

Chapter 5

From Information Society to Network Society: The Challenge

Manlio Del Giudice

5.1 Network Society and Social Inclusion

The concept of the “network society” is an evolving one that is gaining ground in evolutionary thinking about economic development. It entails a shift from the conventional models toward a complex model dealing with the interface between economics, culture, and technology and centered on the predominance of knowledge intensity and innovation content to maintain competitive advantage. Given its multidimensional structure, the concept of network society offers a feasible option as part of a results-oriented development strategy for developing countries.

It has emerged as a means of focusing attention on the development of the contemporary society, embodying the proposition that many are the elements that cause a larger process of sustainable development, in which many disparate phenomena are not separate or unrelated but part of a more comprehensive holistic approach that takes into account the realities and specificities of countries.

The following factors can be listed among the most significant: political (Fox 2006); economic (Hamel and Breen 2007; Fox 2006; Tapscot and Willimas 2006, Newell et al. 2009; Kassicieh 2010; Hanna 2010a; Ichimura 2003); social and demographic (Tapscot 2009; Araya and Peters 2010; Olszak and Ziembra 2010); and technological factors (Carayannis and Kaloudis 2008; Carayannis 2008; Carayannis 2009; Tapscot and Willimas 2006; King 2007; Hoving 2007; Newell et al. 2009; Hanna 2010a, b; Gibbons et al. 1994).

In particular, the structural changes that have taken place in the developed countries reflect the growing importance of the production, diffusion, and application of knowledge. Science and technology are progressing ever more rapidly and the advances being made are permeating all areas of economic activity.

Certainly, the elements that have dramatically altered the way society and economy work are of a technological nature, in particular, the speedy development of information and communication technology (ICT; Olszak and Ziembra 2008, 2010, 2011a, b; Gołuchowski and Ziembra 2003; Rivard et al. 2004; Roztocky and Weistroffer 2008, 2009a, b; Tapscot and Willimas 2006; Hanna 2009). The indisputable role of knowledge in the development of a society, an economy, a state, and all

the institutions within it was primarily acknowledged due to ICT. Knowledge and information have been started to be considered as strategic economic resources, elements by which competitiveness is determined. The increasing level of investment in ICTs as well as in intangible assets such as education, research and development (R&D), and software, together with the expansion of knowledge-based industries, are important and widely acknowledged indicators of significant developments in both general economic and technological environments. Many existing economic, social, financial, and market rules had to be redefined as a result of the different way of thinking and proceeding accordingly.

Hence, in developing economies, ICT is often considered as a means that allows to successfully abandon economic dependency on industries with a low added value, such as agriculture and raw materials extraction. The lack of other resources may be compensated by the use of ICT as a communication tool that enables cooperation. Nevertheless, the application to developing countries of the business models and strategic tools typical of developed countries appears to be quite inadequate, as the contexts are very different, and the experience gained may be misleading.

For instance, as pointed out by Roztocki et al. (2007), while in developing countries the evaluation of the number of people with a computer and individual Internet access can be a valid measure of the progress of ICT implementation, this is not generally true for developing countries. In fact, in the latter, only a few people commonly own a personal computer (PC) and access the World Wide Web through a personal Internet connection, but a great number of people have access through other means, such as the workplace, Internet cafes, public libraries, schools, etc.

Information society is the foundation of many studies in the literature on the topic. The concept was first illustrated in the early 1960s. In 1962, the concept of knowledge industry was introduced by Machlup. The author divided the knowledge industry into five different sectors: education, R&D, mass media, information technologies, and information services. This distinction was the basis for his analysis, which showed that a compelling 29% of the gross domestic product (GDP) in the USA was generated in knowledge industries in 1959. Some observers have described it as a transition from industrial to postindustrial society (Bell 1973), or as a transition from modern to postmodern society (Bell 1976). As pointed out by Bell (1973), the development of an information society was largely due to the definition of a new type of society, known as postindustrial, which took the place of the industrial society, is driven by information and oriented to service.

“Attention to the emerging reality of digital economy reframes the argument that burned 15 years ago as to whether manufacturing mattered, either to firm strategy or national economic well being. For one set of analysts the question was what follows the industrial economy. Over the past several decades a series of labels have proposed central features of the next epoch: the knowledge economy, the information society, and the service economy. One thing these, and other, notions have in common is the conviction that the material production that defined the industrial era will give way to something else, though there is debate as to what that something else will be. By implication each suggests that manufacturing will have a diminished role today and in what comes next” (Zysman 2002, p. 7).

A significant step forward was made, thanks to the thorough investigation of the most important changes that had occurred worldwide from the age of capitalism to the knowledge society, and the analysis of their future impact on society, politics, and business (Drucker 1993; Booz-Allen & Hamilton 1997). Other research examined the technological revolution and the social and economic changes related to it by elaborating a theory of the network society and viewing the global economy as a continuous flow of information (Castells 1996).

Close review of all the work by Castells and van Dijk leads to the conclusion that the revolution on which the creation of a network society is founded is not only technological but also social.

