The investigation of the relation between Information & Communication Technology (ICT) and Constant Development

Saeed Ramezani\(^1\) and Mostafa Emami\(^2\)

\(^1\)Business Administration, Payam Noor University, Tehran, Iran.
\(^2\)Young Researchers Club, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran.

ABSTRACT

Recently, Information and Communications Technology has played an important role in different aspects of human life. In particular, since mid-1990s ICT has increased Total Factor Productivity (TFP) in many countries of the world. ICT through capital deepening has the feature of the so-called knowledge commodity and can increase the factors productivity in the economy [1]. The world in 21st Century is a world full of Competition development of markets, appearance and Circulation of superior technology and extension of Commerce. Condition for Success on this area is Profit of opportunities and Pacify of in front of challenges and these necessitate that the process of Social–Economic development with Strategic approach to definition of international new Condition and recognition Changes in Composition and relations procedure of economic, political, global and regional issues and also with an attitude towards the most important subjects and problems of national economy, rout of performance of technological–structural Changes and responsibility to necessities of Constant growing and development, Smooth the economy of Country away. Since the good of development is empower so con stat development is a development which focus on continuance development of peoples request and satisfaction with increasing of quality of human's life. Deny and threaten the ability of next generations for satisfaction of their own needs. Entering to third millennium and facing up to critical phenomena for becoming global and development of information and communication technology and using of these two phenomena have been Caused moving communities towards informational societies and this information technology has become the main motivation of world economy and constant development without reliance on application of ICI almost will be impossible. Mainly industry of information and Communication technology has created more revolution in human's life at new term than mechanics in industrial revolution period and this industry has wonderfully affected both private and social life. In this essay is attempted mean while defining development and Constant development is considered to information and communication technology for achieving constant development with a look at twenty years vision of Iran.

Introduction

Recent developments in IT have heightened the peoples' demands. In this article, at the first some basic fundamental of requirement social net work, and also all the available facilities at present that need social networks are described. Initiation social networks on the internet were WWW.Classmates.com in 1995, WW.Sixdegrees.com in1997 and then WWW.Myspace.com in2004, transformed from a virtual storage space to a social network website [1].

The impact of ICT on economic entities activities remains an important scientific problem theoretically, practically and politically. The assessment of results of ICT development and implementation is important in many aspects, i.e. local, regional, national, European and global. ICT development accelerates integration and conditions many processes such as e-business, e-commerce, e-health, e-learning, e-government, e-inclusion, etc. In this article, Several ICT innovations are discussed in relations to providing good customer services by both types of organizations: brick and mortar as well as online businesses [2].

The word has seen the main changes in technology and economy–social development sciences in our country in recent half century. The world changes and constant development in based of knowledge and management development can extend extremely competition in the world changes. Thus, it is clear, the necessary of attention to social substructures and compiling the systems of society and development in various dimensions [3]. Therefore, the study and considering of the world changes and 21 century's challenges in science and technology areas can establish the administrative conditions of re-engineering of the scientific and technological substructures in country, the extension of new information and communication with another, access to information and the all aspects of human's life and specially in economic activities of each country [10].

It is clear, choosing strategic approach for determination of priorities and basic orientations for the future of country with international–regional changes is not only based on programs and middle–term and short–term policies. But it must be based on long–term planning, given views and the analysis of the m with far horizon according to obvious and clear aims and

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orientations. Long-term planning based on economic, social, cultural and biological principles of future, ideal society can create the conditions for the making of changes and reforms and re-regulation of national economy and the frames for the designing and accomplishment of middle-term and short-term programs. This subject only proves by using of new instruments and technology and information and communication technology has the main role in this direction [13].

Communication technology is a kind of technologies that the all of internal and external activities operate by using of informational elements and factors, therefore, the all of forming technologies can have its own analogous informational form [22].

Information and communication technology like its name is limit of technology which is based on new communication improvements. These two terms use each other because of new strong affiliation of these two technologies and their remarkable influences on international economic area [25].

By attention to this role, Information in Informational technology becomes more important and becomes clear the concentration point of Informational technologies from other elements of Informational technology and Informational—technical knowledge. We live in age of Informational technology and knowledge and early we will enter to the fourth wave i.e. the virtual world. In this world, the all of economic, social, cultural and political affairs will be differ from today world's conditions [22].

