

# GLOSERV

ADVANCES IN GLOBAL SERVICES AND RETAIL MANAGEMENT

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## Three Keys of Development: Knowledge, Efficiency and Innovative Entrepreneurship

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### Abstract

The change in the structure and composition of production factors have always been occurred in the world production history. The competition between sectors and also within each sub-sector that comprise them continues. In this sense, competition has always fed change, transformation and progress. The process phenomenon is the change and transformation movements that occur in the production processes that economies focus on. In this respect, the classification steps emphasize this development. In this study, we discuss economic groups (resource-oriented, productivity-oriented, and innovation-oriented) in terms of drivers of economic development (knowledge, efficiency, innovative entrepreneurship, and productivity). The 3rd Industrial Revolution starting in 1990s has given more momentum to the structural transformation necessary and valid in industry and industrialization. In order to understand and even make sense of the structural transformation policies consisting of entrepreneurship, innovativeness and productivity triangle, we also discuss a conceptual-theoretical and historical framework related to industrialization as the key to development.

**Keywords:** knowledge, productivity, efficiency, industrialization, innovative entrepreneurship

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### Introduction

Theories of development and / or economic growth actually often use the same keywords. While characterizing the first steps of industrialization; this common language was land, labor, capital, entrepreneur. In the later stages; technology, knowledge, innovation, and efficiency (although the difference between them is not easily distinguished) are used, that cannot be easily separated (and one of them is as if the derivative of the other).

The more meaningful and necessary innovation is for development or industrialization, the more meaningful and necessary it is to increase productivity. Both serve the purpose of building a competitive economy. Companies and countries that can innovate can also achieve the goal of

efficiency as an important key to development. In this respect, innovation constitutes one of the prerequisites for efficiency.

“Gear up” in industry is only possible with innovation strategies. Innovation is a participatory process in economics and a competitive strategy. Every innovation is a bridge between "imagination" and "truth"; begins with a dream, ends with a truth; until a new dream starts. Every dream also feeds a "need". It is the need that is the main cause of "inventions and innovations". On the other hand, the entrepreneur has a special importance as a "key player" within factors of production. According to the traditional entrepreneur understanding, "the entrepreneur brings together the factors of production, coordinates the resources." The entrepreneurs have started to fulfill its capitalist function at the same time as the globalizing capitalist market dynamics force it. It is therefore no coincidence that it is seen as the key to overall economic development.

## **Literature Review**

Xavier, et al. (2013) categorizes economic groups into resource-oriented, productivity-oriented and innovation-oriented for global entrepreneurship. Alpaslan and Kutaniş (2007) compared the industry and information society models that direct innovative entrepreneurship in many dimensions such as space, vehicle and threats. Kalaycı (2008) regards information and communication technologies (ICT) as the key to unlocking development and states that innovative entrepreneurship developments appear more in the field of ICT. Hahnel (2004) examines the relationship between productivity and Pareto optimum as a development measure. Elçi (2008) schematizes the innovation process and the factors affecting this process.

## **Methods**

While the research method used in this study is descriptive, the thinking method is inductive. Thus theoretically; It is aimed to reach the result of economic development from the sum of three separate parts called knowledge, efficiency and innovative entrepreneurship.

## **Theoretical Structure**

### ***Drivers of Development: Knowledge, Entrepreneurship and Productivity***

The change in the structure and composition of production factors have always been occurred in the world production history. The competition between the main sectors (namely agriculture, industry, services) and also within each sub-sector that comprise them continues. In this sense, competition has always fed change, transformation and progress; how much of the competition is constructive or destructive is a detail. It has not always been necessary to tear down the old to make the new. To demolish while doing, to do after demolishing or to do without destroying; fully; it has been under the initiative of the so-called enterprising class, which has the will and power to carry out the actions of doing and destroying. This class is not only knowledgeable and skilled, it is also the class that builds a chain of production and income (wage + interest + profit) by attaching itself to the labor-capital rings by relying on capital. However, the last two links (interest & profit) of the chain take the most share while dividing the income.

The decrease in the share of agricultural production in total income at the mercy of the soil and the climate and the increase in the share of industry first and then the services sector also affected the

importance of production factors. While downsizing agriculture, which carries raw materials to industry, is an irony; the fact that the services sector such as commerce, transportation, communication, and tourism are the highest stakeholders in the income pie by using industrial outputs (machines) is a realistic result of the increase in the population of the city. For a long time, the modern world abandoned the agricultural development model and adopted the development model dependent on industry and services. The replacement of land wars by industrial wars is a natural reflection of this model change.

