THE STRATEGY OF ICT ON ECONOMIC DEVELOPMENT

Ali Reza Shahraki
Department of Industrial Engineering, University of Sistan and Baluchestan, Zahedan, Iran
shahrakiar@hamoon.usb.ac.ir, ph: +989155412783.

Mozhgan Mohammadi
Department of Industrial Engineering, University of Sistan and Baluchestan, Zahedan, Iran
mozhgan.mohammadi@gmail.com

Abstract: In spite of the experience of industrial countries, information and communication technology (ICT) in developing countries can be a major important factor for fast and quick access of these countries to the higher levels of development. For the reason that developing economies do not act at optimized and effective conditions, so the introduction of ICT in such economies provides potential in grant authority to these economies to go through the steps of development more quickly. In present article, the internal use strategy of ICT is compared with export of productions and services of technology (as a resource of exchange-bringing to the countries) that which one of these technologies has the more importance in economical development of countries specially developing countries and Iran.

Key word: ICT, strategy of ICT, economical development

1. Introduction

The major changes during history that are remembered under the title of 'wave' can be divided to four ages or waves.
The first wave: the age of agriculture
The second wave: the age of industry
The third wave: the age of IT
The fourth wave: the age of figurative ICT: the third wave foundational change in world

After investment of countries and the speed of ICT development, human understand new necessity and it was nothing except access to information and acknowledge. The aim of third wave has been the access to information and acknowledge by the use of ICT tools such as computer, different local networks and internet, simultaneous with development of required softwares and hardware of the age of information. The age of third wave that is called the age of acknowledge and also sometimes is called information society, is approximately 50-year old. Thus as it is mentioned, necessity of change from one section to the other section and from one wave to the next wave has been purposeful and its longevity has depended on the speed of acquisition of that wave’s aims. As an example the third wave came into existence when that with industry development in the second wave, it was necessary to transmit more information from one place to other place and human had more necessity to acknowledge and so production, distribution and use of information settled as the axis for this change and internet and computer were used for this services that its development is go to ahead[7]. With attention to the speed of importance and high speed of development of the third wave, some of scientists thought that this major change will remain for long years but the extraneous growth of technology and the presence of new technologies such as infotechnology (ICT), nanotechnology, biotechnology and human ability in absolute domination on atom caused that this step goes quickly ahead and new expectations were being formed. The change in the field of ICT has been effective at the degree that somebody interprets the current age as information and communication age and interprets these changes to informational revolution [2]. The informational revolution has led to creation of unprecedented and modern methods in productions, scanning and transmission of information and also has led to economical development of countries. These new methods and strategy
has faced with more demands on the behalf of companies and business organizations, because these methods and strategy has led to increase in efficiency, optimization, effectiveness and increase in the speed of to establishment of command reduction in expense and in the modern competition era will bring many computational benefits for them. Investigations show that in 1965 IT has allocated 5 percent of investment expenses of companies to itself. In 1980 decade this number increases to 15 percent. At the first decade of 1990 the investment expenses of IT of companies increase to 20% and at the end of 1990s reached to 50 percent of total investment expenses of companies. The spread of ICT in developed countries has led to increase in efficiency of economies in these countries and since 1990s development and optimization of economies of developed countries is the result of spread of ICT in these countries. Contrary to the experience of industrial countries, information and communication technology (ICT) in developing countries can be a major important cause in order to emergent access of these countries to higher strategy of development [3]. For the reason that developing economies do not act at optimized and effective conditions, so the introduction of ICT in such economies provides potential in grant authority to these economies to go through the steps of development more quickly. In present article, the strategy of internal use of ICT are compared with export of productions and services of technology (as a resource of exchange-bringing to the countries) that which of these technology have the more importance in economical development of countries specially developing countries and Iran.

2. Exploitation in developing countries
Until now no one answered clearly to this question that how much required degree of ICT is enough in our countries? In times past industrial countries were not developed and certainly their pass from different steps of development has not conducted through ICT programs and aids. Even some of researchers has overreach themselves and believe that in industrial countries ICT has not important role on the increase in exploitation of these countries[6]. Solo for the first time, stated such contradiction seasonings, he says that 'you can see the growth of computer in all place, but exploitation data do not indicate such growth from themselves [5].

These contradictions are confirmed through different ways, one of them is that because developed economies are the economies that act in efficient conditions, so the introduction of ICT in these economies may be just have one marginal effect, i.e., if the introduction of each productions and services unit of ICT can affect the internal gross productions of these countries, but these effects will not be widespread increase [4].