The management of planning in the age of knowledge and virtual area has its own special complexity and differ totally from the traditional planning methods, based on people and limited information. This traditional planning in world's countries is changing by entering to third millennium and using of new instruments and methods has situated in the instruction of the world's planners [16].

In new age, the major managers of country must use of the skills, expertise and general knowledge of the society in basic planning, effectively and by using of informational technology instruments benefit from the useful experiences of the advanced countries and Iranian experts out of country. Unfortunately, there are not necessary conditions and mechanism for using of the wide information mass and global experiences in our country and isn't used from this global free capital. If this methods use experimentally in the development of country's planning and for special cases can create important influences in the future and environment full of hope and happiness [20].

New conditions of the world and knowledge age and complexity of major planning because of rapid changes in a lot of main parameters of planning need to the new methods for managing of major and development planning of country because traditional methods of planning are not usable. Tomorrow world will be virtual world that unfortunately. Not only our country but also some of extended countries are unable to understand that [15].

The concept of development

Let's review the concept of development before considering the concept of constant development. Maybe, you had heard this phrase that "Society is changing because people would like to change". Strict consideration of this term shows that at the first, the change is the desire of people and is not any changes without their desire. Second, people who would like changes want changes with development from their government not any changes. Hence, we must clarify what the concept of development is. The world of development and its root refers to a process which can observe its natural flow. In this century, there is a thought that human is able for creating regular and continuance changes in a desirable way in his own life [14]. The root of this thought must be finding in industrial culture of the west because they believe, improvement is practical. Primarily, the thought of improvement has been stated for access to development. The vast usage of this thought can be seen in most of independent societies which try to make better biological conditions for their people in the past three decade. Briefly, the aim of development is empower [24].

The concept of constant development

Constant development has many definitions, focus on continuance providing of needs and satisfaction of people with increasing the quality of human's life. Constant development in general concept emphasizes on main issues such as, the control of health, proper technology, providing pure water, independence for providing health food and shelter for all people and also focuses on important of human's creativities, innovations and inventions [5].

Also, it has been stated development means growing economic–social changes and the aim of constant development doesn't prevent for development or delays its process. But it means dynamic and purposive development according future vision. Indeed, the constant development is development doesn't limit the ability of future generations for fulfilling their needs [16].

Global commission of environment and development defined the constant development in report of "Our common future" in the year 1989. According to it, constant development fulfills current needs without threaten and renouncing the ability of next generations for supplying their needs. Therefore, constant development is a path or aspect of development and according to commission; it causes to protect human improvement in all of the world and far future not only in some places and for some years [24].

Constant development states we must use our forces and even native technologies, information and cultural structures and proper parts of classical finding and joint them with postmodern instructions and finding [22].

Concerning to given definitions, constant development must fulfill the current needs of present generation and provide the conditions for supplying human's future needs. When a society provides initial needs of people can access to constant development. Also it must specify the fields for future correct planning and use of essential instruments and mechanism for implementing this planning [3].

Experiences of current two decade of 20 century show the basic evolution in the concept of development and its status clarifies in the pattern of constant development. There are some components for access to constant development and briefly have been shown in below figure.
Figure 1: The process of access to the components of constant development [2]

As you see in figure 1, constant development consists of between economic, social, political and environmental dimensions in regional and international levels. Hence, because of existence of these factors, the orientations of national development must be regional and global with attention to general, external and future conditions [7].

Today, the planning of processes is not based on this subject, how balance changes to imbalance but it is based on this matter, how the simultaneous processes of balance and imbalance handle. In these conditions, there are three kinds of looks to future.

First: passive look, second: active look and third: futurist look. It's necessary for active and futurist looks, notice to the management of vision which means, the understanding status quo and its factors, analysis of national and international environment and finally recognition of ideal vision. When there is an ideal vision, personal and social actions conduct to make future and it can reduce undesirable outcomes of crisis [18].