Manuel Castells (2007) introduced the term “mass self-communication” to describe the evolution of a new type of socialized communication. Castells (2007) claimed that the development of interactive communication networks determined the range of social software and tools that prevail today. According to Castells, in the past the industrial society essentially based its communication systems on the mass media, adopting a pattern that was founded on sender–receiver information sequences. Nevertheless, this system was later replaced in the network society by a multimodal and interactive way of communication. Relevant literature has defined interactivity in different ways. One of the most interesting definitions was that by van Dijk (2006), who investigated the concept in depth focusing on a peculiar form of interactivity that he described as “behavioral interactivity,” intended as the extent of control exercised by each party that interacts with the others. Van Dijk (2006, p. 9) essentially believed that in such a setting “as the digital media is more interactive than traditional media, they enable a shift in the balance of power to the user and the side of demand.”

It is a matter of fact that the Internet is the top media application nowadays due to its high level of interactivity. Thus, considering the increase in interactivity and the way it relates to the media, the latter need to be described as a dynamic process that involves different levels of interaction not only between specific senders and receivers but also between economies and technologies and commercialization and globalization of media markets.

“Globalization and the explosion of instruments of mass communication especially the social media have made audiovisual human interaction across national boundaries as easy as the push of a tiny little button on a small device that fits into the pocket. With the resultant capacity of transmitting information and pictures thousands of miles across the world, people are now able to access information at the snap of the fingertips and this has affected global consciousness” (Osai 2013, p. 170).

Relations are becoming more and more complicated, as interactivity is increasing and mass audiences are becoming more fragmented; as stated by Buckingham (2003), all this is “fundamentally transforming young people’s everyday experiences of media.”

Over the past decades, Internet and mobile communication have spread dramatically at a global scale. In 2013, over 2.7 billion people are using the Internet, which corresponds to 39% of the world’s population. In the developing world, 31% of

the population is online, compared with 77% in the developed world. Europe is the region with the highest Internet penetration rate in the world (75%), followed by the Americas (61%). In Africa, 16% of people are using the Internet—only half the penetration rate in Asia and the Pacific (ITU World Telecommunication 2013).

As stated by Santra and Giri (2009), there is an increasing number of Internet users nowadays who create “new social situations and communication behaviors.” They may also change their behaviors in different ways that are explained as “independent of the social presence or richness of those [new] media and that compensate for problems associated with media leanness.” Moreover, from his viewpoint, Castells (2007) highlighted a peculiar trend in the differential diffusion of new information technologies in developing countries or regions “where there is no electricity but there is some form of coverage and mobile chargers of mobile batteries in the form of merchant bicycles.” Internet and mobile communication are gradually converging, thanks to the enhancement of broadband capacity (Huang et al. 2012), so the communication power ensured by the Internet “is being distributed in all realms of social life, as the electrical grid and the electrical engine distributed energy in the industrial society” (Castells 2007). There is space for optimism in declaring that “the contents of the Web gradually diversify to become everybody’s local radio and newspaper, community telephone exchange, and world marketplace” (Norris 2001).

Such an incredible trend in the use of new information technologies may be ascribed to cultural reasons, in an attempt to overcome the different cultural, but also social, economic, and political barriers.

For example, “...Dissimilarities between Chinese and Indian IT and telecom (ITT) firms in their levels of connectivity or insularity with their respective domestic economies have translated into even more profound differences in a social sense. The vast differences between the scales of operation of their hardware industries or the orientations of their software industries go beyond a simple economic disconnect. For the average Indian, the ITT companies are distant entities. Indian ITT companies have no products or services catering to the personal or social needs of individuals outside of the bubble-like existence of the IT economy. At the polar opposite are the many Chinese companies who have made themselves a part of the daily lives of the people. India has no equivalent of China’s Renren.com, preferring to carry out its social networking through Facebook and Orkut” (Chaudhuri 2012, p. 20).

As stated by Sadwosky (1996), “in developing countries where much of the media is controlled by the state and individual access to networks is currently limited, the need to decentralize control over information and over networks themselves is clear.”

Ma et al. (2004) argue that China is pursuing seemingly contradictory goals: administrative decentralization and streamlining and also increased monitoring and control on the other.

“In anticipation of the 2008 Olympics, and in a general push to modernize, China has moved aggressively since 2000 to develop “Digital Beijing” in particular and more generally to develop digital government initiatives across the country (Chen 2002). The primary goal of these initiatives is economic development (Yuan et al. 2004)” (Robertson and Vatrapu 2010, p. 331).

Relevant literature has focused much of its interest on the cultural, social, economic, and political attributes of the electronic content, and Web content in particular. Younger generations in developing countries who felt alienated in the past as they were regarded as passive members of society have tried to overcome the digital divide, and this attempt could actually lead to digital inclusion.

The studies on digital divide have always taken into account the fact that there is a clear differentiation among the various members of the information society, and this distinction is based on what they have or do not have to do. Many scholars have contributed with their research to a better understanding of the digital divide; among these are Hargittai (2002, 2007), Mossberger et al. (2003), DiMaggio et al. (2004), van Dijk (2005), and Livingstone and Helsper (2007). Hargittai (2008) stated that “even once people go online, differences exist among their online pursuits.” As pointed out by Norris (2001) the concept of digital divide is very complex as it involves “multidimensional” aspects and it “encompasses” the aspects of global divide, social divide, and democratic divide. Norris understood the global divide as “the divergence of Internet access between industrialized and poor countries.” Van Dijk (2006b), in particular, studied the digital divide for a period of 5 years and concluded that “the results are classified under four successive types of access: motivational, physical, skills, and usage. [This is basically] a shift of attention from physical access to skills and usage.” In the same line of thought, Hargittai (2008) believes that the diversity of people together with “the context of their Internet uses, and their level of experience have all been shown to influence types of Web uses in general.”

