

# Analysis of knowledge based economies



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DEFINITION AND THEORY OF KNOWLEDGE BASED ECONOMY

*“ The weakness or even complete absence, of definition, is actually pervasive in the literature... this is one of the many imprecisions that make the notion of “ knowledge economy” so rhetorical rather than analytically useful” [1]*

1. What is Knowledge Economy or Knowledge Based Economy? As Keith Smith puts it rather succinctly, the question itself comes across as rhetorical. There is no dearth of publications, texts or studies on Knowledge economy, but defining it has seldom been the prominent feature of such literature. This may be attributed to the fact that the concepts of knowledge economy or knowledge worker are difficult to pin down. As a report of CERI Washington Forum, June 1999 put it *“ the science of describing, understanding, and measuring knowledge will always be an imperfect one. The knowledge identified in this forum turned out to be capricious: sometimes sticky, often slippery, rarely tangible, frequently tacit, and extremely heterogeneous”*. [2] This has resulted that the knowledge economy and knowledge worker are often taken as self-evident and in some cases are not tested against hard data. This also then implies that Knowledge is an abstract notion, which is constantly and continually being defined.

“ Knowledge” is perhaps the simplest of words and yet one of the most cumbersome to explain. This is primarily due to its paradoxically straightforward and simple syntax and yet its profound vastness in terms of its semantics, as its concept has evolved and escalated over millenniums of human existence. Albeit the abstractness and the intangibles associated with

knowledge economy, there emerge certain definitions which aid in the understanding of the concept.

2. Defining Knowledge. “ Knowledge” can briefly be described as a person’s understanding of something or the information he/she has about something. Knowledge is what is known. It is a ‘ noun’ that has synonyms, such as ‘ cognition’ and ‘ noesis’. Like the related concepts of truth, belief, and wisdom, there is no single definition of knowledge on which scholars agree, but rather numerous theories and continued debate exists about the nature of knowledge. In fact “ knowledge” has numerous meanings, as given in dictionary. Oxford Dictionary defines knowledge as awareness, familiarity, facts, information, and skills acquired through experience or education; person’s range of information; or the theoretical or practical understanding of a subject[3]. It is the state of knowing something, the familiarity, awareness or understanding acquired through experience or study, the sum of what has been perceived, discovered or learned, or simply, the specific information about something or someone. Peter F. Drucker has also given a functional definition of knowledge, referring to it as information that changes something or somebody – either by becoming grounds for actions, or by making an individual (or an institution) capable of different or more effective action. But finally, in a more global sense, one might say that knowledge is reliable information that can be put to work in the service of all men, and which can be communicated in comprehensible ways, so that people everywhere can become more self-reliant and self-sufficient.

3. Knowledge as an Economic Good. It is common knowledge today that disparities in the productivity and growth of different countries have less to

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do with their lack or abundance of natural resources than with their ability to improve their quality of human resources and other factors of production.

The World Development Report 1999 states: *' For countries in the vanguard of the world economy, the balance between knowledge and resources has shifted so far towards the former that knowledge has become perhaps the most important factor determining the standard of living – more than land, than tools, than labour'*. Today knowledge and technology are two of the key-factors of production. In fact, knowledge is considered to be the basic form of capital, and economic growth is understood to be driven by the accumulation of knowledge.

4. A knowledge based economy therefore can be defined as an economy that creates, disseminates & uses knowledge to enhance its growth & development. A country's success in the knowledge-based economy depends on the creation, acquisition, dissemination & application of knowledge. Knowledge creation depends on the intensity of research & development (R&D) conducted in a country, & the availability of human resources needed for R&D.

5. Knowledge acquisition is reflected in intellectual content embedded in imports from other knowledge-based economies. Linguistic skills will help to plug into the global knowledge network. Knowledge dissemination depends on the resources allocated to develop information infrastructure, basic information technology (IT) & linguistic skills to tap into the information - communication technology (ICT) network.

6. Finally, knowledge application is reflected in an economy's job market that demands and allows workers to apply knowledge extensively and its ability to create new business models for generating, acquiring, diffusing & applying new ideas & processes.

