



The world economy has been changed from the traditionally agricultural to industrial one. Many countries in the world has implemented its industrialization and modernization, accomplished the industrial revolution, and become developed industrial ones. At present, the world is coming to the new era and in the transition from industrial to knowledge-based economy. The knowledge-based economy with its value will turn into the ground for economic development and capital accumulation.

knowledge-based economy has four major areas:

- First, information technology and communications
- Second, intellectual property including patents, brands, advertisement, services and consultancy
- Third, electronic data banks
- Fourth, biotechnology, pharmaceuticals, and traditional data banks

As a result, the knowledge-based economy is measured by "knowledge values" via material forms and services; these values bear properties of high technique, high art, and high

are not dependent on their production costs.

This is the first property different from agricultural and industrial ones. The prices of agricultural and industrial products are based on production costs.

For example, in agriculture, the price of a tonne of paddy rice or a pig is dependent on the production cost of that tonne of paddy rice or that pig.

In industry, the selling prices of an electric fan, motorcycle, or automobile are calculated on the basis of

KNOWLEDGE-BASED ECONOMY

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I. Concept

The knowledge-based economy is the economy, which is directed by knowledge, and where the generation and utilization of knowledge play an outstanding role in the process of producing wealth.

The knowledge-based economy includes economic values created by knowledge. They are inventive values which are recognized by the society and indicated via material forms and services. The knowledge-based economy is also called information economy and virtual economy, which is based on the processing and transferring of information to build a non-material economy. The knowledge-based economy is a kind of non-material economy producing consumer goods, which are not worn out and used by many people at the same time in distant places. The

skill which increase value of products and services many times as compared with their production costs.

The knowledge-based economy develops on the foundation of achievements of science and technology. The rapid development of computers and telecommunications networks has boosted information expansion. This enhances knowledge values and thus develops the global economy fast.

II. The properties of the knowledge-based economy

The knowledge-based economy is different from the agricultural economy and the industrial economy. It is the highly developed phase of the world economy's intellect and it has own properties:

1. In the knowledge-based economy the values and prices of products

their production cost and fees of transportation, services, and tax. If the size of fan or auto is larger, more materials will be used to produce them. The higher the quality of materials, the larger the production cost, then the higher their selling prices.

In the knowledge-based economy products are priced differently:

For example, two products (two shirts) are produced with the same materials, but one is made with normal style while another has a unique style and color satisfying the customers' highest requirements and their taste. The latter will be sold at a price three to four times higher than the former. This results from that the intellect is invested in the latter. In addition to the normal production cost, it is added a value of knowledge.

Another example is the prices of two motorcycles, 125 cc, one is Russian Minsk, another is Japanese Honda. Their gap may be ten times because Honda bears a knowledge value that Minsk does not.

2. In the knowledge-based economy, there is no principle of par value exchange

The industrial economy implements exchanges on the par value principle. In the knowledge-based economy, this principle gradually vanishes. The value of knowledge has no direct relation with the production cost. The prices of products are based on markets, tastes, or preferences of customers. The fortune of the knowledge-based economy will

In the industrial economy, the enterprises' income is generated from the fact that products are made serially in large scale. In contrast, the income of the knowledge-based economy is derived from unique, individual and diverse products, which satisfy the customers' requirements and tastes. They are also made with new technologies and materials. As a result, their prices will be multiplied. The category of commodities will soar but the volume of each commodity will go down. This will affect and boost the development of socio-economic sectors and national economy.

5. The knowledge-based economy produces commodities of high knowl-

new products and services are created by knowledge. It can be said that in the industrial economy energy sources are fundamental sources for development, while in the knowledge-based economy knowledge is the decisive source for evolution. The knowledge-based economy provides customers with unique products meeting their requirements in a particular time and soon generated new commodities for new demands. New demands and tastes of customers are ever changing, so the life cycle of products with knowledge values is short. This property indicates the pre-eminence of the knowledge-based economy and spurs economic growth higher than that of



be abstracted and redistribution will become a common trend. The value of knowledge based on social consciousness will turn into normal wealth.

3. In the knowledge-based economy products bearing knowledge value are unique, individual, and diverse.

Needless to say, in the industrial economy there are also unique and diverse kinds of products to a certain extent. However, when coming to the knowledge-based economy, their uniqueness and diversity is promoted to the maximum. The knowledge value is just the uniqueness, individualization and diversity of products and services. This value multiplies their selling prices as compared with the common products and services. The enterprises' sales will skyrocket and the economic growth will be higher.

4. In the knowledge-based economy, the knowledge value has effects on socio-economic sectors and the national economy.

edge values. Many customers are able to use them at the same time in distant places and they are not worn out.

This is the property of the knowledge-based economy different from the industrial economy. Just because of this, socio-economic efficiency of products is hundreds, thousands of times higher than common goods of the industrial economy.

For example, many Internet users over the world can download and use freely a particular software. It is obviously not worn out. The difference between industrial products is equipment and materials while in the knowledge-based economy it is image, concept, knowledge, intellect, and talent.

6. In the knowledge-based economy, the life cycle of a product is shorter over time and products are renewed incessantly.

Thanks to diverse commodities, highly developed science and technology, information society, the circulation of knowledge value is large and changed faster and faster. More

agricultural and industrial economies.