Initially digital technology has encouraged societies worldwide to change the way people live and behave; so a very interesting question is whether “the simple presence of technology and its impact on certain aspects of society justifies the use of such terms as Information Society or Knowledge Society?” This question will remain unanswered until digital inclusion does not prevail. Nevertheless, it is still not possible to reach the optimum digital inclusion because “infrastructure is central in achieving the goal of digital inclusion, enabling universal use, sustainable, ubiquitous, and affordable access to ICT. This should take into account relevant solutions already in place in countries with economies in transition. Also provision should be made for sustainable connectivity and access to remote and marginalized areas at national and regional levels.”

Ifinedo and Singh (2011, p. 179) focused on the “factors that could be perpetuating the progress of E-gov in selected TEECE” and “showed that that resources (e.g. national wealth, human capital development, technological infrastructure, and rule of law) matter in accelerating a country’s ability and willingness to advance its E-gov initiatives with features that promote citizens’ participation and engagement.”

Another term for digital inclusion is e-inclusion, which encompasses all the activities associated with the attainment of an inclusive information society involving all the possible segments of the global population. The risk of a digital divide may be turned into opportunities for inclusion when the most relevant technological progress is viewed in a positive perspective. In the European Union

(EU), digital inclusion is part of the third pillar of the 2010 policy initiative, managed by Directorate General for Information Society and Media of the European Commission. Any person who faces a disadvantage due to any reason related to poor education, gender, ethnicity, aging, disabilities, scarce resources, or residence in remote regions is entitled to take advantage of technology and bypass the sociocultural digital divide. As stressed by McPhail (2006), exclusion is caused by these same reasons, even though in various forms, in all the developing or mostly peripheral countries.

Dr. Mark Warschauer, a very influent American scholar in the field of technology and its social impact, stated that “the bottom line is that there is no binary divide, and no single overriding factor for determining such a divide” (<http://www.dcita.gov.au/ie>). In 2003, Warschauer analyzed several countries with diverse circumstances, and Egypt was among these. In this study, some activities of Egyptian youth were examined as an expression of an inclusive network society. Warschauer claimed that the use of technology in order to foster social inclusion “is a more productive approach to ensuring digital inclusion” (<http://www.dcita.gov.au/ie>). In fact, the author was interested in demonstrating how social inclusion could be encouraged by the use of technology with a particular focus on equality of access to information, preservation of cultural identities in the virtual world, and overcoming the digital divide. Warschauer believes that the digital divide should be understood in a different perspective rather than being simply overcome.

Expanding access to ICTs should be taken into account by policy-makers in order to promote social inclusion. With this idea Warschauer fuels the discussion regarding the extent ICT applications may potentially “foster stratification and marginalization or development and equality” (2003, p. 210).

Network and Networking

As pointed out by Yochai Benkler (2006), the concept of “network” does not merely describe an entity but a generative principle of investigation in different theoretical frameworks such as “network theory”, “social network theory”, “actor network theory”, and “postindustrial coproduction theory”. All these involve significant consequences on the modes cultural networks manage their business, in a digital environment in particular.

Today the concept of “network” has to be understood in a more polyvocal and heterogeneous way. According to the computing and networking theory, the term “network” is actually related or could potentially be related to the idea of “hubs” with multiple, transnational “nodes”. Thus, more attention should be paid to the social and economic environments, and the type of digital networks, that, in their turn, should be addressed beyond the concept of communities bound by mutual interests and include heterogeneity as “nodes” in a greater and more intertwined cultural domain. As a result, the “space” in which networks operate nowadays should be analyzed more carefully. To use Latour’s words, a space well defined by metaphors

such as “levels, layers, territories, spheres, categories, structure, systems” no longer exists but rather with a “fibrous, threadlike, stringy ... capillary character” (Latour 1997, p. 2). If this was already true in 1997, it is even more evident today, in a virtual world dominated by Facebook, Twitter, MySpace, and Google, which cannot be deemed as a static “system” or “structure” but is essentially a network of living relations where the players communicate and interact from the hub to the nodes and beyond, and vice versa.

Several debates in various research fields have focused on the concepts of networks, network society, and network culture (for instance, Castells 1996; Barabási 2003; Taylor 2003; Terranova 2004; Rossiter 2006; Galloway and Thacker 2007). The earlier mentioned concepts have been described differently according to the diverse social, cultural, and political theories but have always been associated with the evolution in the experiences regarding the digital technologies and digital networks.

