The Concept of the Information Economy

The information economy increasingly focuses on informational activities and the information industry. The term was coined by Marc Porat, a graduate student at Stanford University, who later co-founded General Magic. The media industry is a prime example of the information economy.

The information economy (in English: Information Economy) is an economy based on a growing focus on information activities and the information industry. Manuel Castells asserts that the information economy does not contradict industrial economy. He observes that some countries like Germany and Japan integrate information technology into manufacturing processes. However, the information economy, in the typical model, is a phase that follows the stages of hunting, agriculture, and manufacturing. This concept is widely linked to the information society, a broader but closely related concept.

The Concept of the Knowledge Economy

The 21st century began with significant transformations, posing many challenges and opportunities. One of the most notable features of this era is the growing importance of knowledge (of which technology is a core element) in the economy, giving rise to what is known as the Knowledge-Based Economy.

Future societies will increasingly be based on knowledge and its dominance. Education is considered the key to enhancing international competitiveness, especially since it is the gateway to the knowledge era and the development of societies through real investment in human capital. This makes the knowledge society and economy deeply linked with the concept of a learning society—where individuals learn to know, to work, to live together, and to achieve self-fulfillment.

The Shift to Knowledge as an Economic Factor

In the old economy, land, labor, and capital were the three main factors of production. In the new economy, the crucial assets are technical knowledge, creativity, intelligence, and information. Embodied intelligence—embedded in software and technologies across a wide range of products—has surpassed the importance of capital or labor. According to the United Nations, knowledge economies now account for about 7% of global GDP and

are growing at an annual rate of 20%. In the EU, 22% of productivity growth is attributed to information and communication technologies (ICT) usage and production.

Peter Drucker used the terms Knowledge Economy and Knowledge Society in Chapter 12 of his book The Age of Discontinuity, emphasizing the role of knowledge in economic growth. Other related terms include the information society, the digital economy, the network economy, and the knowledge revolution.

Defining the Knowledge Economy

Essentially, the knowledge economy is one in which knowledge drives economic growth. These economies rely on the availability of ICT and the use of innovation and digitalization. Unlike production-based economies—where traditional factors drive growth—knowledge economies prioritize qualified, skilled human capital.

In knowledge economies, the relative contribution of knowledge-based or knowledge-enabled industries increases. These often include medium- to high-tech sectors such as financial services and business services.

Characteristics of the Knowledge Economy

The knowledge economy is characterized by:

1. **Efficient systems of commercial and academic linkages to absorb and adapt to knowledge revolutions and tailor innovations to local needs.**
2. **Education as a foundation for productivity and competitiveness—requiring skilled, creative human capital and lifelong learning.**
3. **Information infrastructure based on ICTs that facilitates the dissemination and adaptation of knowledge to local contexts.**
4. **Strong economic incentives and legal frameworks to promote growth and productivity, including greater ICT accessibility, support for small and medium-sized enterprises (SMEs), and lower tariffs on ICT products.**

Globalization and the Knowledge Economy

The global economy is increasingly characterized by two interlinked terms: globalization and the knowledge economy. Key drivers include the ICT revolution and the relaxation of trade barriers. At the same time, there's been a surge in the knowledge intensity of economic activities—driven by the ICT boom and accelerated technological advancement.

Main Drivers of Change in the Knowledge Economy

Key forces reshaping trade and competitiveness in the knowledge economy include:

- **Globalization: Markets and products are becoming global.**
- **Information Revolution: Over 72% of workers in advanced economies are "information workers"—using their minds more than their hands.**
- **Network Connectivity: The Internet and digital networks have made the world more interconnected.**
- **Technological Advancements: These require constant innovation in goods and services, often exchanged through electronic networks.**

The Rise of Information Capital

Some Arab countries, such as Qatar, have invested heavily in the knowledge economy—building educational cities and research centers.

Information capital refers to the value of information as a strategic resource that can be shared and used within and among organizations. It supports authority decentralization, staff empowerment, and improved work processes. Information capital includes data that is valuable to organizational management—stored in internal systems, libraries, or databases—and can even help individuals make better consumption decisions.

The Market for Information Capital

Information capital markets are commercial platforms for buying and selling data—connecting data aggregators with organizations and individuals who need information for various purposes. These markets are increasingly governed by data protection regulations (e.g., the Data Protection Act of 1998).

Examples include credit bureaus and companies like Swiss Safe, which allow users to download and monetize their social media data.

Big Data Era

Big Data refers to data sets so vast and complex that traditional data processing tools are inadequate. Advanced analytics can now enable organizations to analyze data from millions of people globally—minimizing the value of individual data while enabling faster, more accurate, and data-driven decisions.

Experts predict that big data analytics will impact the information capital market more profoundly than even the Internet did.

The Pioneering Work of George Stigler

In his 1961 seminal article The Economics of Information, George Stigler argued that "information is a valuable resource: knowledge is power," yet it has been poorly integrated into economics.

He introduced key ideas:

- **Prices vary, not fixed, and depend on sellers/buyers at any given moment.**
- **Advertising reduces ignorance and is usually paid for by the seller.**

His 12-page article is praised for its originality, insight, and accessibility. It sparked an entirely new field of economic study and earned Stigler recognition as the founder of information economics and regulatory economics.

What is Knowledge?

Linguistically, knowledge is understanding something as it truly is. Scientifically, it is information or facts stored in the mind about something.

Operational definitions include:

- **Justified beliefs that drive personal responsibility and effective actions.**

- **Experience-based or study-based understanding.**
- **Communication-ready information, distinguishable from mere data.**

Knowledge is derived from information, which in turn comes from data. It exists in two main forms:

- **Explicit knowledge: Found in formal language, books, equations, etc.**
- **Tacit knowledge: Personal, intuitive, hard to codify or transfer.**

Four Types of Knowledge Based on Encoding:

1. **Descriptive knowledge: Traditional, inherited information.**
2. **Causal knowledge: Understanding the reasons behind phenomena, often sourced from education and research.**
3. **Procedural knowledge: Experience and skills used in managing people, operating processes and machines—often proprietary and hard to obtain.**
4. **Expert knowledge: The ability to perform tasks accurately and economically.**

A country that only controls the first two types is still in the information economy phase. Those that control the latter two are transitioning to or establishing a knowledge economy.