and achievement, synergy, information producing power and development of “spiritual industry”, as some people call it. It is supposed to bring a complete blossom of human intellectual creativity, instead of vain consummation of material goods, which is a premise of industrial society. Increased access to information should lead to “complete objectification of a society”, which means that people will independently produce information in order to create an “aware or wise society”.

It is certain that this kind of communication with ideas has implications both on governing way and distribution of power.

Corporations, individuals, groups, states and international organizations are trying to promote and control information flow through state borders. The types of information in question are different, starting from intellectual property and scientific research, to political involvement, branding or cultural symbols. The aim of the new methods of distribution and manipulation are digitally organized, networked environments. Results of a battle for information flow, will define who is holding the power in global information economy.

Can cyber society become capable to resist to individuals and groups desiring power? Could the tendency of corporations taking over the Internet be stopped? How is the regulation of Internet useful for privileged, rich, enlightened and educated class, and how much it can establish on overcoming the economic and socio-cultural disparities? How to find a model of organization, systematization, legal regulation and coordination of global management of Internet, and other known and future types of information transfer? - These are just some of the many questions with which policy and development creators (i.e. creators of eDevelopment) of nowadays are preoccupied.

II. FROM eTRANSFORMATION TO eDEVELOPMENT

Development is seen more and more as a process of change and learning. This is a non-linear, discontinuous and uncertain process. Innovation, technological changes, institutional transformation and development potential are in the centre of this process. From the other side, technology is much more than a plain component of development strategies; it represents a tool that is enabling an element, causing their sustainability. As the technology is experiencing changes, it opens new boundaries and creates conditions for generating new development chances.

Recognizing the importance of contribution that knowledge has on development process becomes more and more visible. The understanding of development is changing in time, influenced by the switch from investment concept as a primary source of growth, to those who give priority to increase of total productivity factor, with help of technology improvement, development institutions and development of knowledge.

The very essence/context of development is changed too. In globally connected world, ICT, Internet and other institutions managing and transforming information and knowledge have become an element/an integral part having an impact on different processes such as: growth, development and decrease of poverty. A massive transfer of knowledge is enabled through digitalization of information flow. Developing countries can come closer to borders of knowledge in areas of health and education standards, management of public administration and business models. A quality growth can be achieved through “inspiration/enthusiasm”, and not only through “work/sweating”. Growth can also be generated from non-material resources, understanding the knowledge as work, adopting the network types of organization, through outsourcing of business activities and treating/practicing new ways of business models.

New technologies and tools have caused raising awareness about the need for acquiring new skills, creating innovative systems, development of ICT system of management, protecting the intellectual property, work and life in digital world, full of quick changes. Besides, policy creators have a task to put knowledge and technology in function/in business, as well as identify technologies enabling the long-term potentials for growth and decrease of poverty. Knowing the service of management, and efficient “engaging in” these issues will result in significant differences in development outcomes. New policies created as a result of eTransformations have a task to define target groups for development of technology and capacities, as well as to focus the sources/resources on these areas and make them achieve their full potential in long term. This kind of “positioning” will not be limited only to ICT industry and it will represent key abilities for implementation of ICT as a technology for everyday use.

eTransformation is much more than *high technology* or *new economy*. [10] It is much more connected to knowledge, innovations, competitive economy, involvement, knowledge and information society. However, unlike the knowledge economy that is dealing with non-material sources of knowledge and outcomes of knowledge economy, eTransformation focuses on ICT as a starting point which takes a holistic stand in accepting this new technological revolution, in order to transform economy and society. This implies that acting in all elements of eDevelopment is necessary, including policies, institutions, as well as capacities for using new technologies, and not only promoting ICT industry or ICT investments.

III. DIGITAL GAP: NEW TECHNOLOGY – OLD DIVIDE

There are numerous reasons why Internet era could substantiate differences – divides between developed post-industrial states which are in the *centre* and *peripheral societies* of undeveloped regions. If the investment in digital technology can encourage the productivity growth, developed economies such as Swedish, Australian and USA economy

which are leading the technological revolution, could increase the advantage that they have compared to most of the poor countries, who are already significantly behind, burdened by debts and sickness, and which, in long term, could completely loose connection.

Key issues for creators of information society development are the following questions:

Does the development of information society in developing countries follow the trend of development of information and communication technologies? Or, is it necessary for countries trying to achieve the status of developed countries to develop the information society services much faster, so that they could catch up with the most developed states?