The rapid expansion of communication and information resources has remarkably affected contemporary society to the point that it is often described as an information age. Information and communication structures and networks are so important nowadays that the society we live in has been defined with terms, such as information society, knowledge society, and networked society, all underscoring this significance. The debate regarding the type of society in progress is still open: is it a democratic and inclusive “knowledge society”, or is it a commodified and commercialized “information society”? Whatever the response to the question, it is commonly accepted that contemporary society is a network society dominated by a network culture, as every aspect of our daily lives involves the use of communication technologies and digital networks. It appears that the type of culture we are creating is strongly affected by the way we structure our information and communication. It is clear that culture is a communicational phenomenon and, at the same time, communication is a cultural phenomenon (Carey 1992; Hamelink 2003; Pasquali 2003); hence, our culture is significantly influenced by new communication opportunities forwarded by digital networks.

As stated by Foresta, “each society constantly recreates itself through communication by constantly redefining its collective reality, its culture” and “culture is a memory, collective memory, dependent on communication for its creation, extension, evolution and preservation” (Foresta et al. 1995, p. 19). Our cultural communication structures have always been the means to preserve and share cultural memory, as the processes of knowledge creation and communication have always been enabled and facilitated by the available technologies. “Without recording technologies of some kind (tablets, paper, wax, movable print, analogue and digital electronic, and so forth), the cultures we all inhabit would not exist” (Lister et al. 2009, p. XV). Communication technologies have a remarkable impact on our culture, as the very nature of our communicational and cultural schemas can be altered by them. Thus, ICTs cannot be deemed as passive tools, but they should be considered interactive systems that can profoundly change our cognitive abilities (Dascal 2006).

Nowadays digital technologies appear in all business segments, and are fundamental in many fields from financial transactions to media and cultural production, just to provide some examples. The effects of the use of digital technologies in our society are not linear, but many other factors combined with them “create conditions of possibility that suggest possible futures rather than determine them” (Hawk and Rieder 2008, p. xviii). The extent to which digital technologies are present in our daily lives reveals the existence of a digital culture. As pointed out by Charlie Gere, “digitality can be thought of as a marker of culture because it encompasses both the artifacts and the systems of signification and communication that most clearly demarcate our contemporary way of life from others” (Gere 2002, p. 12).

This shows that technology is a fundamental element of culture, and it cannot be considered only tangentially in order to analyze culture. Culture creation by all actors is affected by increasingly complex technological settings. Thus, the complex technologies everyone uses today should be considered as environments, rather than simple tools that allow us to bypass specific restrictions.

It is now clear that our experience is formed in part by the virtual reality brought to life through digital networks. This has moved boundaries and given shape to new concepts, so a different approach has been required. We have learned what new media (Manovich 2001) are and what is the meaning of being virtual (Lévy 2001). Despite being intertwined, once there used to be a definite differentiation between the virtual and real spheres of our experience; however, nowadays the boundaries are not so evident, as digital technologies evolve toward miniaturization. As widespread computing aims at including particular elements based on ICTs into specific physical spaces (for example, GPS and mobile phones), another change is in progress, the one in which the way we experience digital technologies shifts “from the virtual foreground to the material background” (Hawk and Rieder 2008, p. xiv).

Therefore, virtuality does no longer mean “unreal”, but begins to express “a tacit aspect of material reality” (Hawk and Rieder 2008, p. xvi). Hence, reality itself has turned into information space where material objects are converted into information flowing through global networks, and become media objects. Recent debates on digital culture were responsible for the introduction of new terms such as ambient intelligence, ubiquitous computing, and the ‘Internet of Things’ (van Kranenburg 2008). These show that there is a very close evolution of culture and digital culture that are becoming increasingly interconnected.

The process of media convergence has been allowed by digital networks, and various economic and social processes have been activated by such a convergence. The limitations faced by previously separated industries while running their businesses were changed by the use of the same digital technology. Thus, convergence is not a mere technological shift, but has an impact on the changes that influence relations in a society. As pointed out by Jenkins (2006, p. 17), “convergence alters the relationship between existing technologies, industries, market, genres and audiences. Convergence alters the logic by which media industries operate and by which media consumers process news and entertainment.”

Social Networks—Little Facebooks Grow up. Survival in Local and Telematic Niches

For many people the first social network to expand its borders was Cyworld, founded in South Korea at the end of the 1990s: it was a webspace which users could personalize to their interests. At the beginning, it was an experiment but it gained a public following, and soon the idea crossed the Pacific. Today it lives together with Facebook.

Then it was the turn of Friendster: the online social network was set up in California and gathered followers. Its rise was rapid, and its decline even faster, but surprisingly it has survived in Southeast Asia, also thanks to the spread of access from mobile devices. Other social networks, instead, have remained confined to linguistic niches, like StudiVz in German language countries, or Hyves which survives in the Netherlands.

Several digital social networks have had long evolutionary paths. In addition, while, over the years, some could count on communities of devoted followers over wide geographical areas, others conquered niche sector users. Often they are little-known names for the general public: Busuu and Livemocha, for example, help members to learn new languages in which the students can ask others for advice and practice and learn step by step.

When Twitter was still in its infancy, it dueled with Jaiku, though only for a short time: it was a challenge made of microposts to send brief messages. Foursquare, on the other hand, is the heir of the team which developed the social network Dodgeball, which has now disappeared.

Great participation in the virtual sphere by users worldwide is made possible through the digital network environment. There are several communication platforms offered by digital networks, and as a result the power and position of the classical mass media are altered. Therefore, nowadays, due to the huge quantity of information available online, anybody can discover a variety of opinions on any topic. This information is originated by a number of different sources such as traditional media, individuals, enterprises, the research community, etc.