7. The best exponent of knowledge economy and its theory has been Peter Drucker. He apparently first used the phrase “ the knowledge economy” in his 1969 book *The Age of Discontinuity*. [4]Thirty-two years later, still going strong, Drucker wrote in the November 2001 edition of *The Economist* : ‘ The next society will be a knowledge society. Knowledge will be its key resource, and knowledge workers will be the dominant group in its workforce. Its three main characteristics will be:-

(a) Borderlessness, because knowledge travels even more effortlessly than money.

(b) Upward mobility, available to everyone through easily acquired formal education.

(c) The potential for failure as well as success. Anyone can acquire the “ means of production,” i. e., the knowledge required for the job, but not everyone can win.’[5]

8. But because of the varied ways in which knowledge-economy is interpreted, testable definitions of this term are difficult to state. Some more definitions of Knowledge based economies are given below:-

(a) “ *The idea of the knowledge-driven economy is not just a description of high-tech industries. It describes a set of new sources of competitive*

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*advantage, which can apply to all sectors, all companies and all regions, from agriculture and retailing to software and biotechnology” – Charles Leadbeater [6]*

*(b) ‘ We define the knowledge-economy as production and services based on knowledge intensive activities that contribute to an accelerated pace of technical and scientific advance, as well as rapid obsolescence. The key-component of a knowledge- economy is a greater reliance on intellectual capabilities than on physical inputs or natural resources’- Carlaw, Oxley & Walker, 2006. [7]*

*(c) “ An economy whose growth momentum and competitive advantage are driven by dynamic investment in intellectual capital and innovative R & D, with deep structural, institutional and organizational implications.” [8]*

9. Reading through these definitions, a few essentials of a knowledge-driven economy become quite clear ie:-

(a) Innovation is a permanent feature.

(b) It is an economy of networks at different hierarchical levels.

(c) It embodies new forms of organization that involve industrial cooperation, polarization and relations between public and private sectors.

(d) Human-capital plays a fundamental role, and the capacity to learn is more important than the level of knowledge.

(e) Codified and distributed tacit-knowledge is useful.

(f) Proliferation of information-related activities is evident in all sectors of the economy.

Traditional versus Knowledge Based Economy . The basic difference between a traditional & knowledge-based economy is that the former depends on quantitative factors such as labour, raw materials, premises & bulk transportation, among others, whereas the latter relies more on qualitative factors, namely, qualifications, R&D & good infrastructure. Resource-driven economies sometimes depend on a protectionist environment, whereas knowledge-based economies thrive in a friendly & open policy environment, & on innovation & qualified lab. If the economy means traditionally the science of rarity; resources rarity versus multiple and unlimited needs, the knowledge economy in light of digital technology is an economy of abundance. This is attributed to the fact that knowledge cannot be consumed or exhausted. Rather it multiplies through the transfer to other knowledge. Whereas traditional economy resources are consumables and finite.

10. Pillars of Knowledge based Economy . There are four pillars of a knowledge based economy on it rests, sustains and prospers. These four pillars carry the equal amount of responsibility and are therefore the roots of knowledge based economy. These are:-

(a) Information Infrastructure . It deals with things like effective communication, information processing and spreading knowledge.(World Bank Team 2006)

(b) Economic and Institutional Regime (EIR). It provides benefits in terms of finance for the creation and development of knowledge and also for Knowledge reuse.

(c) Education. This pillar is one of the most important since well educated and skilled people are the main sources for using and creating knowledge effectively.

(d) Innovation. It consists of design, development and diffusion of a technology which is new to society concerned.[9]

### CHAPTER III

#### KNOWLEDGE BASED ECONOMIES OF THE WORLD AND INDIAN CONTEXT

*“ Throughout all the years and in everything we do, we have focused most of all on the development of human capacity, beginning with our own professional staff, and leveraging their expertise to enrich the Arab community. We have embraced the concept of the ‘ knowledge worker’ and have sought to empower our people and the Arab world’s people to dream, to imagine, and to create.” Talal Abu-Ghazaleh [10]*