Global level debate still conducted on the issues of impact of Internet, on both societies and individuals, does not have only academic significance. Namely, creators of practical policies in different areas are often considering the Internet as a potential catalyst of complete socio-economic development, while developing corporations see Internet as an opportunity to gain profit. Together with the development of Internet, we have the increase in number of users, as well as increased possibilities of its use. Very soon after the awareness about Internet as a global phenomenon was developed, it became clear that a very important dimension of global divide was born – digital divide, i.e. digital gap.

Concept of digital divide is mostly related to unequal distribution of Internet access possibilities and information and communication technologies in wider context. However, it is necessary to make a difference between *digital divide in a narrow context* and *global digital divide*. Digital divide in a narrow context identifies unequal presence of Internet, which is marked with features like: gender, age, race, ethnicity, education and income[8].

As the term digital divide got a wider context and it refers to global digital divide, differences between countries and regions of the world – regarding the Internet access – must be emphasized. Manuel Castells (Castells, 2001) is pointing the following:

»Differences in Internet access between countries and regions in the planet at large are so considerable that they actually modify the meaning of the digital divide, and the kind of issue to be discussed«.

Accordingly, the term global digital divide is marking a wider context of international social and economic relations.

A. Global digital divide

Internet diffusion on global level points to the contrast within the certain regions of the world, as well as between the regions. To illustrate this, the data of Internet World Stats are listed in Table I.

Although there is no methodology to verify the compliance of studies quoted by World Stats, the data from Table 1. can help in designing very clear and very implicit data of Internet penetration rate. The fact that even in the online world there are differences between rich and poor countries is not at all surprising – any other assumption would be naïve, taking into

consideration the big differences in all other areas of life – starting from health insurance and nutrition, to education and expected life-time.

TABLE I NUMBER OF INTERNET USERS ACCORDING TO THE DATA OF INTERNET WORLD STATS-A (SEPTEMBER 2009)

Region	% Region Penetration	Growth 2000-2009	% total number of users in the world
Africa	6.8 %	1,392.4 %	3.9 %
Asia	19.4 %	545.9 %	42.6 %
Europe	52.0 %	297.8 %	24.1 %
Middle East	28.3 %	1,648.2 %	3.3 %
North America	74.2 %	134.0 %	14.6 %
Latin America and Caribbean Islands	30.5 %	890.8 %	10.3 %
Australia and Oceania	60.4 %	175.2 %	1.2 %
The World	25.6 %	380.3 %	100.0 %

When we talk about Montenegro, and in general about the development of information society in Montenegro and its position in online world, comparison with countries of ex Yugoslavia is often used, having in mind the geographical position, development, and other similar socio-economic factors influencing the development. According to the data of Internet World Stats, Internet penetration in this region is very similar in most of countries, except Slovenia and Croatia, which have managed to position themselves among 49 countries of the world who achieved Internet penetration bigger than 50% (among 273 countries for which World Stats is gathering data).

TABLE II NUMBER OF INTERNET USERS IN COUNTRIES OF EX YUGOSLAVIA (INTERNET WORLD STATS, SEPTEMBER 2009.)

State	% Penetration	Growth in period 2000-2009	% users in Europe
Bosnia and Herzegovina	31,2 %	20,485,7 %	0,3 %
Croatia	50,0 %	1,022,2 %	0,5 %
Montenegro	43,7 %	N/A	0,0 %
Slovenia	64,8 %	333,3 %	0,3 %
Serbia	44,7 %	725,0 %	0,8 %
Macedonia	43,9 %	2,923,3 %	0,2 %

If the level of Internet penetration is compared, it is clear that Slovenia and Croatia are entering the category of countries with penetration above 50% rapidly, while the other countries of ex Yugoslavia are on more or less similar level. However, data on growth for period 2000 – 2009 are interesting, because they are showing the smallest growth in the countries that have bigger Internet penetration. Now, understanding the importance of information society development and trend of using information and communication technologies, as well as policy of eDevelopment are in favour of this data. However, an answer can be found to the above stated question here, which means that through raising awareness and use of ICT, developing countries can try, and in a certain time period achieve the level of developed countries. Of course, it is important to accept

examples of good practice from region, but also to learn and omit mistakes that others made in creation of their information societies. On that way, it is possible to achieve a certain level of development and “skip a couple of steps”.