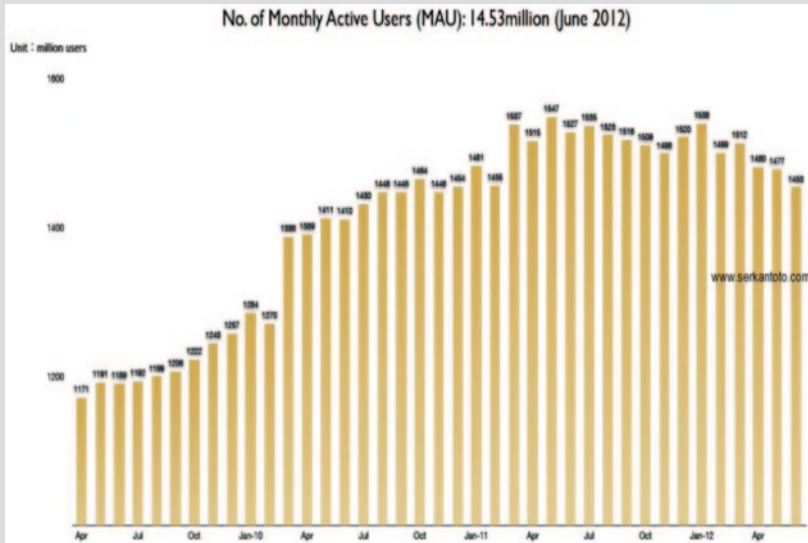
The variety of information and perspectives available is the result of what Benkler (2006) described as the networked information economy in which a predominant role is played by peer production and sharing. Benkler suggested that one of the most significant consequences of the networked information economy is the evolution from a mass-mediated public sphere to a networked public sphere. In this context, it is possible for a greater number of people to express their opinions and share them with others, and this is due to the fact that the digital network environment has enhanced the practical abilities of individuals.

Indian Social Networking Sites and Competition In India, the most famous social networking sites at a global scale such as Facebook and Twitter are having

Facebook and Social Networking Sites in Japan Current statistics have revealed that Facebook has overtaken the social network Mixi in Japan. In an interview with The Nikkei, *Japan's* leading *business* daily, Sheryl Sandberg, Facebook's chief operating officer, declared that Japan is a very important market for Zuckerberg's company. In September 2011, active users were almost 5 million and this number grew by 200% in 1 year. Today it has surpassed 15 million, increasing by an astonishing 5 million in only 6 months.

Sandberg also revealed that Facebook aims at expanding in Japan and some positions have been opened in their offices in Tokyo.

On the contrary, Mixi experienced a loss of monthly active users (MAUs) from 15.2 million reported in February 2012 to 14.53 million in June 2012. The Japanese market had initially proved to be difficult for Facebook but now for the first time the Japanese social network Mixi has been surpassed by number of MAUs.



The growth has been exponential if we just consider that, according to data revealed by The New York Times, in 2011 the total number of Facebook users in Japan was less than 2 million, and this did not even represent 2% of the Japanese online population. At first, the level of interest in Facebook by Japanese users was quite low, due to its lack of optimization for the Japanese language and the initial unwillingness of people to use their real names and share personal information. It is evident that Facebook's strategy in Japan has been very successful as it has led to considerable gains over the years;

moreover, as the number of Facebook users increases Mixi may have to deal with further losses.

<http://www.insidefacebook.com/2012/09/13/facebook-overtakes-japanese-social-network-mixi-in-japan/>

to face fierce competition by Worldfloat.com, India's native social networking site, which aims at reaching the number of 10 million users by the end of June 2013.

Worldfloat.com was founded by Pushkar Mahatta in 2012 and has started to become popular worldwide because of its new added features. As declared by Mahatta himself, on Worldfloat it is possible to do anything that can be done on Facebook, but there are different added features that are truly unique, the most important of which are virtual games.

With regard to the special features mentioned above, users are also attracted by the chance of winning money as a "treasure hunt game" option is provided. In fact, as declared by Mahatta to IANS, Indian's largest independent news service, "Worldfloat is not just a social networking platform. It is also a way for people to earn money up to Rs. 10,000 through online competitions and contests by buying an online ticket of Rs. 100."

The opportunity to win money while networking is absolutely new, and today no other similar site provides a specific service that users can avail themselves of and also have the chance of making some money while simply playing or competing with one another.

Although he did not wish to reveal the names of the funds, Mahatta stated that he had received buyout offers of up to US\$ 300 million, and this shows how much interest there is around his creature. However, at present, the website is not for sale.