Contrary to the experience of industrial countries, information and communication technology (ICT) in developing countries can be a major important cause in order to emergent access of these countries to higher strategy of development. For the reason that developing economies do not act at optimized and effective conditions, so the introduction of ICT in such economies provides potential in grant authority to these economies to go through the steps of development more quickly. In present article, the strategy of internal use of ICT are compared with export of productions and services of technology (as a resource of exchange-bringing to the countries) that which of these technology have the more importance in economical development of countries specially developing countries and Iran.

3. Information and communication technology in developing countries
Today ICT plays important role on economical growth and development of all developing countries. different strategy has been brought up that what that districts
developing countries from each other is the type of selective strategy for this reason different politics has been brought up for gaining economical development in these countries[1]. Although some of developing countries have focused on strategy of export because this politics increase the exchange –brining of countries but many of researchers believe that the strategy of export is not desired and it cannot be suitable in economical growth and development of countries.because in this policies, internal economy becomes stagnant and the interest and possibility of production section of countries is destroyed that this uninteresting leads to stagnant and ruining the internal economy of countries and just helps to spread of special section (foreign section) and destroy the possibility of all side development of economy of the countries but if ICT will be internal, its effect on total economy is more than the precedent strategy and it can be as a motivation for economical development[10]. in growth strategy, the export of ICT is generally done in the case of productions, and services for purpose markets and it is in monopoly of some countries and all countries have not this technology and limited section has this ability and there is no possibility if entrance to the markets for many of developing countries and these countries can benefit from these productions with low expense and by using of them, these countries cause effect the internal economy, economical growth and development[9].

- The spread of digital section when the export section of ICT is spread. Although exchange–brining resources are increase, but this issue does not affect all of economy, rather it is limited to a special section. But if the internal use of ICT is spread, it will develop digital section and human investments of the countries and it will lead to growth and development of the whole economy [8].
- Constant economical growth: economical development is happened when the base of economical activities of countries are spread considerably. The growth of productions and services of ICT can just produce 'knowledge-use goods' in a special section. In general these productions have not been aimed for internal markets; perhaps they are for ext markets. But in the literature of economical growth and development is not just focused on the growth of markets of course it is extensively focused on the important of investments. It is clear that if productions and services of ICT affect the economy and population of the inside of the countries, this issue, itself, can also strengthen the economical growth of forign section and leads to more effectiveness of economy. Because the internal use of ICT will effect extensively the human investments. On the other hand, models of growth in concord with technology showed that the spread of ICT will lead to more economical growth [11].
- Secondly the internal spread of ICT will change the part of demanding of economy, because the increase of internal demands of productions and services of this technology will lead to spread of internal productions of ICT and knowledge-use goods and this issue leads to spread of precedent and ongoing communication between the section of productions and services that all of these points to the important of internal productions and services of this technology , that toward the growth strategy of export of productions and services of ICT is more economical[18].
After the Second World War and from 1950s, the difficulty of more developing countries was that they go through the steps of economical development like industrial countries. For this issue, different strategy was brought up like the strategy of spread of export, the strategy of replacement of imports and other strategy. One of these strategies was called 'industrialization as a result of the spread of agriculture demands that from pioneers of this strategy can mention to Irma Adelman (1984). He resulted that reduction of the expense of technology change caused the increase in exploitation and this increase the income of rural people. The increase of income of rural people leads to increase in demands of industrial demands that this fact also helps to the increase of wages on industry section. Finally the consumption of goods of agriculture section will be increased and leads to the increase of income in agriculture section. Therefore, change in technology would lead to a cyclic boost of productivity in the agriculture and industry sections and subsequently the whole economy [13]. Also increase in wages in industry section causes a labor force shift from agriculture to industry, thus the required workforce of industry section would be provided which subsequently enhances the industrialization process of economy [20].

By which document and evidences can we represent the effect of information technology and communication on economical development? Most of us believe that the technology of information and communication has an influence on economical development of our country. According to one report of United Nations, modern technologies have changed some of the economical sections of countries. However, this report does not represent the evidence of it exactly. So, in this report it is emphasized that « The governments of the world’s countries have to adopt national strategy for utilizing technologies such as communication and information technology , so that these countries can utilize these technologies extremely and in this case they can bring down it’s consequence risks to the least possible extent. In recent years, the effect of communication and information technology on industrial countries and especially on developing countries such as southern Korea and Singapore has been clarified[15]. But other developing countries which have not provided substantial investment toward this technology, so, they have not gained it’s benefits. What is their duty in this case? Most of the economists divide the countries into two categories poor and rich, by making use of income and wealth factors. Nowadays in this classification there is also another third factor which is used as information.so, the countries which have less information, will be replaced in the lower rank in comparison to other countries. As a result, developing countries, require formulation of one national communication and information technology strategy, to encourage usage of modern technologies in this regard, to benefit its blessing for the economical growth and development[16].

