

Study of Weightless Economy and Knowledge Economy

Abstract

This paper aims to investigate some characteristics of a knowledge based economy and on the other hand the new technologies used. The weightless economy is also described by some as a feature of a knowledge economy where knowledge is widely traded as an intangible product, not just used as a tool to manufacture physical products. In such an economy, an individual who possesses that ability to produce intangible products through creativity and know-how is able to grow wealthy even without possessing significant economic resources. This aspect of the weightless economy is demonstrated by the stories of Apple and Microsoft, among others. We recognize the extraordinary technical performance of current electronic systems. But they respond to actual needs of society.

Keywords: Educational Ideal, Knowledge Economy, Electronic Training.

Introduction

Knowledge Economy

The knowledge economy is a system of consumption and production that is based on intellectual capital. The knowledge economy commonly makes up a large share of all economic activity in developed countries. In a knowledge economy, a significant part of a company's value may consist of intangible assets such as the value of its workers' knowledge (intellectual capital), but generally accepted accounting principles do not allow companies to include these assets on balance sheets. The knowledge economy is the use of knowledge to generate tangible and intangible values. Technology and in particular, knowledge technology help to transform a part of human knowledge to machines. This knowledge can be used by decision support systems in various fields and generate economic value. Knowledge economy is also possible without technology.

Lesser-developed countries tend to have agriculture and manufacturing-based economies while developing countries tend to have manufacturing and service-based economies and developed countries tend to have service-based economies. Most countries' economies consist of each of these three major categories of economic activity but in differing proportions relative to the wealth of that country. Examples of knowledge economy activities include research, technical support and consulting.

In the Information Age, the global economy moved towards the knowledge economy. This transition to the Information Age includes the best practices taken from the service-intensive, manufacture-intensive and labor-intensive types of economies and added knowledge-based factors to create an interconnected and globalized economy where sources of knowledge like human expertise and trade secrets are crucial players in economic growth and are considered as important as other economic resources.

The knowledge economy addresses how education and knowledge generally called human capital can serve as a productive asset or a business product since innovative and intellectual services and products can be sold and exported and can yield profits for the individual, the business and the economy. This component of the economy relies greatly on intellectual capabilities instead of natural resources or physical contributions. In the knowledge economy, the production of services and products that are knowledge-based provides rapid acceleration in the technical and scientific fields, making way for more innovation in the economy as a whole.

Weightless Economy

A portion of the economy which exchanges intangible services and products including software, databases and intellectual property. There are at least two key features of the weightless economy. First, products

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have a high initial cost to develop but a very low cost to reproduce and distribute. Second, products can be distributed infinitely. These two factors mean that the weightless economy can be among the fastest growing and most profitable sectors of business.

The weightless economy, also known as the dematerialized economy, refers to the products and services that have no weight, they are abstract or intangible – you cannot touch them because they have no mass. For example, computer software – which we download online or obtain from a disc – has no weight; you cannot see or touch it, it is abstract. However, it is a product that consumers use and usually have to pay for if they want it.

According to *The Economist*, the United States' total output in the year 2001 weighed approximately the same as it did in 1901. However, the total value of that output, in real terms, was more than twenty times greater. Much of the increase was due to the dramatic explosion of the weightless economy. Intellectual capital today, rather than physical materials, is representing an increasingly greater proportion of GDP (gross domestic product) in most countries across the world.

In modern history, the advanced economies have undergone two major milestones:

1. Industrial revolution.
2. The IT (information technology) and telecommunications revolution.

Our current post-industrial economy relies on IT and telecommunications – ICT (information and communications technology) to produce high-value output of knowledge, exchangeable information and intangible goods.

Today's weightless economy consists of ICT as well as intellectual assets/patents. Copyrights, trademarks, images, electronic libraries, bio-technologies and millions of other things that have appeared online over the past twenty years.

We are seeing an economy today, which emerged at the end of the last century that is qualitatively quite different from the one that dominated throughout the 20th century.