The process phenomenon, which is expressed as the stages of development, is the change and transformation movements that occur in the production processes that economies focus on. In this respect, the classification steps, which are also referred to in the "Global Entrepreneurship Monitor" (GEM) reports, emphasize this development. In the GEM's countries' report, economic groups are classified as resource-oriented, productivity-oriented, and innovation-oriented (Table 1).

**Table 1.** Economic Groups and Their Characteristics in the GEM's Report

<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
<i>Resource-oriented economies (factor-driven economies) Agricultural support Natural source origin</i>	<i>Productivity focused economies (efficiency-driven economies) Rise in Industrialization and economies of scale Small Businesses-oriented</i>	<i>Innovation-oriented economies (innovation-driven economies) R &amp; D and information intensive Service expansion Innovative initiatives</i>

Source. Xavier et al., 2013

Resource-oriented economies are low-productivity structures that have not yet fully realized the industrialization phase of development. In these economies, the production function is shaped by the weight of agricultural or natural resources, and the possibilities of using knowledge as capital and a special production factor remain limited. Productivity-oriented economies, on the other hand, emphasize the structures in which the transition from the industrial society to the information society is incomplete and the R&D intensity is low, although they have achieved a certain level of industrialization.

While there is an industrial structure dominated by small and middle size companies in these economies, the development opportunities of entrepreneurship and especially innovative entrepreneurship remain weak. Innovation-oriented economies, on the other hand, have a structure with high R&D and knowledge intensity and innovative initiatives attract attention. On the other hand, these stages also emphasize the differences that arise in terms of competitiveness and profitability opportunities. In terms of the last two stages (productivity focused and Innovation-oriented economies), the industrialization characteristics of the economies are important.

### ***Industrialization: Prerequisite for Transition to Productivity-Focused Economy***

The modern form of industry is the factory; factory production. The Anglo-Industrial Revolution gave it a universal value, gave it an identity. Overlapping with contract manufacturing and home workshop, commercial capitalism could not meet the needs of the growing world economies. The factory system was established as a result of the Industrial Revolution, which meant that many machines were invented in a certain period and started to create added value in the economy.

Home production labor has been drawn to factories, with each new technology it has been disciplined for more and more efficient production; Medium and large companies, which determined income, prices, wages and profit, dominated the goods and labor markets. Ultimately, all these developments prepared the birth of industrial capitalism. Industry is generally a complex structure with predominant economic dimensions, but it has non-economic dimensions as well. With all these dimensions, it appeals and serves people. In this regard, the industry need not be called "human sector" separately.

According to several general option definitions in the literature and frequently used, the concept of industry emphasizes the activity that produces non-agricultural use values (production and consumption goods) and has a collective character. According to another definition, it is the event of using various materials (input) to obtain a new physical asset in terms of product (output) and completing the production processes in order to create a benefit under the leadership of the entrepreneur. Resource-oriented economies, in this respect, emphasize a production model in which the agricultural structure is a preliminary sectoral and labor intensity gains importance as production factors. In this respect, industrialization nourishes itself as the igniter of development, especially as the capital, which can be regarded as the fuse, gains importance.

Although there is no definite history of industry and industrialization in the world, in general, industrialization; It is known that it covers three important developments (Kelly, 2013): expansion of transportation, effective use of electricity, development of industrial production processes and mass production. The 1st Industrial Revolution, which took place in England, where J. Watt invented the steam engine, and spread to the whole of Europe by showing its first effect in Germany and the USA, actually constitutes the first phase of modern industrialization. In the USA, H. Ford's T model automobile invention and mass production impacted the Second Industrial Revolution. Industrial policy (IP), which represents the sectoral dimension of economic policy (EP), is one of the most suitable policies for transformation; so there are different definitions. The definition of IP has changed depending on the conjuncture, but mostly with the three industrial revolutions that have happened until now (See Table 2 for a comparison of industrial revolutions).

