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Towards the Importance for Sustainable Development: Case Study: Albania

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Abstract: Information has become an important element without which society cannot achieve its objectives. The term "information society" is increasingly used nowadays, because of the importance and necessity of information in today's dynamic environment. Western countries are convinced that the information society will result in economic and social benefits (Audenhove 2000). Organization for Economic Cooperation and Development (OECD), notes that information infrastructures are expected to stimulate economic growth, increase productivity, create jobs, and improve on the quality of life (Gichoya 2005). It is for these reasons that many studies state that the role of ICTs as enablers of sustainable development is growing. The overall goal of this paper is to point out the importance of ICT market development for the sustainable development of all the economy and the final development of Information society, especially in developing countries, where Albania is the case study illustration. The first step of this research is to show the importance of studying ICTs in the light of building an information society. In fact, the efforts of a country to build an information society, in order to benefit in terms of sustainable development, are closely related to the efforts of building strong information infrastructures and a growing ICT sector. Many indicators related to Information society measurement deal in fact with the infrastructures needed and the products and services of ICT sector. But, failures to submit ICT in contexts which are contrary to techno-economic rationality are reflected in many cases in developing countries. Thus, a defining characteristic of this research is to understand the contexts that confront ICT and information systems development in developing countries in terms of their conditions. In fact the development of ICT sector, depend not only on the political, economic and social conditions of each country, but also on the phase of e-readiness of the society. Measuring the readiness of this society to enter in the information and electronic age is very important, in the context of sustainable development. The methodology of this research includes two steps: analyzing secondary data about Information society and ICT market development in Albania, analyzing questionnaires directed to ICT market firms about the most important factors that are affecting today the development of ICT sector. New emerging technologies, such as broadband, wireless networks, cloud computing etc., are always changing the environment of ICT sector and the infrastructures used. Financial forces and investments are playing an important role when speaking about the research in this field. But the future challenge, especially for developing countries will be the decision to better interaction between private operators and public policies, inciting the ICT sector or the private investments oriented through more services and infrastructures for developing successfully an information society.

Keywords: Sustainable development; e-Marketing; ICT market

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1. Introduction

Based on United Nations, The World Commission on Environment and Development (Brundtland Commission) (1987) sustainable development is definition emphasizes on the concept that current generations should meet their needs without compromising the ability of future generations to meet theirs, and the debates of the Millennium Summit as presented by The United Nations Development Program (2001).

Vallega (2001) explains that sustainability is intended as the result of the contextual pursuit of (i) the integrity of ecosystem, (ii) the efficiency of the economy, and (iii) social equity, including the rights of future generations. Similarly Hughes and Johnston (2005) address sustainability through three major components: continued economic growth and human development, protection and extension of social capital with a special emphasis on social equity, and protection of the natural environment.

As we can see, sustainability can be achieved if society focuses on using the right models and means that assure growth and economic efficiency, social equity and environment protection. In this regard the role of information usage in the society is crucial. For this reason, the technologies that foster the use and the processing of information are considered nowadays, of primary importance for the development of the society. ICT is now part of development. The debate in the 1990's over choosing between ICT and other development imperatives has now shifted from one of tradeoffs to one of complementarities (Markle foundation 2003). Many examples show the impact of ICTs in the three areas related to sustainability.

We will have the possibility to show some of them in the section of literature review, to illustrate the relationship between sustainable development (in the three areas above) and the use of ICTs.

The efforts of many societies to use ICTs for the purpose of development have been integrated in the strategies for sustainable development of the countries and also in different action plans. To properly benefit from the use of ICTs there is need for the development of infrastructures and access, which is different in developed and developing countries. This leads to the concept of e-readiness. So the importance of studying e-readiness and the relationship with ICT sector and ICT market becomes very important in this regard. But, failures to submit ICT in contexts which are contrary to techno-economic rationality are reflected in many cases in developing countries. The literature review will help in developing a conceptual frame for the importance of Information society and e-readiness in the sustainable development. The place of ICT sector in this frame should be emphasized. A defining characteristic of this research is to understand the contexts that confront ICT and information systems development in developing countries in terms of their conditions. The case study of Albania, as a developing country, can help in a proper illustration.

