

# **THE CONTRIBUTIONS OF INFORMATION AND COMMUNICATION TECHNOLOGIES TO FINANCIAL GROWTH**

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## **Abstract**

*Constant performance increase is the main aspect for businesses to gain competitive advantage and continue to exist. The businesses that have high performance gain competitive advantage. Thus, they aid to the development of the country they are based, with increasing the country's competitive strength and welfare of its citizens. One of the best ways to convert the performance to action is benefitting from information technologies. In this study, contributions of use of information technologies to the companies' efficiency are evaluated conceptually, within the light of the existing literature.*

*Keywords: Information Technologies, Productivity, Economic Development*

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## **INTRODUCTION**

While industrialization and modernization were the important issues in the recent century, now, an important topic is the information technologies. These technologies have important effects in every aspect of life, such as economy, politics, competition and religion. In the information age, capital and financial institutions are globalized and international borders lost their importance. This trend introduced terms like systematic risk, crisis and infection effect, after the worldwide crisis. On the other hand, information technologies have many advantages. Financial institutions use its innovation capabilities, cooperation opportunities and competitive aspects to increase their chance in global competition. Also with the help of information technologies, new products

and activities that have high net values are produced and marketed to enable the construction of an interaction cycle. For institutions, development of the national and international innovation system implies being directly related to the protection of financial system and taking up an important role in financial markets. During this process, financial institutions became dependent to information technologies, just like people. Furthermore, this technology not only changed the behavior of financial institutions, but also it changed the behavior of the customers of these institutions drastically. Institutions use information technologies to effectively serve the customers, by also broadening their offerings that adds to their net value. In addition, customer profiles are changing independent of the geographies.

For the countries that aim to increase the prosperity of their society, it is very important for them use their sources with respect to planned objectives by also making researches on the topic. In development processes, issues like rapidly increasing household consumption as a result of increase in income, usage of new resources, benefiting from current resources effectively as well as turning information technologies into advantages turned into hot topics for financial institutions. Most important point of using information technologies efficiently is to increase competition strength and prosperity levels globally. Sustainable economic development not only depends on the resources that countries own, but also it depends on the production, evaluation, storage and security of the knowledge.

This study aims to increase the productivity of financial institutions, regardless of sectorial differences. With this objective, triggering elements for using the perks of information technologies in efficiency for being strong in international competition are discussed. In that manner, this study defines the effects of investments in information technologies on the productivity of financial institutions and economy. While evaluating the results, in this study, it is important to find the status of financial institutions in the usage of information technologies.

In the context of the study, institutions that use information technologies are investigated. The basis of economic development is formed by strong and effective financial institutions. As a result, it is important for the financial institutions to work sustainably by increasing their productivity and area of influence. With this study, the effects of institutional spending for information technologies on their productivity were investigated conceptually, by considering secondary data.

As a result, financial institutions based on information technologies develop rapidly. It is important to keep raising the rate of benefiting from the information technologies. Therefore, an obligation is to stimulate institutions to invest technologically with also supplying related education. Using internet based applications made the access of firms easier, with also changing the ways of access between institutions and their customers. Thus, the price for

distributing products and services has diminished. With the dense pressure of the international competition, institutions find necessary solutions using information technologies to increase their net value. These institutions carry their operations on digital media and minimize the expenses to increase their productivity.

Today, it is the age of innovation for financial institutions. As this is the case, scientific works have become indispensable for the good performance of these institutions.

Developing countries have a great potential for the usage of information technologies to sustain economic growth. The bulky statures of developed countries make it harder for them to adapt the information technologies, related to developing countries. If financial institutions can use this period to invest technologically for achieving a better productivity, by also keeping the situation under control, they can become global powers.

## LITERATURE SURVEY

Michael E. Porter, in his book "Competitive Strategy Techniques for Analyzing Industries and Competitors", mentions that the emergence and rapid development of Information Technologies happened in the new society. Which give birth to the need for highly educated human resources, while increasing the national productivity and enabling to gain competitive superiority, they are regarded as the most important informatics technology. He states that the first firm that takes action in industry gains an advantage and information technologies shape the competition by creating obstacles in the entrance to the industry (Porter, 1980).