The weightless economy offers both the developed and emerging nations a high potential for growth. The Knowledge Economy, part of the weightless economy, is the use of knowledge to generate values both tangible and intangible. Knowledge technology helps to transport a part of human knowledge to machines. This knowledge can be utilized in various fields to generate economic value. The knowledge economy does not always need technology – it is also possible without it.

Objectives of The Study

1. To study the impact of Weightless Economy on Business.
2. To study the benefits of Weightless Economy.
3. To study the impact of technology for cashless economy.

Review of Literature

Since the 1960s there has been a growing awareness of the decline of the importance of the control of resources for wealth creation, the emerging

dominance of specialist knowledge and competencies, as well as the management of organizational competencies and knowledge. Drucker (1993) has pointed out that in the eighteenth century the basis for economic development was machines and factories and new industrial technologies. This knowledge was applied to tools, processes and products. The early part of this century was marked by the development of new forms of knowledge characterized by systems of embedded knowledge applied to human work. This was the knowledge of systematic routines. In the late 20th century new forms of knowledge are now becoming necessary and specialized knowledge workers are growing in number. These workers are unlike previous generations of workers, not only in their high levels of education, but because for the first time they own the organization's means of production - knowledge.

Technological innovation and access to knowledge and skills are seen by many as increasingly drivers of innovation, and their application has become central to the competitive strategy of firms. Kanter (1995) has argued that future success will come to companies that can meet global standards and tap into global networks. Similarly, it seems likely that the cities and regions that will be most successful in the 21st century will be those that are best at linking businesses to the global economy. Hobday (1995) has pointed out that technological innovation has played a significant role in the economic transformation of many Asian countries. We have already seen that entire industries and geographical regions can be invigorated by technological change. For example, it has been estimated by Cooper (1993) that new products less than five years old account for 52% of sales and 46% of profits for US firms. At all levels, it appears that competitiveness increasingly depends on technological innovation and new knowledge.

Cairney (2000) has suggested that regions seeking to compete more effectively within a world economy will need to develop 'soft structures' that support knowledge creation and learning and that enable firms to collectively strengthen a region's capacity for knowledge creation and innovation. Key institutions such as universities, VET providers, regional development organizations and business chambers are amongst the most important institutions within regions. Such organizations act as key knowledge creators and trainers, as well as a means to collect relevant knowledge in the international domain and vehicles for communicating this effectively through a variety of mechanisms and relationships. Within the "traditional economy", the knowledge economy is developing continuously as a direct consequence of the increase of importance of knowledge in economic processes in all economic sectors (Mehmood & Rehman, 2015; Viedma & Cabrera, 2012).

Concepts and Hypothesis

There is no universally accepted definition of the knowledge based economy. As a concept, it is very loosely employed and embraces a number of quite different visions of the economy and society.

Remarking An Analisation

One view, most evident in DECO publications, sees it as very much bound up with the high skills/high performance/high value added scenario as the only way for firms to compete in a globalised economy. Another view, found principally in the scientific and technical community, tends to view it more narrowly as applying to knowledge intensive industries where knowledge itself is the core competence. The latter is typically found in software and internet companies, computer hardware and chip manufacturers, computer and electronic equipment sectors, and health care technology.

Methodology of The Study

This is a conceptual paper and the researchers has adopted the method of reviewing different research articles, research journals, and case studies, to collect data about economic role of Weightless Economy in Knowledge Economy which is consequently incorporated as a conceptual paper drafted by the researcher. The study is based on secondary sources of data.

Features of Weightless Economy

There are three main features of the weightless economy:

Development Costs

Virtually all the components of the weightless economy are extremely expensive to develop. Creating a new video game or hi-tech software requires a lot of money up front. However, as soon as you have the finished product, getting it to consumers is cheap and easy (compared to physical goods).

Unlimited Distribution

When Microsoft or Apple creates a new software, they can then sell it to literally every single person in the world. In theory, if everybody globally wanted it, the product could be delivered to their computers within one day. This would be impossible with, for example, a new car. If 7 billion people wanted

the latest Maruti Swift Model, it would take several years to make them all, and deliver them to each customer.

Low Production Costs

If I create a new video game I can get a retailer like Flipkart to sell it for me. Every time one is produced for a new customer (really it is just a copy), the costs are minimal, compared to producing units of physical products.