Iran is placed on sensitive and strategic area in the world and possesses a lot of personal and natural resources for recognition of its own future vision. Thus, it has most of various alternatives and choices and naturally each of them follow different challenges. Iran will meet two basic challenges in next year. Country must make job and earnings and generative activities for young population and applicant of job by the constant and continuance growth. On the other hand, it is necessary the reducing of made distance between Iran and most of forward and industrial countries (and even most of neighbor countries) as soon as possible because of rising of regional and international situation of Iran [11].

Using of opportunities and confrontation with current likely threats in following challenges is necessary for taking strategies which can advance society and economy of Iran in the smooth path in direction of achievement to ideal goals of country in the horizon of vision according to below basic axles. These ales are challenges which country will meet them in future and they will transform to the basic threats in all aspects of economic, social, cultural and political if they don't have correct and proper management. These axles consists of

- Constant and continuance growth
- Development based of wisdom
- Active communication with global economy
- Competition in economy
- Personal security and social justice
- National security
- Rising of life's quality
- Environment and constant development
- Cultural development
- Development of public management
- Security and judicial development
- Regional equation and balance of country based on preparation of region's standards [5].

By attention to these basic axles, for making structures and various social and economic functions of country and expanding of society can expect long – term vision of Iran names with global approach in horizon of "national constant development" in the year 2015.

The importance of information technology

Information and communication technology is one of the important factors of improvement in 21 century. Information and communication technology will make changes in life, work and educational methods. ICT is a product of using of computer and transmission in information area and joints the entire world to information area after industrial revolution in 19 century. ICT is a means for development of economy and the world moves rapidly toward information - oriented or wisdom - oriented society with this technology. Globules become possible with this technology and countries try to achieve the proper position in global competition area [15].

By introduction of computer, a drastic change took companies' ICT investment costs increased to 20%. Place in information transfer and marketing. In fact, use of this amount in late 1990 increased to 50% of companies' computer can be regarded as the third huge development total investment costs and this course indicates after birth of writing and invention of printing. During increasing importance of ICT in companies' business, several last years, IT fast growth and following it Robert Solow, receiver of the Nobel Prize of 1987, has very development of communication networks have brought well explained the main role of ICT and its impact on about significant changes in every single aspect of human economic growth. According to Solow's model, four fifth lives, Today, every where it is talked about ICT, digital era, of each worker's production in the US is obtained from computer, mobile and satellite and electronic era. Internet ICT. In addition, the proposed productivity paradox by as one of the ITC manifestations, before being considered Solow [1] suggesting that "we see computer ever where as an information supply source, is regarded a pervasive except in statistics of productivity", prepared the medium in which the whole world is present. Great departure point in comprehensive studies and researches developments such as use of computer, mobile, Internet on impact of ICT on productivity. ICT impact on and websites from second half of the 1990s prepared the productivity has been among the discussed issues in grounds for "information and communication revolution" economics from 1990s on. ICT affects both supply and so as emergence of this revolution has differentiated the demand sides; on the demand side, through utility present era from other periods. In the mid 19 century, function on consumer's th economic behavior and on the railway was considered the newest technology and has supply side, on production function (producer behavior) changed the ways of doing business. Considering of changes and nature of information technology shows, we need to culture for the best usage of ICT and making given and systematic structures for doing works and enjoyment of its future advantages until we can reinforce this technology. Usually, productivity increases in each domain by entrance of ICT to that domain but, ICT must enter to the domains with a lot of problems for extension this technology in Iran. Most
important domains consists of; banking, economic systems, distribution of productions and services after sale channels, education and transportation [8]. Usage of this technology in some countries consists of;

India used IT industry by exports of software from eleven years ago and now, makes occupations for more than 3.2 million people.

South Korea allocates %4 of future investments to information technology.

Italy made more than one million and two hundred thousand occupations in IT industry in 2000 and finally researches and statistics show that almost %80 of new jobs in expansive societies depend to ICT and IT industries directly or indirectly [19].

Evidence shows the usage of IT is extending between expanding countries. Making change is one of IT characteristics and causes to make revolution in life, work and educational methods. The effects of ICT in educational and economic aspects consist of;

1-4) Economic aspects
1-1-4) changing of nature of market by e-commerce
2-1-4) exposure of new methods in marketing and propaganda
3-1-4) participation of international markets
4-1-5) access to global commerce
5-1-5) moving toward exports of production by more advanced technology

6-1-4) development of occupational skills and making new jobs [20].