The question is that, to what extent, communication and information technology in developing countries, affects economical growth and development of these countries. The primary answer is that, this effect depends on the state of relationship between transportation and economical growth of developing countries. If the transportation and relocation has positive effect on economical growth of these countries, development of information and communication technology would definitely have positive effect on economical growth of these countries. In developing countries, investment toward transportation and relocation is an optional task. However, concerning to the conditions of these countries, investing toward communication and information technology is considered as essential task. It is important to point out that, investing
toward communication and information technology is essential. Because firstly the existence of this technology improves the performances of the market[17], and also this technology affects all of the categories which are available at markets such as determining the type of production, the quality of production, the extent of commodity sale and service and locations of it’s sale directly or indirectly. The second positive effect of communication and information technology is concerning with education development. When the majority of the people in society are illiterate, many sources will be required for educating them. By this investing, few sources will have left for other programs of the country [12]. The communication and information technology brings about hopefulness in these societies that, also with the limit sources we can cover large scale of people in our educational programs therefore we can deliver sources to other development programs. On the other hand, economists of development believe that the resistance of poverty in one society is due to gap between commodities and Ideas [19]. The existed gap of commodities is due to lack of physical sources in society level. Therefore, when the accumulation of capital is less in a society, or when there is not enough backgrounds available in society, we will have commodity gap. The gap of ideas is generally caused by the lack of knowledge in society, and communication and information technology gives glad tidings, reliable hopefulness for lessening of this gap. Therefore, this technology would bring about hopefulness for lessening of poverty in those poor societies [14].

5. The communication and information technology in India
Among developing countries, India’s story is different. This country has sensible success in exporting products and communication and information technology services in the world. So that, India’s export in this industry has amounted from 150 millions in 1990 to 5/7 billion in 1999, that it indicates approximately seventeen times as much. It’s expected this figure will have amounted to 50 billion by 2008. Export of communication and information technology of India forms about 30 percent of total export and about 7/5 percent of gross domestic product of that country. In 1998, about 180000 people were working in this industry, and it is planned that, this figure will have amounted to 202 million by 2008, and it will form about 8 percent of formal employment of India.

The experience of India indicates that general policies about communication and information technology have significant importance that by presenting required education in this field and investing toward substructures (specially in the field of high speed communication, international highways, sufficient width of lanes and …) India’s position in worldwide economics has become fixed. This matter in long-term, will lead to human development and well-balanced growth of economics. However, the important point which has to be observed here, is that, what policy should other developing countries follow in the field of communication and information technology so that the economics of these countries, benefit more from these policies [21]. According to presented documents, internal usage strategy of communication and information technology can have more influence on the economics of these countries.

6. Conclusion
In the fore-mentioned section, we considered that India is a successful pattern in relation with strategy of developing products’ export and services of communication and information technology and this strategy has many positive effects on economical growth of this country yearly. According to
documents, it has shown that developing countries will be able to pass stages of economical development easily, by choosing strategy of internal usage of this industry. It means, by developing, communication, information technology in the country, all people in the society will have access to modern technologies, and this strategy will develop modern technologies with maximum profit in the society. Internal usage of these technologies, which, is linked with communication and information technology, increases human capital supply in the country, which becomes important factor in economical growth and development of these countries and finally these processes will lead to development of export of products and services of this technology. By considering the fore-mentioned issues, adoption of one strategy concerning communication and information technology in big countries is different from adoption of one strategy in small countries. in the case of big countries, in which, transportation has too much influence on economical growth, the adoption of strategy of internal usage of this technology can have more influence on economical growth and development in comparison with strategy of developing export of products and services of communication and information technology. Adoption of such strategy, will stable this industry in the society and economics will be protected against external shocks. However, small countries in which, development of economical activities has no great importance can benefit more, by adoption of policies which develop export of products and communication and information technology services. Therefore, the governments of developing countries should adopt a national strategy for developing communication and information technology of their country. Among these strategies, the strategy of internal usage of communication and information technology would be the best

and most influential strategy for big countries, particularly our country.

References