<http://news.oneindia.in/2013/05/03/indias-homegrown-social-networking-site-eyes-10-mn-users-1208354.html>

Social Networking in Developing Regions: A Literature Review Much research has been carried out in order to examine the use of the Internet in developing regions. In particular, a study by Du et al. (2006) analyzed web traffic generated by shared access sites in countries such as Ghana and Cambodia. The outcomes show different characteristics of web usage before social networks were widely adopted. Another study regarding Internet usage and performance was conducted by Mathee et al. (2007), who showed how in Zambia social networking and communication tools were being increasingly used also in remote villages. The research revealed that social networking sites were the most visited websites in villages such as Macha that is almost 350 km from Lusaka, the capital of Zambia. Very interesting is the study by

Ihm et al. (2010) that collected data on http traffic from a worldwide content distribution network (CDN). This work examined web content regarding 1-week browsing data from almost 350,000 Internet users across 190 countries. The results showed various remarkable features of web usage in developing regions; among these are the desire for rich media and differentiation in the distribution of download types. Moreover, a very specific study by Chen et al. (2011) pointed at the extensive usage of social networking and e-mail communication in an educational environment in India.

Recent work by Reda and Brian (2011) offers a thorough analysis on how social networking is adopted and utilized in developing regions. Considering how nowadays the web usage scenario is dominated worldwide by social networking, this study provides very useful data related to the adoption and features of social networking, especially in developing regions. It focuses on social network global usage and utilizes data from over 120 million people from all over the world, a great number of them coming from developing regions. Specific patterns and features of social networking usage in developing regions are provided by combining individual profile information with member activity logs.

Particular attention is given to the rise of “microblogging” in China by Skolnick (2011, p. 9–10). “Since the vast majority of media outlets in China are state-run or state controlled, there is very limited opportunity for the free flow of information, and there are sharp restrictions placed on individuals seeking to voice their opinions. The impressive feat of monitoring and repressing the opinions expressed online by hundreds of millions of internet users is made possible by China’s highly advanced mechanism of internet supervision, which has been described by many internet experts as the most sophisticated censorship system in the world. In light of the government’s unrelenting suppression of conventional internet content, many Chinese internet users have increasingly resorted to using a different online mechanism for the promulgation of news and the expression of different perspectives and points-of-view: microblogs. Referred to in Chinese as weibo (微波), these microblogging websites are different from most other sites in that the content posted by users is usually of a relatively small file size, and thus allows for the exchange of small amounts of information, such as a few short sentences, an image, or a link to a video. Often compared in format to the American website Twitter, these weibo have recently become immensely popular in China, with at least 12 major microblogging sites servicing over 120 million users who produce upwards of a million posts an hour. Furthermore, this recent explosion of microblogs seems to be outpacing the capabilities of China’s infamously capable censors, providing an alternative avenue for free speech and expression under China’s repressive information regime.”

An interesting study examines how Indian schoolchildren acquire product and brand knowledge through their social media networking lifestyle

and how this consumer socialization experience aids them in their family decision-making situation. “Though children command a huge market for high value product categories, their lack of buying power (lack of income) limits their role in their family decision making circumstances. Although they influence their other siblings, family and friends, their dependency purely on their social network media interaction for knowledge sharing about products and brands is the least because of their limited or negligible interactions in the related issues. They still value their physical judgments of brand/product experiences shared by their peers more than anything else. The results of the correlation study show not so significant relationship among their membership and word of mouth sharing of product/brand information among the members of the SNM. It is evident that internet penetration among school children is strong but the utility of the Social networking media in socializing children as consumer is not as evident as among adults” (Senthil Kumar and Ramachandran 2011).

References

- Aldrich, D., Berlot, J. C., & McClure, C. R. (2002). E-government: Initiatives, development and issues. *Government Information Quarterly*, 19(4), 349–355.
- Araya, D., & Peters, M. (Eds.). (2010). *Education in the creative economy*. New York: Peter Lang.
- Barabási, A. L. (2003). *Linked: How everything is connected to everything else and what it means*. New York: Penguin Group.
- Beaumaster, S. (2002). Local government IT implementation issues: A challenge for public administration. *Proceedings of the 35th Annual Hawaii International Conference on Systems Science*, IEEE Computer Society.
- Bell, D. (1973). *The coming of post-industrial society. A venture in social forecasting*. New York: Basic Books.
- Bell, D. (1976) *The cultural contradictions of capitalism*. New York: Basic Books Inc Publishers.
- Benkler, Y. (2006). *The wealth of networks. How social production transforms markets and freedom*. New Haven: Yale University Press.
- Booz-Allen & Hamilton. (1997). *Enabling the information society. Supporting marketled developments. Key findings and policy ideas from a global benchmarking of the information and communication technology industries*. Amsterdam.
- Buckingham, D. (2003). *Media education: Literacy, learning, and contemporary culture*. Cambridge: Polity Press in association with Blackwell Publishing Ltd.
- Carayannis, E. G. (2008). Conceptual framework for an analysis of diversity and heterogeneity in the knowledge economy and society In E. G. Carayannis, A. Kaloudis, & Mariussen (Eds.), *Diversity in the knowledge economy and society: Heterogeneity, innovation and entrepreneurship* (Ch. 5, pp. 95–116). Cheltenham: Edward Elgar Publishing, Incorporated.
- Carayannis, E. G. (2009). Firm evolution dynamics: Towards sustainable entrepreneurship and robust competitiveness in the knowledge economy and society. *International Journal of Innovation and Regional Development*, 1(3), 235–254.
- Carayannis, E. G., & Kaloudis, A. (2008). *Diversity in the knowledge economy and society: Heterogeneity, innovation and entrepreneurship*. UK: Edward Elgar Publishing, Incorporated.