IV. KNOWLEDGE SOCIETY VS. KNOWLEDGE ECONOMY

Primary aim in one country should be creation of knowledge society, and not creation of knowledge economy. This means above all two things: first, this is reflected in the fact that ICT doesn't only make the economy more productive, but it also implies significant social and cultural changes; secondly, it means that chances enabled by knowledge society should be opened for all citizens, so that the knowledge society would become inclusive and cohesive in future. So, future society should be more inclusive in the most possible way. Within the meaning of this, an important progress is achieved in the past years: 56% of European citizens are using Internet in everyday work (Eurostat, 2009), although differences between regions are evident. For example, citizens of East and South Europe use Internet much less compared to citizens of South and West Europe (in favour of this is the fact that about 83% of citizens of Netherlands are using Internet, while only 26% of Romanian citizens use this technology)[5].

In order to make an information society of a country developed, it is necessary for it not only to access advanced electronic networks, but also to use these networks for online services, eCommerce, communication, social networking, etc. It is evident that today we are reaching a point in which the social participation in knowledge society is becoming obligatory, because of existence of organizations which promote online access to services, at cost of “offline” access. i.e. access in the “real world”.

If the network access and capacity of service use are necessary for participation in knowledge society, then the key issues are *if they should become a part of fundamental rights that should be included in some kind of a charter on digital rights*. Same as the access right, these rights can include freedom of speech, privacy, identity, data protection, security, as well as protection from malicious software – malware (illustrated in Figure 1).

It is more important that a state makes an effort to engage those that are excluded from the knowledge society. To do this, it is necessary to understand better who those people that can not participate are, and what are their reasons, i.e. why they can't do this. Do the barriers have anything to do with the availability and access to network, or are they more related to ability and willingness/readiness of an individual to participate?

Researches have shown that access is a precondition, although capacity and motivation are the biggest barriers in use of Internet. Certain demographic groups have different reasons for their weak Internet access.



Fig. 1 Digital rights in knowledge society

For example, women, older persons, pensioners, unemployed persons, persons with handicap, people with low incomes or people with very low level of education are usually using less the Internet. Researches conducted in UK (FreshMinds 2009) show that among the people not using Internet 68% are pensioners, 66% have a very low level of education, 58% are part-time employed persons, i.e. those that don't have permanent appointment or handicapped people, and 55% are women. Besides, a secondary digital divide is evident – it considers not only those who use Internet, but also the way and purpose of its use [5].

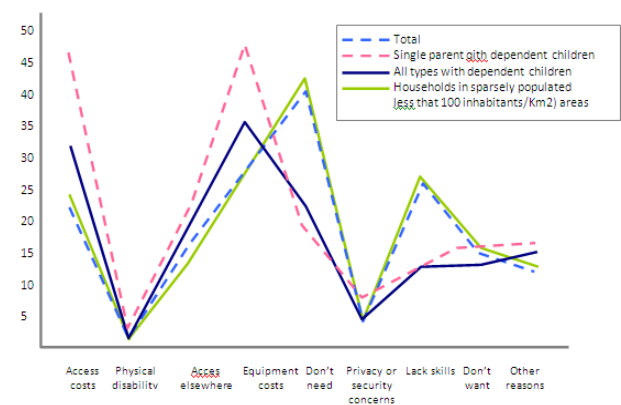


Fig. 2 Reasons for not having Internet at home (2008) [5]

Figure 2 shows that the main reason for not using Internet is that it's not needed, people can't afford it and they don't have enough skills. The Community Survey on ICT usage in households and by individuals (2008) shows that the main reason why people don't have Internet at home is a perceived lack of need (38%). Equipment costs (25%) and access (21%) are still a barrier, as well as lack of skills (24%). Privacy and security issues (5%) and physical disability (2%) are rarely seen as a barrier, although they remain significant for certain number of questioned people [5].