2-4) Educational Aspects
1-2-4) access to virtual schools and universities
2-2-4) rising of education by using of E-mail
3-2-4) access to a lot of resources
4-2-4) access to new educational methods

Classrooms with teacher-oriented education have been changed to creative and innovative environment by the entrance of ICT to educational environment [19].

The role of information and communication technology in development of wisdom

Wisdom means "the use of information by receiver of information makes the store of information and skills" [9]. Also, wisdom is collection of experiences, values, existent information and systemic expertise attitudes and a framework for evaluating and using of new existent information in person's mind. Wisdom is necessary in organization both evidences, resources and methods of work, organizational processes, activities and values [12].

Generally, wisdom is basic engine for development and making capital in today world and has more important role in national development than traditional factors such as; work and capital. We can achieve proper situation in international area and increase power of competition for entering to new markets, only by internalization of knowledge, technology and wisdom in country. Growth is not only effect of wisdom-oriented development and other effects consist of; basic cultural changes in economy (work market, financial organs …) and cultural and institutions, increasing of life quality (education, health, public welfare …), decreasing of social damages, expansion cultural and scientific productions [9].

Basic components of wisdom are;

- Organic and economic motivational system
- Human capital
- Information and communication technology
- Innovation and making wisdom flow [12].

As be told, Information and communication technology is a main factor and a component of wisdom-oriented development and it is a combination of skills, knowledge, information, hardware and management in information and communication fields and finally conduces to preparation of goods and supplying of services. Information and communication technology means for production, distribution and consumption and useful and continuance usage of ICT in economic and social networks moves economy and reinforce communication and transaction of information and that is a powerful factor for making competition. Therewith, Information technology commerce is a factor for development of private part and transmission services which are dynamic parts of economy. This technology causes to obtain opportunities and new situations especially in the field of e-commerce and electronic services such as; e-government. This technology has the main role for making movement in small and medium companies and makes conditions for operation of these companies in the word of e-commerce and situations for their competitions in international levels by increasing economic abilities, expansion of activities and finally transforms them to larger companies [9].

Information and communication technology and its role in development planning

Maybe, most important place for applying of Information and communication technology is development and development planning both organization level and country level. Following the concept of Information and communication technology, it's necessary, considering of development planning according to ICT domain. Hence, we consider publication of changes layers which make by using of computerized systems for becoming clear this subject. Made changes from using of computers and computerized systems is stated in various five layers. Kinds of made changes is different in these five layers. First layer is direct applications of computerized system. This layer makes direct changes in instruments. The effect limit of these changes is local domain which uses from these systems. In other words, changes make in places where use from this system. Second layer is methods of management. This layer makes changes in ways of guidance and implementation. Third layer is engineering of systems. This layer changes structure and mechanisms. Changes in these two layers don't influence only on local domain of using of these systems, therefore, effect limit of system is whole of domain of organization. In other words, making decision and guidance about these changes connect to whole of organization.

Fourth layer is layer of principles. This layer makes change in strategies, missions, policies, structures and environmental and social major rules and makes evolution in equations of organization, too. Fifth layer is layer of concepts. This layer changes scientific theories. In other words, the effect of usage of computerized systems emerges in to changing of scientific theories in this layer. The effect limit of these changes in fourth and fifth layers is local, organizational domains and farther up, major domain of major systems and government and even farther up the government [6].

The functional limit of Information and communication technology is determined well according to especial attitude of Information and communication technology to recent two layers. When we speak about Information and communication technology, our intention isn’t only using of one unit or even an organization of computerized systems but it points to attitudes of society, government and major system. When development planning become propounded, it's necessary, using of ICT for whole of development planning. Therefore, ICT leads us for
making new basic attitude in development planning. In other words, when we speak about using of IT in first and second layers, it means using of instruments and at the most, changing of guidance and implementation ways and it leads us for buying and providing instruments and at the most making of technical substructures. When we speak about using of IT in second and third layers, it means making change in ways of guidance and implementation, structures and mechanism. Therefore, it leads us for reforming of structure. In fourth and fifth layers, we don't speak about buying and providing of instruments and making of technical substructures and even structures but would like to reform social and environmental fields and structures and rules according to scientific theories. This subject changes our attitude about development planning relative to current attitudes. Of course, this change has two aspects. First, ICT is main issue in development planning. This aspect makes challenges for development planners of country in recent years and that is initial objective in procedure of fourth development program of country. It means, fourth development program was based on ICT in initial stages but it Is forgotten at next stages. Second, for compiling of development program based on ICT, it's necessary, collection of scientific and theoretical foundations for doing this subject. In other words, it is necessary, formation of scientific theories in various fields based on information and technology. But it needs to definition of scientific system which their scientific theories have been formed based on Information and communication technology.