2. Literature Review

2.1 The Role of ICT in Building Information Society And Sustainable Development

Western countries are convinced that the information society will result in economic and social benefits (Audenhove 2000). In a society where the information and knowledge are of vital importance for the purpose of development, the role of ICT is growing.

The term "information society" is increasingly used nowadays, because of the importance and necessity of information in today's dynamic environment. The 21st century is a period of economic, social and technological transformations that facilitate development of the new society that is referred

to as the information society (Bell, 1973; Drucker, 1993; Tofler, 1980). The very notion of the information society was firstly used in the sixties, by a Japanese economist named Tadao Umesao. He paid much attention to the role of information and technology in the development of civilization. Literature of the subject provides different interpretations of the information society term. For the purpose of the research it is assumed that the information society is some society whose development is largely determined by utilization of information and knowledge and by diversified information and communications technologies (ICT). It is believed that in case of the information society, information is a fundamental resource and the national income generating source.

So, ICTs play the role of an enabler of development in several respects, cross-sector productivity and economic growth, specific social development goals and political participation and good governance, taking the society in the phase of Information society.

The World Summit for the Information Society (WSIS) is specific in its Declaration of Principles, ―Building the Information Society: a global challenge in the new Millennium. WSIS says it views ICTs as powerful instruments for productivity and economic growth through job creation and employability, leading ultimately to improved quality of life overall. The Global e-Sustainability Initiative (GeSI) considers extending the influence of ICT to all aspects of socio-economic development and applying these technologies to both rich and poor countries in order to achieve the strategic principle of sustainable development across the globe (WISIS 2012) .

Organization for Economic Cooperation and Development (OECD), notes that information infrastructures are expected to stimulate economic growth, increase productivity, create jobs, and improve on the quality of life (Gichoya 2005). The United Nations Development Program (UNDP) says, ―ICT is an increasingly powerful tool for participating in global markets; promoting political accountability; improving the delivery of basic services; and enhancing local development opportunities (http://www.undp.org/) ‖ as reported in GeSI (2008).

As a result of this discussion, it can be seen that the use of ICT is at the center of Information Society, the development of which in turn will lead in a sustainable development of the society.

2.2. IT and Sustainable Development

When we talk about the macro level, we are referring to the sustainability impact that arises out of the application of ICTs across society (Bengtsson and Agerfalk, 2011; Erdman et al., 2004; GeSI, 2005; Melville, 2011; Watson et al, 2010).

In some cases ICT is of direct benefit to the goals of sustainable development, and in others detrimental. In most cases, however, the overall effects will only become clear in the medium to long term. It is shown that despite its great potential, ICT is not in itself a force for sustainable development, but has both positive and negative effects. In order to maximize the positive effects and minimize the negative, the development and application of ICT should be guided by policy makers in government, business and civil society. (EITO 2002)

Economic efficiency is supported by ICTs since have considerable potential to cut administrative costs through the reorganization of internal administration and through alternative provision of services. The electronic availability of public information can be of major assistance to small and medium-sized enterprises (SMEs) in administrative procedures for export, import and business opportunities.

ICTs can constitute tools for *social development* like citizen involvement, soliciting feedback, and promoting private sector partnerships in development and testing of delivery mechanisms (Tang 1997). Different ICT applications have the potential to improve the quality of life for citizens also in developing countries, where a particular focus is on the areas of basic human needs (health, education, water, food).

A study claims that ICT diffusion accounts for up to 90 percent of the increase in the Human Development Index (HDI) observed in some nations. It is clear that ICTs have an important role to play in fighting poverty and in achieving the MDGs . The use of ICTs for educational purposes has been described as a paradigm shift in education owing to the focus on learning, rather than on teaching, the latter being a model, which concentrated on the teachers and their knowledge. Instead, emphasis on the learner means that they can devise a `personal learning action plan' (Bargellini 1997) to tailor knowledge and training to their own pace and style.