Information technologies offer a new kind of entrepreneurship in a lot of economical areas and also they formed the basis of the economic growth in 1990s. Information Based Economy term took its place in the literature as a result (Micheal, 1999: 11). Juniper defined the information economy as the web economy (Juniper, 2002: 1). According to Christopher Freeman, information technology is a passage to a new form of technology that is seen in all possible incomes' relative cost structure dynamics; that is emerged by interconnected technique, organizational and executive novelty and developments; and that is based on cheap information income (Freeman, 1988: 4). In their research in 2007, Yamak and Koçak investigated the effects of IT investments in economic growth for 50 countries. They stressed out that the effects of these investments had emerged especially in G-8 countries (Yamak and Koçak, 2015). Saygılı, Cihan and Yurtoğlu investigated the state of the Turkish economy on its way to transform into information economy with comparing among other OECD countries. They concluded that Turkey is far behind in this transition process (Saygılı et. al, 2002). There are many researches based on this subject, especially those investigate the relationship between

developed and developing countries' information technology investments and economic growth. Among these studies, European Union countries are also included.

### **Information Systems and Technologies**

Information technology enables the effective and efficient operations of data save, storage, processing to produce new data; accessing, storing and transferring this new data. Information technologies have important contributions in increasing the efficiency, minimizing the costs, offering better quality goods and service, producing new information based products and increasing the competitive strength (Aytunç, 2011).

The companies using IT state that with this technology, they gain the abilities of office automation, electronic calculation and fast and accurate analysis. Information Technologies in general have important contributions. In businesses, access to technology results in a decrease of costs, that enables easier access. Developed solutions are accepted in the market labelled as “user friendly”. It is also very easy to use these technologies. This is the reason behind the fact that Small and Medium-Scaled Enterprises (SMEs) gain competitive strength by using ITs.

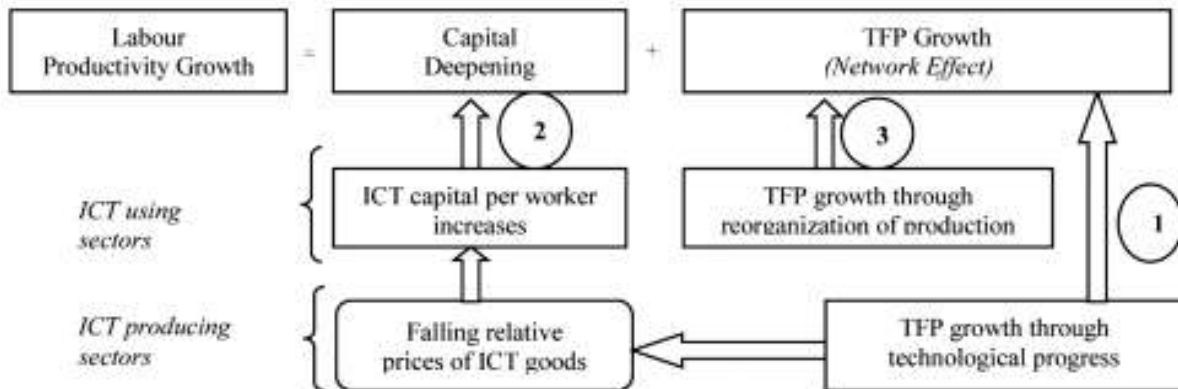
Information is an important and empowering asset. For developing countries such as ours, effective development and transfer of information is vital. ITs develop the operation process by facilitating and triggering the workflow. ITs transform the operation processes by increasing the productivity process of businesses. Important events had occurred during the transformation of industrial society to information society, where more areas are discovered that information technology can aid with data process and supply. Businesses are using, with the help of the internet, extranet, local area network, wide area network, electronic data interchange, e-commerce, expert systems and enterprise resource planning. Also, their computer based systems are management information systems, decision support systems, office automation systems, office automation systems, artificial intelligence and expert systems and electronic data processing systems.