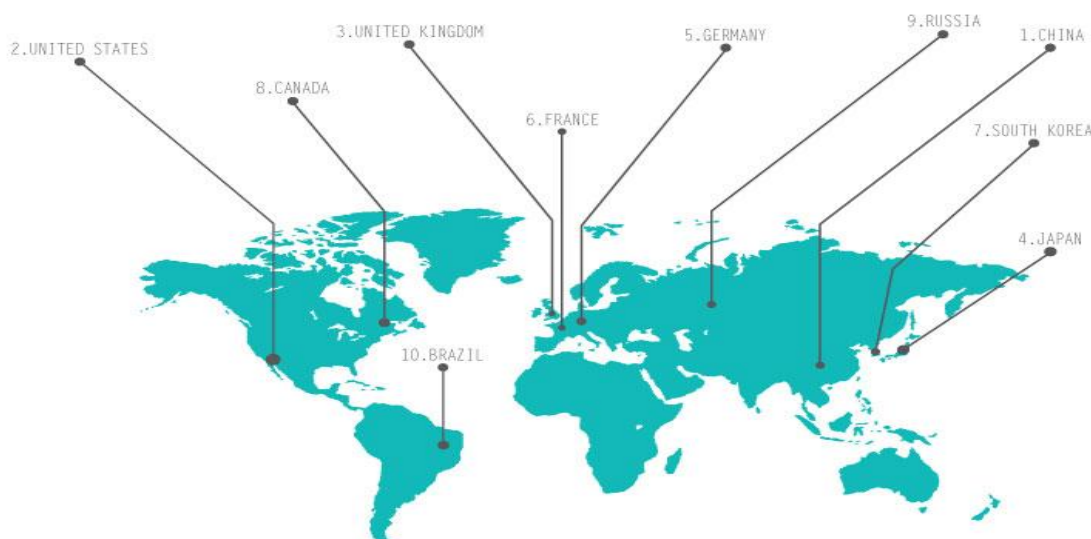
Benefits of Weightless Economy

The benefits claimed for the new economy are mainly concerned with technological change, productivity and economic growth. Manuel Castells (2001) argues that we have entered a new technological paradigm centered on microelectronics-based information/communication technologies. The development of the internet, in particular, is said to have profound implications for the organization of economic activity and for increasing productivity.

The internet provides a new communication medium between businesses and between businesses and consumers and facilitates new ways of organizing the production, distribution and exchange of existing goods and services. It can reduce transaction and search costs between buyers and suppliers in a wide range of areas and allows the development of new products and services. These developments arguably underlie the unprecedented growth in the US economy in the second half of the 1990s.

Internet business-to-consumer sales are expanding rapidly but nowhere do they account for even **e-commerce sales as % of total retail sales:** 10.1% – being highest in China followed by the USA and the UK (emarketers.com, 2014).

TOP 10 ECOMMERCE MARKETS BY COUNTRY



Sources: emarketer.com

Evidence on the comparative costs of internet sales is mixed. In principle, consumers can save on search and travel costs by comparing prices and purchasing directly from home. They have immediate access to world markets, which could stimulate competition and bring about increases in efficiency at a global level. Suppliers would also save on showrooms but their overall delivery costs could rise as distribution would switch from high to low density routes— that is, instead of journeys from warehouses to shopping centers, more diverse journeys from factories to residential areas would need to be made (OECD, 2000). This problem would not arise in the case of 'weightless' or digitized products, which can be distributed very cheaply and incur minimal storage and inventory costs.

A further potential efficiency gain for producers is that they can target their marketing much more effectively as it is easy for them to build up a profile of their clients, allowing a form of mass customization. Amazon.com, for example, recommends new purchases to clients by comparing their purchase records with other clients. A firm called Babycenter.com tailors their information to parents according to the stage of pregnancy or age of the children (Borenstein and Saloner, 2001). Thus, by using their electronic databases, constructed in part by the consumers, firms can provide individualized and what appear to be personalized services far more efficiently than by traditional face-to-face contact.