Similar researches have been conducted in Montenegro, in

order to establish the level of information literacy, together with the level of development of information or digital society. The last research in this area was conducted in 2007 and it included questions dealing with level of ICT literacy, public knowledge on eGovernment services, question who should be the initiator of changes, etc. According to the results of this research, from all the research participants using computers, only 80% was using Internet. This means that there are still 20% of people not using Internet. The same results came for 39,6% of people, age between 50 and 59, as well as 23% of females, from which 26,7% from northern region of Montenegro. According to the same research, Internet is used in most cases for sending and receiving e-mails (26,3%), 12,7% of people are using Internet for chat, skype, messenger, mIRC, ICQ, SMS and for searching information. Small percent of participants is using Internet for VoIP (1,5%) and ebanking (1,2%)[9].

TABLE III WHAT INTERNET REPRESENTS FOR A PARTICIPANT OF THE RESEARCH?[9]

	THE BIGGEST IMPORTANCE (GRADE 5)
News and information	69,5%
Communication tools	63,1%
Education	56,7%
Entertainment	46,3%
Buying – selling	18,7%

All of the above listed indicators show that there is a potentially big problem with creation of inclusive knowledge society. Even if the issue of access and availability is addressed, and at the same time issues of skills and trust solved through training, there will be still people – at most 10% of population – who do not want to be a part of knowledge society. Recognizing those who “do not want to play” and those who “can not play” will be necessary, in order to enable the inclusive knowledge society to exist and be created.

V. THE IMPORTANCE OF EDUCATION FOR CREATING KNOWLEDGE SOCIETY

While the term “information society” is generally referred to economic and social arrangements of a society, one of the biggest features of this kind of society is that it depends very much from ICT professionals and specialization. The complexity of a modern, information society means that citizens, together with public servants can not completely understand all the elements from which this society is made of. Changes are very quick in a society in which citizens must understand how to use ICT, bearing in mind that it is not necessary for them to know how the ICT functions; they don’t understand the significance of technological choices and how they affect the world. This means that the public trust depends on the professionals who are designing, producing, maintaining, distributing, upgrading, improving and using ICT. Bearing in mind how much the world was built with help of ICT and how it moves in this direction, trust in ICT professionals can’t be considered as a minor thing.

Recognizing the importance of trust in ICT professionals is emphasizing the importance of professionalism, which is bringing us to ethical codes of ICT professions. Of course, related to this is an equally important role of education for ICT professionals. If the above mentioned analysis is true, than the importance of trust in ICT professionals should spread exponentially. When we entirely understand the idea that the choice of ICT is not only a technological issue, but a choice that the society itself makes considering what kind of society will exist, which values were made easier and limited, pointed and prevented, than it is obvious that ICT experts don’t have only a task to create and provide things, but also to create the world for humankind. They are the invisible designers, and furthermore legislators of the society.

Accordingly, when it comes to the issue of education of professionals, it is critically important for them to understand the importance of their work. ICT professionals should be educated in a way that it forces them to understand the importance of social, political, economic and other values, as equal as it is important for them to understand computer science, mathematics and physics. ICT experts should become socio-technical analyst in the future. They should be capable to think about the values which include hardware and software, as well as social practices and social relations which come with hardware and software.

On the other hand, challenge of understanding the way in which the citizens should be educated to become full members of information society is much more frightening than the understanding of an adequate way to educate ICT professionals. The easier way is to say that citizens, same like ICT professionals, should finish education that will help them to see and realize the connection between technological, sociological, political and cultural choices. So, the easier way is to see how important it is to understand this. The harder part of the story is how to make this work.

What is present here is a simple idea of democracy, idea that says that individuals should raise their voices in all decision making processes, which influence their lives. If the above mentioned point is true than citizens should participate in some essential phases related to many technological choices. Somebody might say that they already contribute through the market. This is true, but only for some types of the products; however, it is not the point how citizens give their contribution to decision making process, as much as it is what kind of education will enable their participation in technological decision making.

We can’t expect from citizens to understand technology in the same way that experts understand it. On the other hand, they should understand it enough to be included in dialogs that make sense. Accordingly, the biggest challenge of information society is exactly the ability to create balance between these key issues.

VI. MONTENEGRO’S STRATEGIC PRIORITIES IN CREATING INFORMATION SOCIETY

Creating conditions for development of information society

(IS) important presumptions are enabling Montenegro to continue its development, as well as to completely integrate in the global economy, more intensively than through using any other technology. With this kind of approach a good ambient not only for development of ICT sector, but also for faster implementation of these solutions in all other sectors will be created, especially in economy and civil sector.