**Table 2.** Three Industrial Revolutions

	<b>1st Industrial Revolutions</b>	<b>2nd Industrial Revolutions</b>	<b>3rd Industrial Revolutions</b>
<i>Period</i>	1780s	1890s	1990s
<i>Dominant technology</i>	steam engine-locomotive loom iron processing	electricity chemistry combustion engine production (assembly) line synthetic material	information and communication technology micro electronics new materials clean technology renewable energies energy efficiency
<i>Dominant energy source</i>	Coal	Coal, oil nuclear power	renewable energies energy efficiency
<i>Raw materials</i>	Steel	plastic	renewable raw material bio-technology recycling
<i>Transportation- Communication</i>	train, telegraph	automobile airplane radio-TV	high speed rail system Internet mobile communication
<i>Society / State</i>	bourgeoisie liberal state free trade constitutional state	welfare state, mass production mass-society parliamentary democracy	environmentally friendly state civil society globalization global governance
<i>Starting countries</i>	UK Belgium Germany France	USA Japan Germany	EU USA? Japan? China?

Source. Jänicke and Jacob 2009

According to Keyder (1993), in development literature, industrialization is considered either as a stage that can be reached at the end of a linear movement or as a goal that can only be reached by rebellion against peripheral status: As in all other economic activities, in which countries it was clearly understood in the period after the Second World War that what kind of industry to take part in was determined by the logic of the world economy.

The difference of traditional crafts in the periphery, which includes underdeveloped and developing countries, from those in the center called industrialized countries is that they do not have a transformational dynamic towards modern industry. During an autonomous transition to capitalism in the center, activities called by various names such as home industry, proto-industry or rural cooperative production (manufacture) form a primitive accumulation channel that enables the development of productive capital in the pre-capitalist social form (formation).

The thick line between traditional society and industrial society (Erkan & Erkan, 1989: 57-68) has been drawn by industrialization. Accordingly, as Kerr, et al. (1967: 99) stated; industrialization refers to the transition from traditional society to industrial society. Industrialization includes both the advanced stages of production technique and scientific development. According to the same authors, industrialization imposes its own culture (industrial culture, IC) on pre-industrial culture (PIC): If PIC encourages individuals to work, save and invest, treat everyone equally, has religious and moral values open to innovation, adopt a legal system that protects property, and defend a strong state organization, it will move to IC faster. The basic picture of these theoretical and historical developments has been in the form of "industrial society" (IS) and "information society" (InfoS). InfoS is not based on the rejection of IC, it is an extension, complement or a higher stage of it. IC prepared the birth of InfoS (Alpaslan & Kutaniş, 2007: 59)

The "first wave" (pre-industrial agrarian society), "second wave" (industrial society) and "third wave" (post-industrial knowledge society) each mentioned in the industrial history literature also created their own type of worker: agriculture, industry, and knowledge workers, in turn. Labor; it is not separated only as "white collar" and "blue collar"; "gold collar" used for knowledge worker is added to this classification.

"Blue collar" is predominantly by hand in a factory on an hourly basis; one variation of this is "green collar workers" in the field without the clock concept, but according to the season initiative; "White-collar workers", on the other hand, work in an office with regular salaries and extensive benefits. There is a rapid transformation from industrial worker to knowledge worker in the 21st century. Information society is a result and continuation of the industrial society and the industrial society of the agricultural society. There are important qualitative differences between them. Therefore, all three types of workers survive, they have to protect their existence; otherwise people cannot meet all their needs. Agricultural worker producing tomato-pepper, industrial worker manufacturing machinery, knowledge worker preparing software program; all of them must exist at the same time (Balci et al., 1996: 77)

### ***Knowledge: Key to Innovation-Oriented Economy and Raw Material of ICT***

The main input of innovation-oriented economy, as a special production factor, "knowledge" has actually played a transformative role in every stage of the historical production stages. "Information", the last raw material of the industry, continues to draw the boundaries of the

economic or socio-economic development of the world. Hence, it is a contemporary (and even post-modern) production factor.

Countries that can produce technologies based on knowledge, enable them to be used in the production and consumption of goods and services, and convert them into high added value in all areas of life, especially in the economy, are considered to be relatively more developed. In this respect, the most important raw material of information and communication technology (ICT), which also constitutes the infrastructure of the information economy, is information. Because in our age, the development approach has changed, from the industrial economy to the knowledge economy axis. In today's world, developing countries, that want to become one of the developed countries, are trying to use the ICT key correctly and effectively (please see Table 3).