Thus, there are some advantages for consumers, even though the technology potentially allows sophisticated forms of price discrimination as prices could in principle be varied according to the individual customer profile (OECD, 2000). Consumers can also organize auctions and exchange products on the internet, as in the case of the Napster music system, which essentially allows users to download each other's CDs. At the time of writing, the legality of this system is being challenged in the courts. Consumers and protesters, for example the anti-sweatshop movement, can also exchange knowledge about the actions of companies very quickly, thereby enabling more effective monitoring of the ethics of trade (Klein, 1999).

Companies involved in training, marketing and public relations have also begun to provide these services through the internet. These activities have generated a range of new firms and new employment. The jobs include the computing technologies themselves (hardware and software) for managing web-based transactions and have created a whole new range of activities from web-based graphic design, web system/database management, video installations through to programming. Because many of these activities are at the boundaries of new technologies, it has led to the development of small firms and micro enterprises which fueled the so-called dot.com boom.

The Women's Unit of the UK government has argued that ICT represents 'one of the biggest opportunities for women in the twenty-first century to earn more, have more flexible working practices and

adapt their current business or try a business start-up'. Thus, they maintain that 'self-employment and enterprise offer women a real alternative means of earning good income and achieving greater flexibility in their working lives'. That is, given the way that contemporary technologies extend the range of working opportunities both temporally and spatially, they potentially provide a means of redressing current gender inequalities. 'Family friendly' working patterns, if not quantity of work, can be constructed by entrepreneurs, homeworkers and freelancers who can manage their own routines. In some ways they may realize the vision of the 'electronic cottage' (Toffler, 1980), although the problems of social isolation and family tensions also have to be recognized (Perrons, 2001). However, women also face constraints. In the UK, for example, they are under-represented on ICT courses, the proportion of women working in these areas has fallen and they have more problems obtaining access to capital. The limited evidence suggests that the gender balance has not changed.

One of the reasons why it might be difficult to establish statistical associations between productivity growth and ICT is that they are general purpose technologies, so their effects are wide ranging. E-commerce can potentially increase efficiency, as discussed above, but the physical delivery of products, where necessary, remains a labor-intensive activity. Thus, it is very difficult to gather data that might adequately describe the complex and diverging nature of the new economy.

Changes in the organization of economic activity also lead to employment changes at both ends of the employment hierarchy. At the upper end, highly skilled specialists in computer programming, systems analysis and web design are employed in setting up systems to facilitate internet transactions. At the lower end, people are employed in warehouses and call centers. So the high-technology side of the new economy remains dependent on some labor-intensive work in delivering products and in all forms of personal services. Aggregate statistics bury these divergent trends.

Future of Weightless Economy

Economists say that the economies of the world's leading industrial nations will double in size by 2036 – as long as we do not have a devastating war or a catastrophic natural event like a killer asteroid impact or a mega volcanic eruption. They also predict that virtually all that economic growth will come from things that have no weight.

In other words, the weightless economy will grow dramatically while the physical economy will either stay much the same, or may even shrink. Many physical products we use today are much smaller than they used to be. Compare how most of us listen to music these days with the giant stereo equipment that once filled our living rooms in the 1960s and 1970s. Our future lies in ideas, information, knowledge and services. This is where greater value will be created.

Digital and Weightless Economy

The term 'Weightless Economy' became extremely popular during the 1990s. Since then, other terms have become more fashionable. The Digital Economy also known as the Internet Economy, the New Economy or Web Economy refers to an economy based on digital computing technologies. Don Tapscott, a Canadian business executive, author, consultant and speaker, coined the term 'Digital Economy' in his book – The Digital Economy: Promise and Peril in the Age of Networked Intelligence published in 1995. It was one of the first books to consider how the Internet would change the way people did business.

Weightless Economy: Where will it end?

I have two newspaper subscriptions – the Financial Times and the Wall Street Journal. I read both of them every day, each one at least 300 times annually. In all that time I have not physically touched the physical (printed) version of either publication.

Imagine how much one year's worth of printed FTs and WSJs would weigh, and compare that to their weight in online or digital form – weightless.