A scientific system is coherent collection of views, ideas and education and there is not any crack, conflict and ambiguities within. It means, we know that ICT makes conditions for new definition of various fields such as; operational, scientific and technological and linking and generalizing them to scientific theories and subjects therefore, subjects should be continued by various scientific dimensions and views and shouldn't be analyzed separately.

According to ICT, subjects are multidimensional and each dimension reflects an especial attitude in scientific and theoretical fields but whole of them have recognizable coherence and cohesion. Hence, mental and practical systems should be settled in architecture of extending system [20].

Information and communication technology and objectives of twenty vision of Iran

According to existence flow, growth rate of communication in economy of Iran is remarkable and it has high growth rate in last two decades. Statistics showed growth rate of population was %1.5, growth rate of existence telephones was %20.3 in last five years and growth rate of influence index of telephone was %14.6 in recent ten years therefore, according to current flow it has been forecasted, influence index of telephone becomes %46 in the year 2015 and will be %96.9 in the year 2015, by existence growth rate, the number of telephone will be 76.4 million line and population will be almost 78.2 million persons in the year 2015.

In this direction, with look at general objectives and major development strategies in IT unit and administrative policies for access to objectives of twenty vision of Iran, it is necessary: these objectives become division to three sections which consist of; qualitative major objectives, sectional major strategy and quantitative objectives [2].

1-7) Qualitative major objectives
1-1-7) possessing of informational society (citizen-oriented)
2-1-7) possessing of electronics government (making service and responsibility)
3-1-7) possessing of e-commerce
4-1-7) possessing of electronics health
5-1-7) possessing of electronics education
6-1-7) possessing of human resources and information technology
7-1-7) possessing of security, information and communication
8-1-7) possessing of structures of information & communication technology
2-7) Sectional major strategy
1-2-7) increasing and empowering of quality of access to information technology
2-2-7) extensive education and training of human resources
3-2-7) being up date of rules
4-2-7) using of information technology
5-2-7) promoting of monolith automation
6-2-7) attracting of participation of financial and international resources
7-2-7) attracting of customers satisfaction

Quantitative objectives

• Quantitative objectives have been brought.
• Policies and administrative strategies have been selected in vision of realizing of given objectives.
• Supporting of people and families for becoming equipped to information technology structures by cooperation of other institutions (regional council and mayorlty), national organization of youth
• Development of public centers which access to information technology
• Focus on making policies and national supervision and non focus on administrative management and implementation
• Rising of existent rules and compiling of new rules for adaptation to information technology needs
• Expansion of general knowledge about IT for whole society, especially managers and personnel of public organization
• Encouragement and supporting of users for using of IT
• Supporting of nonpublic institutions (NGO) for development of usage of IT
• Extension automation of general and especial systems in public organization
• Empowering of hardware in public organization, educational institution and medical centers
• Increasing of capacity and quality of IT educational center
• Making monolith planning system and providing of human resources for IT
• Making code system and IT standards
• Compiling of rules and IT juridical system of country [2].

Conclusion

Different periods of human life suggest a close connection in technologies, social institutions, and economic activities. This means that new horizons of activities and new areas of cooperation have been obtained for different segments of society with the advent of new technologies that the imagination of some of them was impossible up to this time. Revolution in communications and information has opened new horizons in the field of economics, politics and culture and it is also raised in many countries as a solution in order to cope with the economic crisis such as unemployment. So, the nature of business has been changed from traditional to modern state with the development of these technologies. New jobs are created in addition to the change in the business to meet the need of today’s technologies. Accordingly, it can be said that the department of information and communication technology (ICT) should be studied and analyzed as a potential employment in the country. Revolution of ICT (information and communication
technology) can be considered as anti-employment matter because the diffusion of ICT in organizations and various companies make organizations downsizing. Organizations will decrease human resources especially at intermediate levels in order to use this technology. Using this technology saves human resources. For example, data integration has removed many jobs that transfer or control data. On the other hand, today new information and communication technologies have opened the ways in an enormous scale. For example, hardware and software services, electronic commerce, and create chain companies through the smooth flow of information provide new employment opportunities.