### **Contributions of Information Technologies to Economic Growth**

Austrian economist and political scientist Schumpeter (Schumpeter, 1962: 86) made the first study that calculates the effects of technology mathematically. Fagerberg assumed that with technological inventions and isolations, the economy is developed and information technology competition is the main thruster of the economic growth (Fagerberg, 2004: 2-7). In the last quarter of 20<sup>th</sup> century, approaches that determined technology to be included in growth models were developed and internal growth theories were developed. With internal growth theories, new ways to measure people's capital and information were developed, that enabled the ability

to determine IT's effects on countries' economies (Ateş, 1998:18). During the period of 1995-2015, most important roles in the growth dynamics of Australia, Denmark, Sweden, Great Britain and US are determined to belong to investments to people's capitals, company formation and entrepreneurship, widespread of technologies, ability for innovation and skill to benefit from ITs (Şaf, 2015: 55-56). Information and communication technology's (ICT) direct contribution to labor efficiency and economic growth is supplied in Figure (Šniukienė&, Sarkane, 2013: 1273).

Figure 1. ICT's Ways of Contribution to Labor Efficiency

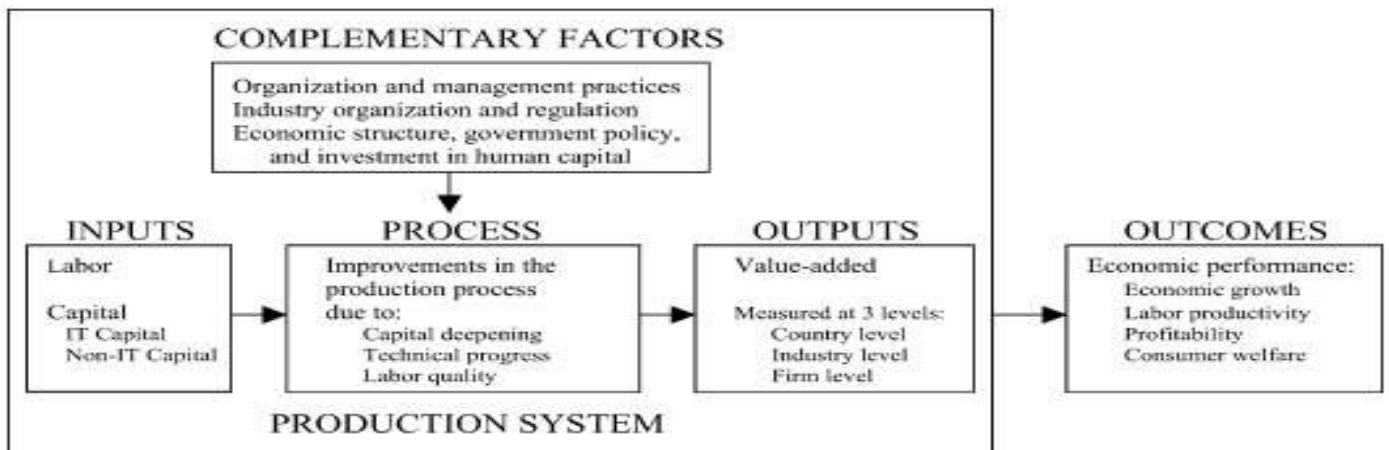


Source: Zhen-Wei Qiang, Pitt, & Ayers (2003); (Šniukienė&, Sarkane, 2013: 1273)

Strengthening novel processes with the help of ICT not only increases the communication companies but also in scientific institutions and increases the work efficiency to provide competition strength. Information is considered to be a form of capital for companies.

Dedrick, Gurbaxani & Kraemes developed the cognitive system in Figure 2 based on the results of their empirical study on ICT's economic contributions (Dedrick. al, 2003).