- Carey, J. W. (1992). *Communication as culture: Essays on media and society*. New York: Routledge.
- Castells, M. (1996). *The rise of network society. The information age: Economy, society and culture*. (Vol. 3). Oxford: Blackwell Publisher.
- Castells, M. (2004). *The network society: A cross-cultural perspective*. Cheltenham Glos: Edward Elgar Publishing.
- Castells, M. (2007). Communication, power and counter-power in the network society. *International Journal of Communication, 1*, 238–266.
- Castells, M., & Himanen, P. (2001). *The finnish model of the information society*. Helsinki: Sitra.
- Castells, M., & Himanen, P. (2002). *The information society and the welfare state. The finnish model*. Oxford: Oxford University Press.
- Chaudhuri, A. (2012). Creeping tiger, soaring dragon: India, China and competition in information technologies. *China & World Economy, 20*, 1–28.
- Chen, H. (2002). Digital government: Technologies and practices. *Decision Support Systems, 34*, 223–227.
- Chen J., Hutchful D., Thies W., & Subramanian, L. (2011). Analyzing and accelerating web access in a school in Peri-Urban India. In Proceedings of the 20th International World Wide Web (WWW) Conference, Hyderabad, India.
- Dascal, M. (2006). Digital culture: Pragmatic and philosophical challenges. *Diogenes, 53*(3), 23–39.
- DiMaggio, P., Hargittai, E., Celeste, C. & Shafer, S. (2004). From unequal access to differentiated use: A literature review and agenda for research on digital inequality. In K. Neckerman (Ed.), *Social Inequality*. New York: Sage.
- Drucker, P. F. (1993). *Post-capitalist society*. New York: Harper Business.
- Du Bwei, Demmer, M., & Brewer, E. (2006). Analysis of WWW traffic in Cambodia and Ghana. In *Proceedings of the 15th International World Wide Web (WWW) Conference* (pp. 771–780). Edinburgh, Scotland.
- El Gamal, H. (2007). *The revival of the Arabization of e-content: From textual to contextual Arabization*. Unpublished Master's Thesis. The American University in Cairo.
- Ellis, T. J., & Levy, Y. (2009). Towards a guide for novice researchers on research methodology: Review and proposed methods. *Issues in Informing Science and Information Technology, 6*, 323–337.
- European interoperability framework for European public services (EIF). Version 2.0 (2004). <http://www.bigwobber.nl/wp-content/uploads/2009/11/European-Interoperability-Framework-for-European-Public-Services-draft.pdf>. Accessed 2 Dec 2010.
- Foresta, D., Mergier, A., & Serexhe, B. (1995). *The new space of communication, the interface with culture and artistic activities*. Strasbourg: Council of Europe.
- Fox, M. (2006). *Corporate governance lessons from transition economic reform*. Princeton: Princeton University Press.
- Galloway, A., & Thacker, E. (2007). *The exploit: A theory of networks*. Minneapolis: University of Minnesota Press.
- Gere, C. (2002). *Digital Culture*. London: Reaktion Books.
- Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, C., Scott, P., & Trow, M. (1994). *The new production of knowledge: The dynamics of science and research in contemporary society*. London: Sage Publications.
- Gołuchowski, J., & Ziemia, E. (2003). E-marketing education of SME's managers in Internet age—TRI-MAR solution. In T. Bui, H. Sroka, S. Stanek & J. Gołuchowski (Eds.), *DSS in the uncertainty of the Internet age* (pp. 173–184). Katowice: University of Economics.
- Gupta, M. P., & Jana, D. (2003). E-government evolution: A framework and case study. *Government In-formation Quarterly, 20*(4), 365–387.
- Hamel, G., & Breen, B. (2007). *The future of management*. Boston: Harvard Business School.
- Hamelink, C. (2003). Human rights for the information society. In Girard, B., & Ó. S. Sióchrú (Eds.), *Communicating in the Information Society* (pp. 121–163). Geneva, UNRISD.