State administration should also use information and communication technologies for internal communication and services, enabling efficiency and transparency in relations with citizens and economy. In the Managing Reform Strategy of Montenegro for period 2002-2009 information technology (IT) was recognized as one of the very important factors in the very process of managing reform. It has been pointed that many aspects of the reform are not possible at all without modern information technology, which is an important catalyst of changes, and it brings big advantages in productivity raising and enabling quality of managing services. Informational modernization of country has been foreseen as one of the activities for implementation of Managing Reform Strategy. This modernization includes: (1) enabling further upgrade of information system and modern working tools, (2) preparation of special programmes of technical and technological improvement for certain areas and (3) focusing automation by the principle of "one paper".

The wanted goals are not achievable without creating adequate institutional frame, which would organize, encourage and help the development in area of information society. However, in this moment there is no model that different countries could follow while creating their own ICT agencies or ministries. A number of models should be created; view that "one model fits all" seems irrelevant when the success is depending on many factors, like it is the case in eDevelopment.

Many countries should develop different institutional arrangements for eLeadership, switching from one model to another, experimenting with new hybrids and on the other hand, creating completely new models. But, fundamental choices and views which are similar among countries are the following:

- *Integration into development:* which institutional arrangement is necessary to promote ICT integration into development strategies and management? Which role should central ministries (finance, planning and economy) have? How should the demand for new institutions be mobilized and articulated, so that it could position and integrate an ICT strategy with development goals and policies?
- *Synergy between components of eDevelopment:* Which organizational frame should be required and set up for different elements of eDevelopment? Which type of institutional leadership and network is necessary to enable synergy between ePolicies, telecommunication infrastructure, ICT literacy and human capital, ICT as a sector or core of responsibility and ICT as promoter of all sectors of

economy?

- *Coordination between eGovernments:* How should the Governments be organized in order to manage ICT supported transformations, and to deal with inter-sectional roles of ICT? How can the technological imperative development of typical company architecture be adjusted with need to empower agencies and ministries which should articulate their demand for ICT supported services and integrate ICT in their sectional strategies? Besides, which institutional frames and coordination of which activities could encourage collaboration?
- *Centralization and discretion:* How much should the Government decentralize its planning and decision making in eDevelopment and ICT investments? Which institutional arrangements are necessary to promote bottom up innovations, and centralized measures to achieve success? How should eLeadership institutions encourage this optimum level of eGovernance?
- *Fit within the country's institutional architecture and capabilities:* How are new eInstitutions and capacities supposed to be built in order to be adjusted (or maybe transformed) to existing political culture and institutional structures of the country? For example, which role should the state have in creation of new knowledge economy? Which type of institutional arrangements and capacities should be conducted in building new effective partnership between central governments, local authorities, private sector and civil society? Which level of authority and autonomy should the central ICT agency possess?

A. Institutional goals

Leadership, institutions and human resources (capacities) are the key for moving countries from status of potentials vision and incoming information and communication technological revolution to realistic, competitive, innovative and knowledge based economies. eDevelopment represents a unique challenge in formulation, implementation, monitoring and evaluation of ICT policies for social and economic development. This is evident in all government's departments and all sectors of one economy. Governments in this case must have a role of regulator, developer, and ICT user, in close relation with other big stakeholders, such as private sector or civil society.

Overlapping nature of ICT requires institutional arrangements and coordination mechanisms which would ensure coherence of policies and investments, through all relevant sectors. This requires reinforcement of existing or new governmental or mixed, private and public units to provide eLeadership and strategy (political and advisory functions), as well as to implement, follow and evaluate programmes (operational function). There is not such a thing as unique model, "one size or model to fit" all institutional

solutions. In any case, there are mutual principles that could work/function in many countries and economies in transforming ICT into a powerful development tool. The created templates (patterns) and trends can also be different when it comes to government's mechanisms, organizational structures and key competences of international bodies, responsible for promotion and coordination of knowledge economy programmes in general, as well as typical e-government programmes.

The existing organization of public administration in the area of information society development, generating new ideas and creating new policies for modern service development, both towards citizens and towards economy subjects/industry, as well as among the very organizational administration units, is not rational in its biggest amount, because these tasks are basic responsibilities of two institutions, while many other things have been generated on the level of other state bodies and organizations, which create their systems by themselves. In this way, possibility for interoperability to be made is much harder.