The Singapore Study .“ ALTHOUGH the pace may differ, all [rich] economies are moving towards a knowledge based economy.” The OECD made this claim in 1996 and few disagree. Case in point is Singapore. The Singapore economy grew at an average annual rate of 8. 5 % from 1965 to 1997 before the regional financial crisis of 1997-98. It overcame the crisis but then had to reinvent itself in order to meet the challenges of the twenty first century and maintain its record of sustained, rapid growth. Small size clubbed with lack of



natural resources brought in critical labour shortages cost rise. This forced an upgrade with focus shifting to knowledge operations. Today Singapore's status as a most admired knowledge-based city reflects how government policies have successfully negotiated the current global network economy to suit economic changes. Since the independence of Singapore in 1965, the government has successfully deployed technocrats, mainly economists and engineers who use their professional and technical skills in government to create and manage economic systems that will further the general good. And government policies at each phase of Singapore's development have contributed to crafting the Singaporean culture. In recent years, for examples, Singapore's commitment to knowledge-based economy (KBE) development has won her recognition for being the most admired knowledge city (MAKCi) in the World Capital Institute and Teleos ranking for the two years running in 2007 and 2008.

With a population of 5 million and a per capita income of US\$48, 979[11], the government has successfully funded the growth of industrial parks focused on nurturing innovation in technology and biotech. Singapore's universities receive extensive support from the government, helping to make the country an attractive destination for multinationals seeking a well-educated workforce. It has been ranked consistently amongst the top 25 in the World Bank's Knowledge Economy Index (KEI) in recent years, numbering 23rd in 2012 World Bank comparisons. In a recent survey conducted by its Boston Consulting Group (BCG) consultants, Singapore was featured as one of the world's most innovation-friendly countries in terms of both " inputs" (government policies supporting education, workforce quality,

infrastructure, and trade) and “ performance” (R&D results, business performance, employment growth, and other impacts of innovation). It was ranked as number two in the Global Competitiveness Index of the World Economic Forum for 2012 – 2013 behind Switzerland and ahead of Finland, Sweden and the Netherlands[12]and number 4 in the Bloomberg’s Best Countries for doing Business Ratings for 2014[13]. The impressive economic growth record of Singapore in the last four decades has been achieved through continuous industrial re-structuring and technological upgrading (Wong, 2001). Singapore has continuously relied primarily on knowledge transfers through MNCs and foreign talents (Toh et al., 2002). Since the late 1990s, the Singapore government has forged an environment that is conducive to innovations, new discoveries and the creation of new knowledge and one that harnesses the intangibles such as ideas, knowledge and expertise (Ministry of the Arts and Information, Renaissance City Report, 2000). The Singapore experience, however, represents one of few examples of how knowledge can become the driving force of economic growth and transformation. Singapore’s information society development trends have been shaped by its developmental state (Wong, 2004) and in the past decade, the Singapore government is keen to use content and creativity to enter the next wave of development in the so-called ‘ creative economy’.

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[1]Keith Smith. *What is the Knowledge Economy? Knowledge Intensity and Distributed Knowledge Bases* , Institute for New Technologies Discussion Paper 2002-6, The United Nations University, June 2002).

[2]John F. Kennedy and Europe by Douglas G. Brinkley and Richard T. Griffiths and Theodore C. Sorensen

[3]Oxford Dictionary p 419.

[4]Peter F. Drucker, *The Age of Discontinuity: Guidelines to Our Changing Society* (New York: Harper and Row, 1969).

[5]Peter F. Drucker, "The Next Society," *The Economist* (November 1, 2001), <http://www.economist.com/node/770819>.

[6]Charles Leadbeater Welcome to the Knowledge Society, *theguardian.com*, <http://www.theguardian.com/books/2000/feb/01/livingonthinair>.  
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[7]Beyond The Hype: Intellectual Property And The Knowledge Society/Knowledge Economy Kenneth Carlaw, Les Oxley, Paul Walker, Article first published online: 30 AUG 2006 in *Journal of Economic Surveys* Volume 20, Issue 4, pages 633–690, September 2006.

[8]Business Outlook – Michel Henry Bouchet – CERAM – International Workshop Seminar (2008)

[9]<http://ratnadholakia.blogspot.in/2010/01/what-is-knowledge-economy.html>

[10]Talal Abu-Ghazaleh is the chairman and founder of the international Jordan-based organisation, the Talal Abu-Ghazaleh Organization.

[11]Singapore Yearbook of Statistics, 2012

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[12]WEF: The Global Competitiveness Index Report, 2014-2015, Table 3, page 12.

[13]<http://www.bloomberg.com/slideshow/2014-01-21/best-countries-for-business-2014.html#slide18>