If any man or woman aged 40 years or less walked into a newspaper office in the 1950s, they would be shocked by three things:

1. The amount of noise – this was mainly due to typewriters.
2. The amount of smoke – the majority of adults smoked in those days and did so everywhere, even in movie theaters and airplanes.
3. The amount of physical things everywhere, especially paper. Desks had piles of paper on top of them.

The world has changed considerably. Modern offices are quiet places, desks are virtually completely free of paper. In fact, in many companies, a growing proportion of employees are working remotely – usually at home.

Digitalization and automation are advancing apace. Mark Carney, the Governor of the Bank of England said last week that over the next few decades robots will be taking over more and more jobs, pushing about fifteen million people across the United Kingdom out of work.

In pre-history, humans discovered how to make fire, we then invented the wheel, made things with bronze and iron, took a huge leap during the industrial revolution. Then came the ICT revolution and the weightless economy. Where will it all end – what will come next?

Research and development in artificial intelligence creating intelligent machines that work, behave and think like humans and is progressing apace. Several eminent scientists and business people, including Steven Hawking, Bill Gates and Elon Musk, believe that intelligent robots may soon be cleverer than we are. They say that prospect frightens them.

Prof. Hawking said last year: "The development of full artificial intelligence could spell the end of the human race."

How can digital platforms help?

Each of the small businesses (read street vendors, roadside stalls, etc.) are losing money by the hour. After Demonetization in India shopkeepers face financial crisis, there is hardly any customer in the market. Even the customers without enough hard cash are vary of spending whatever lower denominations they are carrying around. They would rather pay through a credit card, debit card, or a digital wallet. In this situation, businesses have no option but to switch to plastic and digital methods of transactions.

Digital platforms can proactively start scouting for businesses who are not enrolled with digital or plastic payment systems already and help them sign up instantly. They should lower or remove the sign up friction, if any. They can also incentivize the customers who help the businesses in signing up. It is surely the best time to digitize the transactions and evangelism can really help the cause.

Findings

The central concern of the knowledge based economy is the need for modern industrialized nations to adopt a high skills and knowledge driven approach to economic development competitive strategy. As our review has shown, this will involve the development of new occupations as well as skill and knowledge changes in existing ones. As well, it will be associated with changes in the structure of firms and the way they relate to other customers and competitors. This will also be associated with an increased demand for innovation within the individual worker, the firm, clusters of companies, regions and indeed complete economies. Our review has suggested that understanding innovation is crucial for understanding the dynamics of 'knowledge based' economies. In modern innovation theory, networking, interdependency and learning through interaction lie at the heart of the innovation process. Research has also shown that innovation is not a linear process, but is actually non-linear, iterative and interactive. Hence, innovation is a dynamic social process involving complex interactions between various actors and institutions that actively seek to learn from one another. To successfully innovate, companies are becoming more dependent on complementary knowledge and know-how in firms and institutions other than their own, as well as on knowledge arising from ongoing dialogue and interaction between producers and consumers. Training and education must do more than simply develop skills and specific knowledge, it needs to prepare workers for lifelong learning and to be part of the process of innovation in whatever industry employs them.

Conclusion

It seems to bring a positive change. When and how deeply does it change our digital commerce habits, is something that seems to be making everyone in the ecosystem quite excited and curious.

I'd be observing the shift in pattern over the next few days and try to share the possible effect in a story quite soon especially in India as weightless economy.

Suggestions

Our findings will need to be examined in the light of current government policy and practices in the VET sector. An important issue for our research to grapple with is the extent to which the current focus in VET on competencies and training packages for specific occupations is suited to the needs of emerging knowledge based economies. There are a number of other potential policy considerations for the

Board that will arise from our research. These include the role that VET might play in stimulating the development of regions, the suitability of existing provisions to meet the needs of emerging industry structures such as networks and clusters, and the extent to which VET can meet the need for generic skills that tend increasingly to transcend employment classifications and industry sectors. More recent concern within the VET sector with market based approaches, increased emphasis on the workplace as a site for training, online delivery and alternative pathways for training, suggests a preparedness to consider change and adaptation to meet industry needs.

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