Environment conservation initiatives in all parts of the world greatly benefit from the networking and information exchange facilitates enabled by the use of ICTs in their aim to encourage compliance with environment clean-up and pollution prevention. The Sustainable Development Networking Program (SDNP) was established in 1989 to facilitate information exchange between users and suppliers of information in developing countries. Expectations are high that progressive innovation in information and communication technologies (ICTs) can be harnessed to sustainable development and, specifically, to environmental sustainability, goals. In the environmental domain, ICTs can foster sustainable development by enabling better resource and energy use and by dematerializing transactions (GeSI, 2008a; Harter et al., 2010).

A framework that summarizes the impacts and opportunities of ICT and sustainability has not been yet conceptualized by the research to date. Without such a framework, determining how to maximize the potential opportunities and minimize the negative impacts of ICT and sustainable development is problematic.

2.3. IT Sector and Sustainability

While it is clearly in their *application* that ICTs hold the greatest potential for economic and social development, many governments are actively seeking to spur domestic economic growth by nurturing the emergence of local ICT *industries*. A new market emerged and is growing very fast. This is hardly surprising, as the remarkable expansion of the ICT marketplace in recent years has generated millions of new jobs and billions in additional tax revenues, growth that has benefited nearly every region of the world. Many developing countries also perceive domestic ICT industry growth as an effective means to achieve related development objectives, including to attract foreign direct investment, provide a basis for technology transfer, satisfy local market demand for ICTs, and generate further growth in upstream and downstream industries (such as marketing or financial services).

There is a need for the ICT sector to drive energy and resource efficiency in its products and services to reduce the direct impact of ICT on the environment in areas such as material usage, manufacturing processes, supply chain transportation, product usage efficiency and end-of-life considerations.

At present a great deal of the research focuses on the impacts and opportunities created by the existence of ICT and the industry’s processes and procedures. These include the design, manufacture, operation and disposal of ICT. However, there is a great deal more to ICT than direct impacts alone. Some of the most important impacts come from how these technologies are applied.

There are, however, additional risks and complexities involved. Developing countries are a long way away, with different standards and different commercial and cultural realities. Quality control, traceability and accountability can be difficult to maintain in extended supply chains.

3. Methodology

After a thorough examination of literature review, the aim is to illustrate how the concepts of Information society, and ICT sector relate to sustainable development. The methodology, for this aim, includes two steps: analyzing secondary data about Information society and ICT market development in Albania, analyzing questionnaires directed to ICT market firms about the most important factors that are affecting today the development of ICT sector.

First of all, the necessary indicators for the Information society are analyzed. The Organization for Economic Cooperation and Development (OECD) started developing statistical standards for information society measurement about 10 years ago, through its Working Party on Indicators for the Information Society (WPIIS), which provided statistical standards for measuring IS through discussion with experts in the following areas WPIIS main achievements to date are:

- Industry-based definitions of the *ICT* sector and *content and media* sector
- An ICT goods and an ICT services classification (based on the Harmonized System and CPC
- Narrow and broad definitions of electronic commerce transactions; and
- Model surveys of ICT use by businesses and households/individuals.

An important distinction when considering ICT indicator is the one between access, usage and impact.

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.

This is the level at which ICT indicators link to sustainable development, to focus only on the ICT sector development as part of its impact on information society and its measurement.

Another important indicator developed by ITU is the ICT Development Index (IDI), which is based on several indicators that are considered essential in terms of measuring ICT developments and Information society. The sub-indices on which the IDI is based further provide policy makers with the opportunity to identify strengths and weaknesses and to adapt and develop policies accordingly.

According to ITU (ITU 2009), ICT development process and a countries transformation to become an information society, can be depicted using the following three stage model:

1. *ICT readiness reflecting the level of infrastructure and access (Access sub index*
2. *ICT intensity reflecting ICT use in the society (Use sub index)*
3. *ICT impact reflecting the impact/outcome of Efficiently and Effectively ICT (Skills sub –index)*

The data about IDI in Albania and a comparison with world average data is given in the section 4. Than, according to the areas that IDI indicates, the questionnaire is directed to 50 managers of ICT firms in the country to identify most problematic areas in development of ICT sector and Information society in relation to sustainable development.

