

Shift in the Regional Balance of Power From Europe to Asia: A Case Study of ICT Industry

Jin Hua*, Zahid Latif**, Shen Tiyan*, Zulfiqar Hussain Pathan**,
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Abstract

Information and communication technology (ICT) is increasingly recognized as an important driver of economic growth, innovation, employment and productivity and is widely accepted as a main feature of development. During the last couple of decades, ICT sector became the most innovative service sector that affected the living standards of human beings all over the world. In the beginning of the 21st century, some of the Asian countries made reforms in the ICT sector and spent an enormous amount for the progress of this sector. On the other hand, developed countries in the European Union (EU) faced different crises which badly affected the dissemination of this sector. Consequently, EU countries lost their hegemony in the field of information technology and resultantly, some of the emerging Asian countries like China, India, and South Korea got supremacy over the EU in this field. Currently, these countries have a strong IT infrastructure, R&D sector, IT research centers working for the development of ICT. Moreover, this paper investigates reasons for the shifting of the balance of digital power from Europe to Asia.

Keywords

Digital Power, European Union (EU), Game Changer, Information and Communication Technology (ICT), One Belt, One Road

1. Introduction

In 20th century the human being has seen unprecedented development in information and communications technology (ICT) in comparison with the previous centuries. During the last decade of the 20th century, ICT are coupled with rapid economic growth. Presently, ICT sector has modern technology infrastructure along with latest applications in world economies. The global economy is facing many challenges as advanced economies are declining and emerging economies continue to expand their grounds. The level and duration of these developments are unprecedented. Also, recent developments in the field of ICT such as cloud computing affects the trend of economies. We can define the trend as a shift in the regional balance of power. As the world's economic balance of power is shifting quickly, this trend has been accelerated due to the global recession. China overtakes the United

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States as the world's largest economic power and India enters the race of these two countries as another big economy. After the great global recession, the world's balance of economic power in term of gross domestic product (GDP) was gradually shifted to the South and East [1]. Currently, the western industrialized countries are trying to get the growth momentum after the recession tragedy but they haven't fully recovered yet. On the other hand, the developing nations including Asian countries suffered comparatively less than the industrial countries and recovered rapidly after the recession. In the next years, the developing Asian countries accelerated their industrial growth, particularly in information and communication sector [2,3].

A steep decline has seen with the occurrence of 9/11, which resulted in the steady attrition of economic certainty that finally concluded with the great geopolitical obstruct of the western financial crisis [4,5]. It has now become the truth of the 21st century that the Western world (Europe) is rapidly losing its superiority in the field of ICT and is replaced by a new international system shaped by a geographical entity known as Asia [6]. Most of the developing Asian countries have large population, capital and technology, as a result their global GDP share will increase and consequently shift of economic balance of power can be seen. Asia has the greater most number of internet users around the world and it covers almost half of the whole world. On the basis of internet usage and population statistics, Asia covers 45.7% of the world internet users, while rest covers the remaining 54.3% (Table 1, Fig. 1).

Table 1. Analysis of internet usage in Asia and rest of the world in June 2016

Region	Population Est. 2016	% Population of the World	Internet users on 30/06/2016	Penetration (% Population)	% Internet users
Asia	4,052,652,889	55.2%	1,846,212,654	45.6%	50.3%
Rest of world	3,287,506,603	44.8%	1,829,612,159	55.7%	49.7%
World total	7,182,406,565	100%	3,035,749,340	42.3%	100%

Source: Internet World Stats.

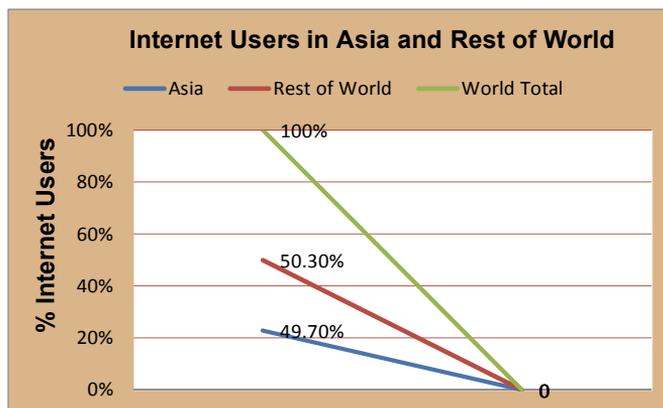


Fig. 1. Internet users in the world by regions.