From the above facts and events, we can draw general properties of the knowledge-based economy as follows:

(1.) In the knowledge-based economy, the information technology is widely and strongly used and Internet and electronic commerce play the most important role.

(2.) In the knowledge-based economy creative labor is a major factor. The economy includes mainly intellectual enterprises, hi-tech parks in which the entrepreneur is also the scientist.

(3.) In the knowledge-based economy, the sustainable development is based on humanity, cultural, natural and environmental balance.

(4.) The knowledge-based economy takes shape in the context of globalization, thus always encounters harsh competition. However, the cooperation will bring efficiency and mutual benefits.

(5.) The knowledge-based economy will stimulate the process of democratization, information publicization, and essential disclosure. Decentralized management, electronic government, and cyber-community will become common trends.

III. On the path to the knowledge-based economy

The knowledge-based economy is the new economy including new properties different from those of the agricultural and industrial economies. While in traditional economies, major sources are labor and capital (including natural resources), in the knowledge-based economy they are information and knowledge.

In the new economy, the knowledge value will become the main source for economic development, capital accumulation, and knowledge revolution. The termination of the industrial society will lead to the appearance of knowledge value society. The new economy will change old rules of the industrial era as mentioned above. The concept of knowledge-based economy was created in late 1980s. Nevertheless, the real knowledge-based economy may be fully fledged in late 2010. That is 30 years later. All economies have so far still depended on knowledge values to some extent. Their history of establishment and development may be at least 5,000 years. The world economy changed from traditionally agricultural to industrial one with the industrial pre-revolution period from 1700 to 1820 in England. In 1776-1781 period, English James Watt invented steam engines starting the development period of industrial machinery. The first industrial revolution was undertaken during the 1820-1870 period and the second 1870-1913. The achievements of these two revolutions were applied widely in the two world wars. From 1950 until now, the economic evolution, especially in developed countries, has resulted from progress of intellect, science and technology, and administration knowledge. Knowledge values have made increasingly large contributions to economic growth.

Thanks to robust achievements of computers and telecommunications networks, the storing, processing and transferring of information bring more and more benefits to the global economy. The knowledge value implements the major role in production, business, and services and increases output and boosts economic growth.

The knowledge value accounted for an increasingly large proportion in GDP of developed countries in 1980s. Automobiles become smaller and nicer. They consume less fuel and replace ugly and bulky ones. Home appliances are also produced artistically. They are attractive to customers. The changes in production and technologies as well as artistic renovation of customers have transformed systematically social standards. People's requirements for improvement of living quality are higher and higher because their demands for spiritual living soar. Their requests for quantity reduce but those for quality and spirituality go up. If those societies use more knowledge and computers, the commodities bearing knowledge values will be sold well. Users will tend to choose modern commodities based on their tastes and requirements.

To meet customers' necessities and preferences, producers are required to turn out goods involving great knowledge significance. Those products' prices will increase many times. As a result, those small-sized enterprises producing goods with more knowledge values will have better performance than large-sized ones producing traditional commodities.

The revolution of knowledge value happened after the revolution of industry and career. Diversification, computerization, and resource economization are goals of new technologies. The revolution of knowledge value will lead to the fact that the intellectual will outnumber those engaged in agriculture, transportation and commerce. The number of free workers will reduce. The white-collar workers will step by step become major resource for economic development.

According to Kaiikutai, only the revolution of knowledge value can make extensive changes in communities, and develop them into knowledge value societies totally different from industrial ones.

He says the knowledge-based economy will build a society with major properties:

- Capital goods are identical to labor. Key factors in knowledge value production comprise knowledge, experience, and people's tastefulness.

- Those who both possess capital goods and create knowledge values in urban areas will become the center of development.

- The enterprise organization will change from legal status to individual entity.

- Preferences will be given to entrepreneurs' talent instead of administrative management.

The production of knowledge values based on the selection of time and location which may lead to highest performance is not of large size. The economic efficaciousness depends on skill, judgment, and activeness of the enterprise's leadership.

- The principle of par value exchange will be terminated and the criteria of occupational choice changed. Career decision will be based on individual goals.

- The fortune in the knowledge-based economy will be abstracted.

Under the effects of the technological revolution and globalization, the knowledge-based economy is not only strongly enhanced in developed countries but also established and promoted in developing countries. The knowledge-based economy becomes an international trend.

The world is in the transitional period to the knowledge-based economy with key elements: biotechnology, materials technology, energy technology, and information technology. The economies of the OECD (Organization for Economic Cooperation and Development) countries is now much dependent on production, distribution and utilization of knowledge. The productivity and jobs increase fast in such high-tech sectors as information technology, aviation technology, electricity-electronic technology, as well as knowledge-based services in education and training, and telecommunications. As much as 50% of GDP of the OECD economy comes from knowledge.

Many developing countries and others over the world have been making great efforts to draw up strategies accessible to knowledge-based economy. Newly industrialized countries and territories such as South Korea, Taiwan, and Hong Kong have positively changed their economies into knowledge-based ones. Other East Asian and South-eastern Asian countries such as China, India, and Thailand are also preparing infrastructures for the knowledge-based economy's development.

The knowledge-based economy's prospects have been open. The generator of the knowledge-based economy is just the robust development and improvement of the education and training sector which construct the human resource. Just because of this, to make an approach to the knowledge-based economy is to invest in human capital.■