4. Albania as a Case Study for IT Market and Sustainability

In the industrialized countries, there is a rapidly growing literature on the potential of innovative ICT applications and on the organizational, social, political, and economic conditions that are likely to support their ejective use. This literature is playing an important role in generating interest in the ICT revolution. It is helping to bring representatives of the policy, supplier, and user communities together to discuss policy issues and to seek new ways of capturing the potential social and economic benefits of ICTs.

In the developing countries, there is also a growing literature but it is more fragmented, and often restricted to sector applications or to country specific interests. It is difficult for decision-makers in developing countries to access systematic information about the potential applications that are being developed and implemented and to consider how they could be applied to meet their own development needs. For these reasons and others related to the conditions and development of information infrastructures in developing countries, measurements are difficult to achieve. The situation of Albania will be the illustrative case. Even there is not yet any overall measurement of information society in Albania, development of information society or e-government in Albania has been part of the reports and studies done in global level by ITU, UN or other regional surveys. In national level there are some surveys done recently linked with e-government services, such as surveys done by Institute for Development Research and Alternatives (IDRA) on specific services such as e-taxes, e- procurement or licensing center. There are also different statistical report published by AKEP (Agency for Electronic and Postal Communications), but they include mostly telecommunication indicators, access and connectivity figures. There are some presentations done by National Agency for Information Society (NAIS), on e-government development as service offered, but there is not any overall measurement done considering usage of e-services, the way or reason of their usage etc. there are some indicators related with ICT included on the enterprisers survey done by INSTAT, but not any specific survey focused only on information society. Based on the figures, published on surveys and reports of UN and ITU we will give below the situation of Albania regarding IDI index during the years. As it was mentioned above, ITU has developed for some years IDI Index of ICT Development in order to assess the development of information society.

The following table 1 provides the IDI index for Albania compared to the World IDI average over time. According to ITU "Measurement of information society 2013" Sweden ranks in the second place, being the most developed country in Europe. The Republic of Korea is in the top of the list (ITU 2013).

Table 1. Albania IDI and sub-indexes, comparison with world avg data

	2002		**2007**		**2008**		**2010**		**2011**	
	World Avg	**Albania**	**World Avg**	**Albania**	**World Avg**	**Albania**	**World Avg**	**Albania**	**World Avg**	**Albania**
IDI	2.48	1.92	3.4	2.73	3.6	2.99	3.94	3.61	4.15	3.79
Access sub index	2.68	1.87	3.91	2.83	4.05	3.05	4.53	3.32	4.46	3.59
Usage sub index	0.54	0.01	1.43	0.63	1.75	0.91	2.16	1.69	2.47	2.17
Skills sub index	5.95	5.82	6.31	6.69	6.49	7.04	6.5	7.38	6.51	7.38