The above analysis shows the internet penetration and usage in Asia and rest of the world. The figure clearly describes the shift of technology towards Asia. Although due to low GDP and poverty, many

people in Asian countries do not have access towards the internet but the figures show a richer tendency for these countries. China has one of the biggest communication networks in Asia, as well as in the whole world. The ICT semiconductor industry has become one of the key industries of People Republic of China and has a huge potential to do business in ICT. This industry has undergone a rapid change of growth and development during the past decade [7]. The ICT sector in Asia includes goods and services that process, transmit or receive information. It includes technologies such as hardware, software, computer services, microelectronics, e-learning, e-business, e-health, multimedia, as well as emerging technologies such as photonics, fixed and mobile network convergence, life sciences, environmental sciences, Internet of Things, mobile internet, cloud computing and digital imaging [8]. In current ICT industry, the most emerging technology is photonics and optical communication all over the world, and especially in Asia. Actually, nowadays every user around the globe is demanding high bandwidth for triple play services. In this regard, the most recent study has been conducted by Ullah et al. [9,10], in which authors proposed a novel technique for the transmission of optical fiber which can carry large bandwidth with comparative less noise and cost.

In this paper, we proposed a study that gives qualitative descriptions about the shifting of digi power to Asia from Europe. It highlights the possible reasons for the decline of European ICT industry as well as a comparative study of Asian and Europe ICT industry. This study provides a blueprint for all stakeholders including ICT and triple play service providers companies, IT policy makers, and independent researchers to carry out further studies.

2. Research Background

2.1 Literature Review

A comprehensive definition of technology is given by Zeleny [11], he defined the technology as; *technology is neither a thing, nor a tool; it is a form of social relationship and only it can be properly understood, discussed and managed.*

Furthermore, he argued that any technology consisted of three components, hardware, software, and brain ware. All these three components are inter related and equally important having circular relationship rather than linear or hierarchical. Moreover, at different stages of technology evolution and usage, these components are over emphasized by managers, but the circle must be kept balance in a spontaneous way [12].

European Commission research scholars in EU Monthly Magazine predicted about the multi-polar world in 2025. It described that it is likely for the world to become truly multi-polar and reflecting the new balance of power, and the loss of US leadership. It further predicted that if the US remains the first military power, the scientific and technological advancement of some Asian states in new irregular war tactics like cyber-war and cyber-attacks will weaken the hegemony of US in information and communication technology [4,13,14]. Some authors give much importance to ICT even four decades before and predicted that the rise of a post-industrial society would be information centered and marked by a shift from production to service job [15,16].

The world's economic balance of power is shifting rapidly from North to South, and the trend has been accelerated by the global recession [5,17]. Ohmae [18] developed a concept of a "Triad", he

predicted that the world economy including the information technology will be led by the United States, Japan, and the European Union. But in present circumstances, the concept of Kenichi seems to have become concealed by a new order consisting of China, United States, and India in the field of ICT. Dadush [19] presented a model in a chapter of the book “Handbook of Emerging Economies”, in which he argued that the shift of technological balance from North to South is increased after the global recession. He considered technology as the most important element than the other factors for economic growth of both groups [20].

In literature, Buzan and Cox [21] presented a new idea against the war-like power struggle in his paper, “China and the US: Comparable Cases of Peaceful Rise”. He argued that China adopted the peaceful rise policy at the beginning of 21st century, while the United States may also possibly claim to have risen peacefully in the international world. Some scholar argues that after disintegration of Soviet Union in 1990, US futurologist Alvin Toffler predicted the epochal changes in the shape of “information age”. According to them, Toffler argues that this epochal will bring the world political, economic, and social power structure in power shift of knowledge, wealth, technology and hostility at the start of the 21st century [22]. Some authors give much importance to ICT even four decades before and predicted that the rise of a post-industrial society would be information centered and marked by a shift from production to service job [23].

In 2013, Chinese President Xi Jinping put forward the new concept of “Silk Road Economic Belt” during his visit to Central and South East Asia, which later on was called as “One Belt and One Road”. He argued, “The concept will help to promote China cooperation with Central Asia and South East Asia in the field of trade, connectivity, culture and exchange. In October 2013, Prime Minister and Finance advisor of China Li Keqiang proposed that China and ASEAN countries should develop interconnection in order to promote trade environment. In November 8, 2014 President Xi Jiping granted 40 billion US\$ for Silk Road project to provide infrastructure and solid platform for ICT related projects [24]. The new Silk Road is considered to be the opening gate of China to the world including East to West, South to Middle Asia and India to Middle East. It can be easily stated that the new Silk Road will be more open, suitable and convenient to connect China with the world.

2.2 Conceptual Framework of ICT

The conceptual framework can be observed from the Fig. 2 which classifies economic and social benefits of ICT as well as the poverty outcomes. It clarifies the concept that how ICT can promote economic and social benefits in a society.