Figure 2. ICT and Economic Performance



Source: Dedrick, Gurbaxani&Kraemes (2003)

IT directly contributes to labor efficiency and economic growth. The effects that IT make to economic growth is based on the change of capital on one hand and the increased labor efficiency as a result of IT production and usage on the other. The largest increase in income per capita is attained in areas that have increased labor efficiency. And this is obtained by the deepening of capital. The deepening of capital in IT sector is increasing with the investments in IT, in both IT producing and using sectors (Şaf, 2015: 55-56).

Production of more goods and services bring the economic growth alongside. With the use of information and communication technologies, an increase in information flow that is needed for production is attained and time and cost advantages can be obtained. With this advantage, goods and services are produced faster and cheaper (Bongo, 2005:1-4). These products, with their ability to be marketed for cheaper and higher quality bring more demand, compared to similar products in the market (Wangwe, 2007: 12-14). One of the best examples for this is China. At first, they were producing cheap, low quality products. With the help of IT and their high technology, they are now regarded highly in a lot of sectors, ranging from medicine to space (Göçer, 2013:215-240).

The companies that are based of IT have important contributions to not only their own development, but also the country's development alongside (Güleç, 1991: 164). The level of technology is among the factors that determine the efficiency. The companies that produce and employ IT attain a level of efficiency that provides competition strength. In the increasing global competition environment, the sustainability in economic development of companies is based on the management of change. The biggest function of this change management is to provide advantages in competition. And this advantage is the harmony with the changes in IT.

### **Contributions of Information Technology Usage on Company Efficiency**

Creating a qualified employment, attaining a sustained growth, gaining a national competition advantage and making the development sustainable are all enabled by the ability of effective IT usage and placing the IT in the economy.

With the help of ITs, information transfer is easier, faster and cheaper. That increases the ability of the companies to communicate and transfer information among themselves, their customers and suppliers. That way managers can obtain a more valid evaluation of their business and make faster decisions.

Increasing technology enabled the easier circulation of goods and services in different geographies and markets, and that creates an increased level of competition. Increased transparency and competition forces the companies to improve their management on resources. Better resource management help to increase the efficiency in these companies.

Companies, especially with internet based applications, gained easier communication opportunities with customers. As a result, with effectiveness and efficiency, especially the traditional companies were enabled to save.

Companies can develop new products with low costs with the help of IT investments. This financial investment increases the real capital value per employee. Also with decreasing the capital costs, they deepen the capital that is connected to IT. This deepening both enables the increase of labor efficiency and capital effectiveness. With IT, operation costs are decreased to result in more demand for novelty.

## **CONCLUSION**

Technology is included in every area of people's lives. The speed and facility for companies that ITs bring have utmost importance. Among all the technologies that the companies had used, IT created the most influence and change. This technology had been providing companies with new opportunities and business contacts.

In the globalizing world, there is an increased competition between companies. In this hard competition environment, it is very important for companies to be open for technological novelties for survival.

Usage of IT is an important factor for companies to become flexible in global competition, management and marketing. Also, works like new product development and re-settlement of companies are also enabled. For this reason, a portion of the general management strategies of managements of various sizes are devoted to IT.

IT also increases the speed of management decision application and sensitivity for the environment. In the global competition environment, companies become fast adapting structures that perceive and react to the changes.

As a factor that deeply affects the efficiency in a company, it is not possible to omit IT from the business life. IT provides speed, facility in management, lower costs to result in efficiency forms the center of the business life. With considering these results, it is clear that the investments to IT must be sustained.

The actual numerical effect of IT usage on factor efficiency is not clearly supplied, but there is a general agreement in the scientific literature. This agreement shows that IT changed the way of business by changing the procedures of production and distribution of goods and services. Again, the usage of IT resulted in new markets, products, work areas and organization types. It also resulted in the increase in workload quality, new lifelong learning and professional education systems.



In this study, the effects of IT to the performance of businesses are evaluated conceptually, in the light of the literature. In addition to this study, in future studies, IT's contributions to competition strength and performance of large and/or medium sized businesses can be measured. With this study, another aim for the future is to draw attention to increase incentives and education for the spread of IT, alongside with an improved consciousness on technology safety.

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