Source: ITU data

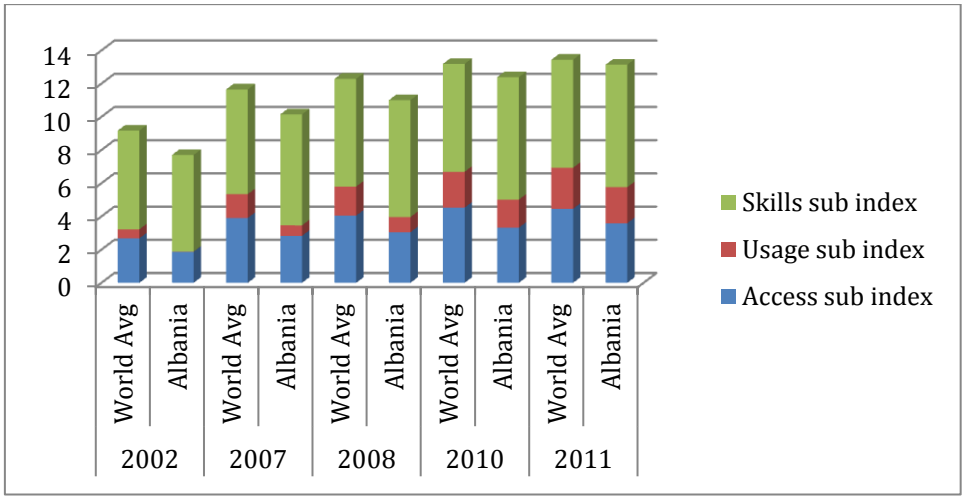

Figure 1

As the table 1 and figure 1 show, Albania is below the World average of the IDI index, but also show a progress in the Information Society development since the IDI values have increased in the last 10 years. This progress is done more on the usage sub-index, and less on the skills sub-index., as shown in tale 2. The data show a big increase of 62 times, in the usage sub index for the years 2002-2007, since ICT use was scarce in the first years of economic development in Albania. The country came from a situation of economic and political problems in the first decade of market economy 1990-2000, because of the problems of the former socialist regime. The use of ICTs began after the 2000 and this is the reason of such increase till 2007. Even in the next years (2007-2011) the usage sub-index shows a raise more than the other components. So, the development of Information society depends more on the usage component, while access component is developed in a lower extend, but the lowest developed is the skills component.

Table 2 Raise in IDI and its components according of figures of ITU

Years	2002-2007	2007-2011
IDI	0.42	0.28
Access	0.51	0.21
Usage	62.00	0.71
Skills	0.15	0.09

The focus on ICT usage and access, on the other hand may raise the question about the positive or negative impact of usage of ICT on the environment and the economy.

4.1 Impact of IT Companies in Sustainable Development according to Questionnaire Results

The questionnaire showed some results about the most important aspects that ICT companies that are actually offering products and services in the ICT market in Albania, that can impact the sustainable development.

The figure one shows the services offered by the different ICT service operators in the sample. It shows the nature of ICT market in Albania, which relies more on hardware trade and assistance, Internet connections and technical assistance. In fact Albania is not known for any kind of production in ICTs and the market is dominated by ICT services.

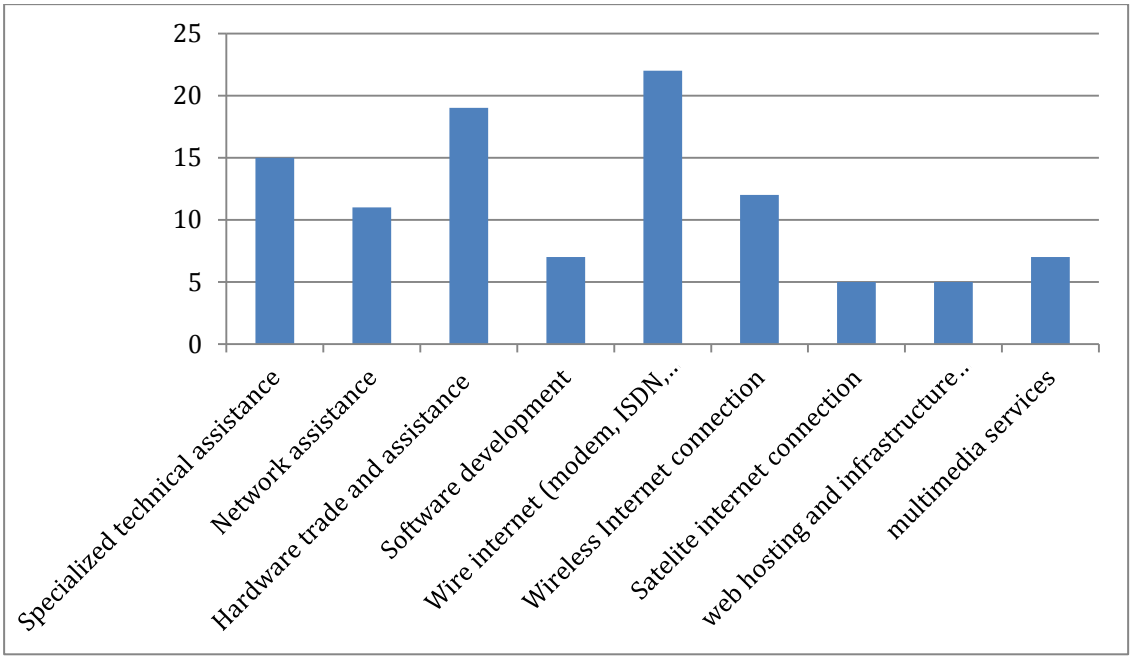

Figure 2. Type of services offered in the IT market

But the natures of companies that operate in this market are in most of the cases diversified, offering a range of products and services. So the portfolio is composed most by hardware trading that make 43% of the revenues, while 38% of them is made by Internet services. Only 25% of the revenues come from technical assistance services, offered most of the time together with ICT products. This is shown in figure 2. The figures are compiled as averages of those companies that have listed these as their main services