The diffusion of ICTs, like other innovative technologies, proceeds with three particular stages introduction, growth and maturity [25]. The ICT skills and infrastructure vary from country to country and is analyzed according to these three stages.

Fig. 3 shows that if a country developed, not only the mass of ICT users and practitioners increased but the necessary infrastructure for ICT must be developed. During the growth stage the diffusion rate is fast and is continuous until the maturity has been attained. The conceptual model of ICT diffusion will able the government and policy makers to adjust their goals and strategies in order to move from one stage to another stage. The proposed model will help the policy makers to improve the ICT skills and infrastructure in a way that it will reach the next stages of the model.

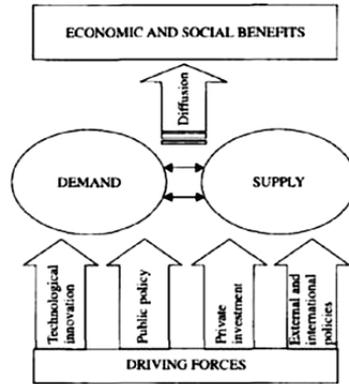


Fig. 2. A conceptual framework for ICT and development.

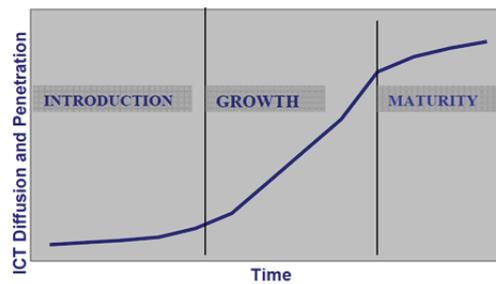


Fig. 3. ICT diffusion at three stages.

3. A Comparative Analysis of Emerging Asian Economies and Europe

The recent development in ICT in the Asian region has accelerated the GDP growth of emerging Asian countries. Furthermore, the Asian region receives massive investments in the field of ICT, including both local and foreign investments. Most of the Asian countries attract massive investment through the sector of ICT. In this regard, the People Republic of China is on the top among the other emerging states followed by Russia, Brazil, and India. China is the biggest supplier of ICT equipment, while India has developed IT city called Silicon City (Bangalore).

The share of ICT in GDP has been decreasing gradually from the last several years in Europe, which dropped from 6.6% in 2009 to 5.9% in 2013. While the situation in emerging countries (mostly Asian and Asia Pacific countries) in 2009 have accounted for third of the telecom services revenue and in 2013 it received almost 40% of the total world telecom revenue [26,27]. As a result, the gap in the growth rate and development of ICT between the developed countries and emerging countries became wider in 2013. In 2013, the balance in power regarding ICT kept on shifting to emerging countries continuously and become shared 80% of global growth contributing almost more than third of the world ICT market [28]. The comparison of ICT market growth and GDP are shown in Table 2.

Table 2 shows the comparison of ICT market and per capita GDP growth between advanced European countries and emerging Asian countries during 2010–2014. The digits show that the Asian countries have comparatively stable ICT as well as GDP growth during the last few years which shows the decline of EU in ICT industry.

Table 2. Comparison of growth rates in advanced and emerging Asian countries

	2010	2011	2012	2013	2014
Advanced economies					
Digiworld market growth (%)	2.6	1.3	1.0	1.1	2.4
GDP growth (%)	4.2	3.7	3.1	2.6	3.9
Emerging Asian economies					
Digiworld market growth (%)	9.7	10	7	7.7	7.9
GDP growth (%)	15.7	13.2	9.3	10.1	10.3

4. Factors Influencing the Transfer of Digipower to Asia

The following are some key reasons that cause the shift of balance of ICT in the favor of Asia from Europe.

- Single Telecommunication market (Monopoly)
- Fragmentation of digital market in Europe
- Influence of financial crisis in early years of 21st century
- Complex ICT Regulations that cause decrease in investment
- Economic Crisis
- Coalition against “war on terror”

Table 3 shows the breakdown of Digi world in the region, it also has some predictions about the ICT market globally. The Table 4 shows the share of ICT market contribution in Europe and Asia. It clearly shows that the Asian countries surpass the Europe in ICT market share.