In summary, it can be said that two types of process innovation and product innovation effects on employment. The innovation process that is change in the production process decreases labor demand or increases unemployment through displacement and innovation product that includes changes in the mode of production and new products and increases labor demand through remedial works by creating new job opportunities. Thus, it can be argued that (ICT) effects can be positive or negative on employment depending on which of these effects is stronger.

Especially the use of (ICT) has higher growth in productivity and utility of services firms. These effects are more when non-technological innovation combined with technological innovation. Kiplinger (2006), believes that ICT impact on employment in each country can be studied and analyzed in two different ways, which include: 1. Using ICT causes that works be done by less labor and thereby employment be reduced. 2. The use of ICT will lead to new innovations that increase the growth and employment. Increasing the power and speed of information processing, cheapening hardware and software prices and promoting the use of mechanized systems created optimal information systems and quick and easy access to information, possibility of the calculation of the exchange of data with very high speed, fundamental changes in the business way, rise of e-commerce and ICT-related businesses; this condition not only increases the production costs of firms, but also increases the efficiency of business transactions to electronic means and increasing the added value of the firm's profits. For the good or service producer profit maximization is very important. As a result, production, market scale, and product price will be very important for him. Because ICT can reduce the total cost of producer and increases the total revenue that increases the producer profits. Additional incentives to reduce costs, increasing revenues and improve productivity because that firms convert their profit to investments. With the creation of new production and service industries and production of new products, new job opportunities will occur. While the importance of ICT use for development cannot be underestimated it should not be seen as a panacea that will solve problems of unemployment or social exclusion in the near future. This observation is of particular relevance to young people, because there is ample reason to question whether the adoption of technology-based development strategies will produce results of real benefit to all young people. It will take many years for all youth to gain access to the opportunities promised by ICT. Notwithstanding these caveats, there is reason to be cautiously hopeful and optimistic about the potential of ICT: especially in view of the relative advantage young people have in embracing these technologies for their own benefit. The experiences of last two decades of 20 centuries showed the basic evolution in concept of development which has been emerged in constant development model. In these two decades and the beginning of 20 century, alliance flows in regional and global levels became important despite the increasing of competitions, expansion of markets, spreading of major technologies and making new managerial structures for recognition of challenges and using of opportunities in international level. The alliance of economics, social, political and environmental dimensions both regional and global levels is expanding according to constant development model. The orientation of national development must be holistic, internal, external (regional and global) and futurist because of existence of these facts. We need to management, thought, research and evolution for movement toward economic development; therefore, Iran must increase its own abilities of economic capitals higher than other society levels and at least at the same level, if it wants to an active country in global society and plays role in global family in the future. This fact is possible only by using of new instruments and technologies which today extending and expansive societies use them. One of these technologies is ICT. When society moves toward knowledge-oriented, all of people use clear information and process for implementing of his planning and achieve higher productivity. Earned economic value from this mechanism is a basic factor for economic growth and improvement in this society. ICT as a main factor decreases distances in time and place dimensions in various programs as this fact causes to make new productions and services in these areas which it wasn't possible before [11].

In planning of twenty vision (2005-2015) which has been distinguished strategies and procedures to economics, social, political and cultural development. Traditional instruments and forces change to thought, knowledge and new technologies such as: ICT, internet, nanotechnology and …. The results of this vision which emphasize on ICT consist of:

• Access to constant and continuance growth
• Changing of all aspects in agriculture, industry, economics services and natural resources to a various and dynamic economy
• Dependence on knowledge and wisdom of human capital and new technologies
• Making proper environment for growth of innovation activities and entrepreneurship technical capacities

The importance of using of new informational and communicational technologies has been distinguished in these given goals. Therefore, Iran needs to basic evolution in technology and knowledge fields for access to these goals [17].

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