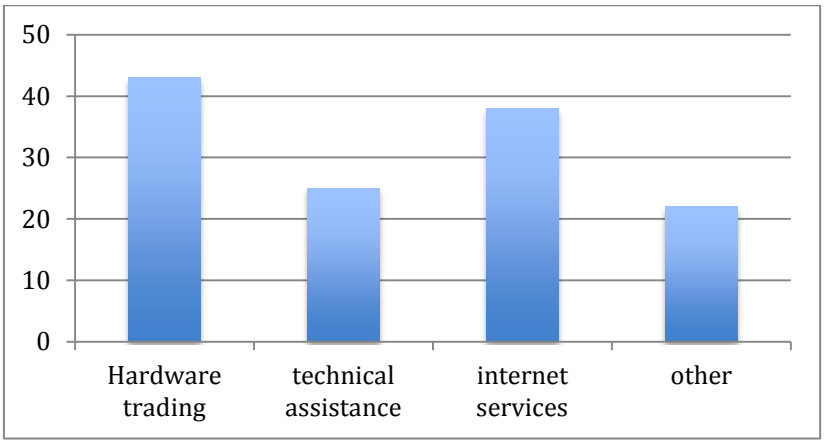

Figure 3. The weight of the product/service according to revenues in the company portfolio

The interviewed also listed the company factors that are affecting, in their perception, the sustainable development. These factors are related to their company supply in the ICT market. So, as figure 3 shows

The knowledge of the market impacts positively in the sustainable development. Modern technologies also have a positive impact, since the newest technologies are also protecting the consumer and the environment, dealing with more efficient operations. Related to the investment that must be done not only for supplying the product and service, but also for taking the appropriate measures related to sustainable development, the third factor is ranked the financial budget and investment. The know-

how of IT staff is also considered, but in a very low level of impact, while other factors listed in the questionnaires are the application of technologies by the customers and the legislation about the process requirements in the sector.

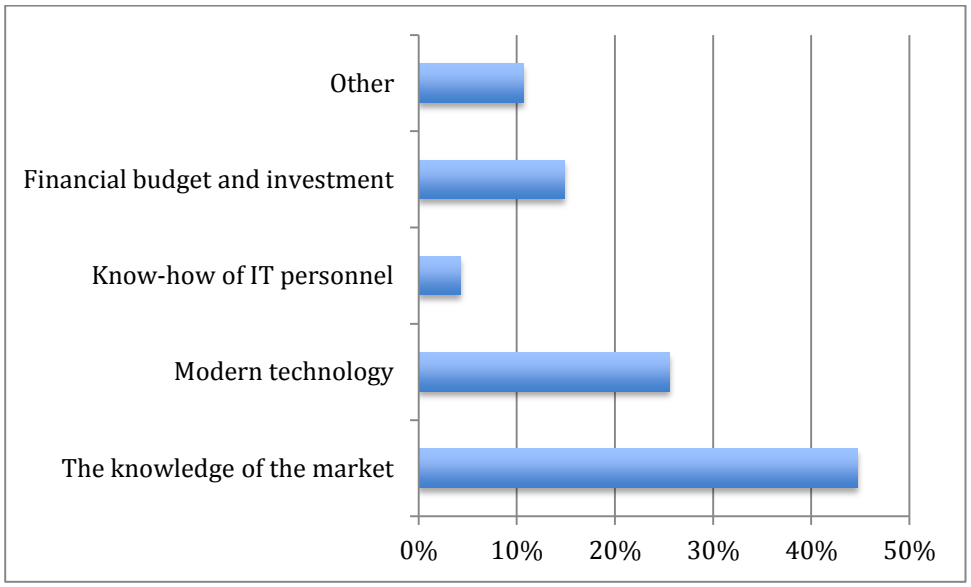

Figure 4. Factors that are positively affecting sustainable development

On the other hand, 45% of interviewed have mentioned the unfair competition as an element that risks the sustainable development. It is most probably related to problems in developing countries, where unfair competition is more present because of their stage of development, especially in new sectors such as ICT. According to their explanations, unfair competition causes problems with costs and prices, leading so in the inability to focus on sustainability issues for those companies that are willing to do so.