On the one hand, there is a need to consolidate tasks which are related to establishment of development policy for electronic communications, information technologies and information society, and on the other hand the necessity to harmonize work of public administration which have certain responsibilities related to information society development.

Development of information society can be improved only through institutions which act as coordination bodies for eManagement, and tools for enabling and creating modern society. In many countries, besides agencies, i.e. bodies responsible for establishment and development of information society, there are other agencies, bodies and institutions responsible for certain specific segments. Bearing in mind that in Montenegro there is no developed institutional infrastructure necessary for development of Information society, there is a strong need to establish both state and academic institutions, private sector institutions, NGOs, etc., in order to establish institutional frame for planning, management, implementation and supervision of the whole process of information society development.

e-Development institutions should be able to act/perform a couple of basic functions: (a) formulation of eStrategy, including ICT strategies integrated in total development and business strategies; (b) formulation of policies and development of legal, regulatory and ICT governance frames; (c) implementation, coordination, partnership and outsourcing programmes; (d) mobilization and allocation of resources between competitive and inter-dependant ICT investments; (e) promotion of connectivity of economically distributed ICT diffusion, digital literacy, local context, innovations, achieving success and demand for eGovernment services; and (f) strategic communication, monitoring and evaluation.

VII. CONCLUSION

Development of proper development policies and

institutions creating and managing these policies is a key for establishment of knowledge economy, a basis for creation of information society and a stimulus for development of new technologies for integration and transformation of business processes and management. Institutional changes and innovations, as well as innovative technologies which are in charge of transforming traditional into modern ways of business and life in general, are necessary for proper and efficient management of knowledge, information and communication. Specialized institutions and developed skills of individuals require creation, seeking, adoption, differentiation and use of these technologies, as well as synchronization with existing reform policies, investments, managerial innovations and political revolutions like technology, enabling more efficiency and effectiveness, in order to create competitiveness of a state, i.e. state economy based on knowledge.

Technology can be exciting, but in the real world, elegant technological solutions have no significance, unless they produce significant business results. Unlike the big countries, Montenegro can easily implement small projects and create information society, a society which is using modern technologies and which is based on knowledge economy.

Information and communication technologies (ICT) are a powerful tool of development and a necessary infrastructure of knowledge economy. They have a penetrating influence on all human activities, from personal life to business activities and management within the government. ICT is fastening the spread of information and knowledge, eliminating geographical restrictions and making the information and knowledge available. Proper preliminary investments make ICT barriers for entering market decrease, while the competition increases. Barriers which are usually present have institutional nature. Lack of leadership and institutional capacities, necessary for encouraging ICT in business (development) strategies, are causing the necessity of integrations between ICT investments with changes in organization, process and skills. Fact is that if there is no willingness of government to accept changes, open the market and introduce healthy competitiveness, than there is no progress in development of technological sector. New generations are growing up in a digital environment, whose aim is to create conditions for further development, using all models of digital economy.

One of the challenges and development chances for small market economies is certainly Innovative Management, in all areas and business processes. In so far conducted researches it has been shown that the human capital is a very important factor in innovations, and that lack of necessary knowledge and skills is the biggest obstacle for innovations. IT solutions must be based on a stable infrastructure and reliable IT equipment which enables maximum use of possibilities, simple management and maintenance with minimum costs.

Initiative related to promotion and development of information society should enable Montenegro to move on to further development and completely integrate into global

economy, much faster than any other technology would make it able. This view should not only develop ICT sector, but it should ease the implementation of ICT solutions in all other sectors, especially in economy and civil society. Public administration should also use ICT for internal communication and services, enabling efficiency and transparency towards citizens and economy. This initiative should promote the use of ICT among citizens and economy.

Basic goals of the information society development programme in Montenegro are enabling citizens and entrepreneurs to receive information in the right moment and to actively participate in a society through a networked information system, but it also offers empowering and connecting of Montenegrin economy, a thorough exchange of information and practices in business world and entrepreneurship, as well as equipping state to become a transparent, fast and efficient service.

Mutual work on building ICT structure ensures not only interoperability in data and information exchange, but it also gives an opportunity for better engagement of sparse resources (human and financial), necessary for creation of modern information society.

In this way we are creating a sense of togetherness and uniqueness of goals, at the same time achieving cooperativeness on other fields, which results in optimum social atmosphere.

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