**Table 3. Key to Information and Communication Technologies (ICT) and Development Lock**

ICT Key	Development Lock
World experiences are evident and accordingly, the ICT sector brings high added value and international competition to the country in which it is significantly involved. Due to its nature, ICT does not restrict any country in the world within the framework of "full independence". It gives a ground and momentum to mutual dependency. Computer-internet technology R&D unit	This high and quality added values and global competitive environment create a "multiplier" or "accelerator" effect on the development process.  Today, the "interdependence" of a country and the benefits and satisfaction it will provide from it are as much as the development level of that country.  "The engine of the knowledge society" Public and private sector institutions / enterprises should establish modern scale R&D units in accordance with their fields (e.g. communication). This will accelerate their contribution to the production-oriented innovation and competitive economy.

*Source.* Kalaycı, 2008

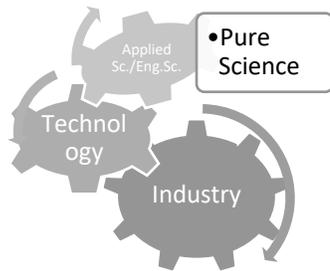
Considering the increasing number of "global cities" (Sassen et al., 2001; 171) in that village where households (countries) with different levels of development are gathered, the world as a "village" is also becoming civilized. Global cities represent or are represented by "knowledge-information capitalism." (Drucker, 1993: 254). In short, it is observed that every household fused with ICT products of the village has transformed into an informatics society of various sizes or rapidly evolves in this direction - again through ICT. Here, ICT is sometimes regarded as a reason and sometimes a result of the development process (Kalaycı, 2008: 10).

While the information key unlocks development, the growth problem of businesses depends on the possibilities of innovation in this respect. In this respect, depending on the knowledge production factor, the "innovation gap" plays an important role in closing the gap between the current business model and the required growth (Barker, 2001: 137).

The last (3rd) Industrial Revolution has also given more momentum to the structural transformation necessary and valid in industry and industrialization. In order to understand and even make sense of the structural transformation policies consisting of entrepreneurship, innovativeness and productivity triangle, it is first necessary to draw a conceptual-theoretical and historical framework related to industrialization as the key to development. If it is necessary to set a common password for industrial theories, it could be:

"BSc → ApSc / EnSc → T → I (a)"

According to this password determined by Günay et al., (2002: 10); BSc, basic (theoretical) science; ApSc / EnSc, applied / engineering science; while T stands for technology and I stands for industry. This sequential order explains the actual process and interaction between science-technology-industry after the Industrial Revolution. Between BSc, ApSc, T, and I is a sequential interaction as above [Eq (a)]; each is dependent of the other (see Diagram 1).

**Diagram 1.** Interaction Between Basic Science, Applied Science, Technology and Industry

There are a number of theories explaining the development process of industry (I) with technology (T), the most important of which is the neo-classical theory and the Schumpeterian / evolutionist theory that deals with the superiority after the 1980s. In summary, Günay (2002) concludes that: The principles of transparency, exclusivity and competitiveness, which are the conditions that the market mechanism adopted by the neo-classical theory, contradict with technological activities. That is to say, exclusivity and competitiveness define the ability of a good to be consumed by a consumer and the end of the consumed good. However, since technology is a public property, once it can be produced, it is out of question. No cost is required to reproduce a computer program produced once. In addition, "intellectual property rights", which is deemed necessary for the protection of the interests of the innovator in order to sustain technological innovation activities, is a monopolistic attitude. The "perfectly competitive market" demand, which is the basic principle of neo-classical economics, cannot be applied to technological innovations or a dilemma arises that this basic principle should be abandoned for technological innovations.

According to the Schumpeterian / Evolutionist theory, competition between businesses is sustained through technological innovation called "creative destruction". According to this mechanism, an enterprise with relatively superior technology starts production in the stagnant market and becomes a monopoly on that product. However, the market, which is shared with other businesses that participate in the market using the same technology over time, shrinks and recession is seen as it is shared by many businesses. It causes destruction for businesses that cannot keep up with innovations. It is a period of recession and a process of entering the market of an enterprise that makes technological innovation. Since this process is based on technological innovations, it is a disruptive process as creative businesses are eliminated. In the evolutionist approach, innovation / mutation and selection are at the forefront. Here, the main factor that provides superiority to businesses is technological renovation. It consists of two elements: Innovation + extraction = Renovation.