Financing and new technologies are also listed as factors that may cause possible risks, probably for the lack of knowledge for dealing with new technologies and the lack of budgeting. Other factors such as legislation, communication and energy are less mentioned.

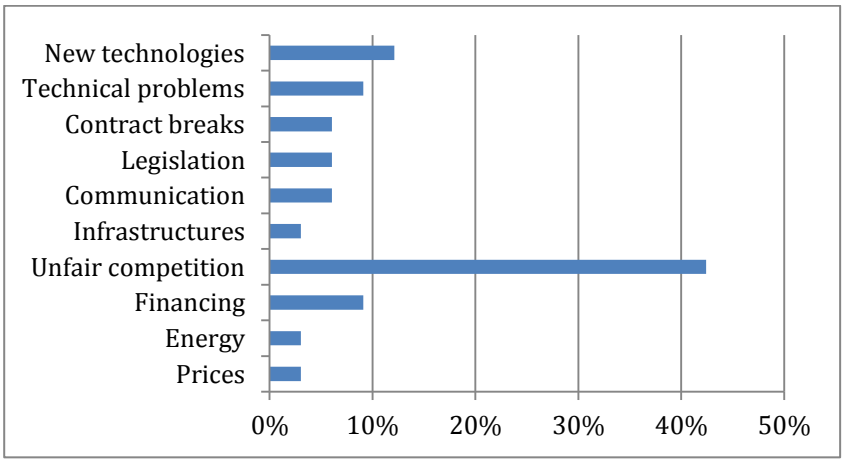

Figure 5. Perceptions of Risk of negative effects of ICTs

6. Conclusions and Future Research

It is widely accepted nowadays that ICTs play the role of an enabler of development in several respects, cross-sector productivity and economic growth, specific social development goals and political participation and good governance, taking the society in the phase of Information society. It is a new phase in which society depends mostly on the information spread and utilization. But the overall goal of the society nowadays are linking more with the sustainable development concept, since the need for not compromising future developments. ICT s and Information infrastructures are impacting positively in sustainable development through stimulating economic growth, increasing productivity, creating new jobs, and improving the quality of life for the citizens.

Even though, ICTs are of direct benefit to the goals of sustainable development, in other cases they are detrimental. It's the medium and the long term which will show The overall effects will only become clear in the medium to long term. It is shown that despite its great potential, ICT is not in itself a force for sustainable development, but has both positive and negative effects. These effects can be identified first of all in the new emerged market of ICT product and services, which development contributes in the Information Society Development. The development of ICT market is considered to be important for the information use and management especially in developing countries. But the implementation of the right policies to benefit from ICT market development in the light of the sustainable development and Information society, depends on many factors.

Albanian ICT market, as a case study in consideration, has been studied to gather information about the phase in which the Information society development is. Indicators show that Albania has done a lot of progress in areas such as usage of ICTs, but has done less in developing the right skills about the usage. The access component of the Information society is moderately developed. The point of view of Company managers and/or owners is reflected in this research as one of the important aspects to be taken in consideration by the right policies that should be undertaken to ensure sustainable development through ICTs. The factors that are listed in response to this research are divided into two groups, those with positive effects and those with negative effects. The better knowledge of the market and the newer technologies used contribute to positive effects on sustainable development according to specialists in ICT market. While, problems may be caused by such factors as unfair competition, technical problems, financing etc. Still remains the question about a possible relationship between the phase of development of a country, its Information society development phase and its sustainable development focus on one hand, and the most important positive and negative effects as perceived by the ICT actors in the market. A more in depth research must consider also the users consideration about the use of ICTs and sustainable development.

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