Table 3. Global digiworld market by region (unit: billion euro)

	2012	2013	2014	2015	2018
North America	1,073	1,114	1,166	1,215	1,349
Europe	924	925	929	955	1,034
Asia/Pacific	993	1,056	1,123	1,196	1,411
Latin America	256	272	291	307	361
Africa/Middle-East	193	207	224	239	285
World	3,439	3,574	3,732	3,913	4,439

Table 4. ICT contribution in European/Asia market

	European market					Asia market				
	2011	2012	2013	2014	2017	2011	2012	2013	2014	2017
Core digiworld	891	880	874	883	942	949	986	1040	1100	1288
Telecom services	304	298	290	288	297	354	368	386	399	437
Telecom equipment	79	81	85	90	106	103	112	123	140	174
IT software and services	245	247	252	261	294	186	198	210	224	277
IT equipment	102	101	101	103	102	122	130	140	150	181
TV/Video services	99	99	99	101	106	90	96	101	107	129
Consumer electronics	61	54	46	41	37	94	82	79	78	90
New Internet services	32	38	45	53	80	45	58	74	91	141

5. Transfer of Digipower to Asia

Some scholars also state that the rise of Asia, particularly China will enable Beijing to pressurize the US and the other western countries, not only through military power but in the field of technology as well, which will lead to an “open and intense geopolitical rivalry”. China will rise and become a new power throughout Asia [29,30]. According to the analysis of European Commission Joint Research Centre, China, Korea, and Taiwan are the three highly specialized countries in ICT manufacturing, who have continued to strengthen their positions in the global ICT market [31]. China is the most obvious power on the rise in the present world scenario regarding ICT. In this study, China is the subject matter, because it not only belongs to the group of emerging economies growing very rapidly [32]. China took the lead among other regional states due to both its specialization in manufacturing of IT equipment and its economic size. Moreover, India and other emerging Asian states, which are now promoting their ICT sector, and can possibly surpass few major western states in the upcoming decades. The transfer of digital power ICT from West to Asia is getting velocity and may soon change the perspective for dealing with the global challenges. West is already aware of Asia's increasing potency in ICT.

The key lesson learned from the international point of view is that China, Korea, and Taiwan having a large ICT manufacturing sector, have an important potential for growth, particularly, as the important resources like expenditures and qualified staff. In other words, they have strengthened the ICT and R&D sector. While the US has dominance over EU due to its high productivity level of manufacturing as well as high R&D resources in order to retain its competitiveness in global ICT market [33,34]. The detailed comparison and contribution of Asian countries and Europe in the world market (in ICT sector) are given in Fig. 4.

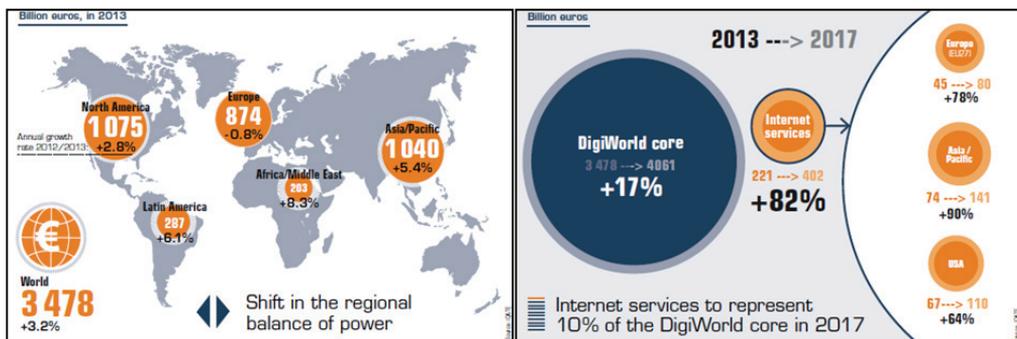


Fig. 4. Shift in the regional balance of power from Europe to Asia (ICT).

6. Conclusions

The facts and figures outlined in this paper show that the balance of power in ICT is drifting slowly and gradually towards Asia from Europe. Asia is a densely populated region with more than 2.8 billion people, living in a land fertile for IT and communication industry, with cheap labor and capital, rich raw resources and tremendous absorbing capacity for new technologies and developments. All these factors are molding the situation in favor of emerging Asian countries and shifting the regional balance of power in ICT towards Asia. The development of ICT has been the main objective of most of the

Asian countries in changing the global environment towards the Asian region in terms of communication and technology. New Silk Road is an example of this strategy. Besides, US as the ICT giant have its own strategies towards occupying the information and communication market. This will require the sacrifice of core national interests in the short run. At the same time, China and other Asian emerging countries can get the dominance in ICT sector only if these could ensure the interests of other countries according to their own ways in the long run.

The United States have still the hegemony in the field of ICT, while European countries faces decline. But on the other hand, China and other Asian countries have amazing/great achievements in the ICT sector. On the basis of the above facts, it can be assumed that in the next two decades, China together with the other emerging Asian countries and not Europe may stand as the strongest opponents to the United States supremacy in ICT.

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