The evolutionist approach considers the technological development process not as a simple linear process in the form of invention-innovation-diffusion, but as a complex process in which each stage is intertwined. As the most important reflection of ICT, the level of relationship between technology maturity and product application can be expressed in the form of expanding waves in this respect. Transformation and differentiation of the product is at the focal point of innovative entrepreneurship. Radical changes for the future emphasize the transformation of technology into innovative entrepreneurship in a sense (Alan, 2001:104).

### ***Success of Development: A Sign of Victory Efficiency and Innovation***

For productivity it is said that “it is not too tiring of the workers and machines; it is just making them work effectively.” Efficiency is the entrepreneur's dream and at the same time determines the limits of success possibilities because profitability depends on efficiency. Efficiency is also a constant key to development, as it is the accelerator of development.

Efficiency is also referred to as the Pareto Optimum (PO) in economics: the result of the PO occurs where it is impossible to improve one's situation without worsening another's situation. In other words, it would be inefficiency or wastefulness to 'not implement a change that improves someone's situation and doesn't worsen anyone's condition'. Such a change is called a 'Pareto increase' (PI), and a PO or efficient result can also be defined as an outcome occurring where there are no other PI possibilities. The broader understanding of efficiency is called the 'efficiency measure' and serves as the basis of the cost-benefit analysis. This criterion is simply; if all the benefits of doing something to any person and everyone outweigh all the costs it brings to any person or everyone, it is efficient to do it. However, if all the costs of doing something outweigh all the benefits of doing that thing, doing it is "inefficient" (Hahnel, 2004).

As an important result of entrepreneurship, productivity growth has a close relationship with growth and production function. That is (Öztürk & Tuzcu, 2012: 101): Growth function:  $PL = T \cdot f(L, C, R, EP)$ . Here; PL means output / production level, C (physical) capital as input elements, T technology coefficient L is labor, R means natural resources, EP means the entrepreneur. In the production phase, where the returns to scale at the beginning of production are valid, per unit input, unit output increases, albeit at decreasing rates. However, productivity losses accelerate after the point where the average physical production (APP) is equalized with marginal production. The use of new inputs will begin to decrease average production, causing costs to increase. At such a point, it will be necessary to quickly concentrate on technology - efficiency factors (Öztürk & Tuzcu, 2012: 104). Knowledge, know-how, technology, etc. are needed to get more output with less input. It is the fact that new productivity factors such as internalization have been internalized and introduced into the production process (Öztürk & Tuzcu, 2012: 104).

### **Findings**

Economic and commercial impact in practice: Today, knowledge is a production factor at least as much as labor and capital. Since we are in the age of the Internet, the limitation and flexibility of knowledge like other production factors are not discussed much. The output of knowledge increases compared to cheap inputs. The exchange of knowledge together with intellectual property rights, has created a high added value and trade volume, and has also provided dynamism to the markets.

Impact on public policy: Efficiency, speed and satisfaction have increased since all public services (communication, transportation, security, tourism, etc.) sectors, especially education and health sectors, are based on advanced computers and internet. However, the unequal distribution of income and welfare, which is considered as a measure of satisfaction, still remains a global problem.

Impact on society and the country: It cannot be denied that innovative entrepreneurs who are successful in their own laboratories and state-funded scientific-technological projects have a great positive impact on economic development and civilization. The quality of life and individual / social attitudes of social classes change as the efficiency-focused economy moves to an innovation-oriented economy. Depending on their purchasing power, to the extent that socio-economic income groups benefit from inventions and innovations, their quality of life and civilization levels increase relatively.

## Conclusion

In this respect, the concepts of technology, innovativeness and efficiency should be handled together. However, an entrepreneur as a key player, he or she is the main actor that makes the whole photo come out. Although the main owner of the photograph does not come to mind most of the time, the key playmaker continues to contribute to the emergence of the national income map with its micro and macro entrepreneurship structures. The richness of the map, on the other hand, depends on the marketing and technology possibilities that express the purpose of combining capital and labor from the point of view of the playmaker. Naturally, the trivet of schools and universities has an extremely important and defining feature in the development of innovation capability. Every stage of education, from primary education to higher education, including the education of educators, will become an accumulation-contributor to institutional-entrepreneurial development. The innovation system is constructed in accordance with the definition of innovativeness in the "Oslo Guidance" (Elçi et al., 2008: 30). In today's globalizing world, entrepreneurship and innovation have developed based on intensive knowledge as the subject of multidisciplinary sciences. In accordance with this fact, countries that can use their human and economic resources, knowledge and experience well have a more successful development process.

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