- Hanna, N. K. (2009). *e-Transformation: Enabling new development strategies*. New York: Springer.
- Hanna, N. K. (2010a). *Enabling enterprise transformation. Business and grassroots innovation for the knowledge economy*. New York: Springer.
- Hanna, N. K. (2010b). *Transforming government and building the information society: Challenges and opportunities for the developing world*. New York: Springer.
- Hargittai, E. (2002). Second-level digital divide: Differences in people's online Skills. *First Monday*, 7(4).
- Hargittai, E. (2007). A framework for studying differences in people's digital media uses. In N. Kutscher & H. Otto (Eds.), *Cyberworld Unlimited* (pp. 121–137).
- Hargittai, E. (2008). Whose space? Differences among users and non-users of social network sites. *Journal of Computer-Mediated Communication*, 13, 276–297.
- Hawk, B., Rieder, D. M. (2008). On small tech and complex ecologies. In B. Hawk, D. M. Rieder, & O. Oviedo (Eds.), *The culture and digital tools*. Minneapolis: University of Minnesota Press.
- Heeks, R. (2008). Benchmarking e-government: Improving the national and international measurement, evaluation and comparison of e-government. In Z. Irani & P. Love (Eds.), *Evaluating information systems. Public and private sector*. New York: Elsevier.
- Himananen, P. (2004). *Challenges of the global information society*. Helsinki: Parliament of Finland. <http://web.eduskunta.fi/dman/Document.php?documentId=br11307103930385&cmd=download>. Accessed 1 Dec 2010.
- Hoving, R. (2007). Information technology leadership challenges—Past, present, and future. *Information Systems Management*, 24(2), 147–153.
- Huang, I., Guo, R., Xie, H., & Wu, Z. (2012). The convergence of information and communication technologies gains momentum/the global information technology report.
- i2010. A European information society for growth and employment. (2005). http://europa.eu/legislation_summaries/information_society/c11328_en.htm. Accessed 1 Dec 2010.
- Ichimura, S. (2003). *Transition from socialist to market economies*. Basingstoke: Palgrave Macmillan.
- Iñedo, P., & Singh, M. (2011). Determinants of e-government maturity in the transition economies of central and Eastern Europe. *Electronic Journal of e-Government*, 9(2), 166–182.
- Ihm, S., Park, K.Soo, & Pai, Vivek S. (2010). Towards understanding developing world traffic. In *Proceedings of the 4th ACM Workshop on Networked Systems for Developing Regions (NSDR)* (pp. 8:1–8:6). San Francisco, California.
- ITU World Telecommunication. (2013). ICT Indicators database [Online]. <http://www.itu.int/ITU-D/ict/statistics>.
- Jenkins, H. (2006). *Convergence culture: Where old and new media collide*. New York: New York University Press.
- Johnson, B. (2005, October). Microsoft research inspires worldwide digital inclusion. *PC Magazine*. <http://www.pcmag.com/encyclopedia>.
- Kamal, M. M., Themisrocleous, M., & Morabito, V. (2008). Evaluating e-government infrastructure through enterprise application integration (EAI). In Z. Irani & P. Love (Eds.), *Evaluating information systems. Public and private Sector*. New York: Elsevier.
- Kassicieh, S. K. (2010). The knowledge economy and entrepreneurial activities in technology-based economic development. *Journal of the Knowledge Economy*, 1(1), 24–47.
- King, W. R. (2007). The IS organization of the future: Impacts of global sourcing. *Information Systems Management*, 24(2), 121–127.
- Knowledge for development. K4M. (2009). The world bank. http://info.worldbank.org/etools/kam2/kam_page5.asp. Accessed 2 Dec 2010.
- Lam, W. (2005). Barriers to e-government integration. *The Journal of Enterprise Information Management*, 18(5), 511–530.
- Latour, B. (1997). *On Recalling ANT*, Lancaster LA1 4YN: published by the Department of Sociology, Lancaster University. <http://www.lancs.ac.uk/fss/sociology/papers/latour-recalling-ant.pdf>.
- Layne, K., & Lee, J. (2001). Developing fully functional e-government: A four stage model. *Government Information Quarterly*, 18(2), 122–136.

- Leedy, P. D., & Ormrod, J. E. (2005). *Practical research: Planning and design*. New Jersey: Prentice Hall.
- Lévy, P. (2001). *Cyberculture*. Electronic Mediation Series Vol. 4, Minneapolis and London: University of Minnesota Press.
- Luyt, B. (2006). Defining the digital divide: The role of e-readiness indicators. *Aslib Proceedings: New Information Perspectives*, 58, 276–290.
- Machlup, F. (1962). *The production and distribution of knowledge in the United States*. Princeton: Princeton University Press.
- Karel, M., Gregory, M., Adrian, P., Gertjan, vanS., & Marijn, R.. Bringing Internet connectivity to rural Zambia using 2 collaborative approach. In *Proceedings of the 2nd ACM International Conference on Information and Communication Technologies and Development (ICTD)* (pp. 47–58). Bangalore, India.
- Livingstone, S., & Helsper, E. (2007). Gradations in digital inclusion: Children, young people and the digital divide. *New Media & Society*, 9(4): 671–696.
- Ma, L., Chung, J., & Thorson, S. (2004). E-government in China: Bringing economic development through administrative reform. *Government Information Quarterly*, 22(1), 20–37.
- Manovich, L. (2001). *The Language of New Media*. MIT Press.
- Mathee, K. W., Mweemba, G., Pais, A. V., van Stam, G., & Rijken, M. (2007, December). Bringing Internet connectivity to rural Zambia using a collaborative approach. In *Proceedings of the 2nd ACM International Conference on Information and Communication Technologies and Development (ICTD)*, 47–58, Bangalore, India.
- McPhail, T. (2006). *Global communication: Theories, stakeholders, and trends*. 2nd ed. London: Blackwell Publishing Ltd.
- Mossberger, K., Tolbert C. J., & Stansbury, M. (2003). *Virtual inequality: Beyond the digital divide*. Washington, DC: Georgetown University Press.
- Newell, S., Robertson, M., Scarbrough, H., & Swan, J. (2009). *Welcome to the companion website for man-aging knowledge work and innovation*. Basingstoke: Palgrave Macmillan.
- Norris, P. (2001). *Digital divide: Civic engagement, information poverty, and the Internet worldwide*. Cambridge/New York: Cambridge University Press.
- Olszak, C. M., & Ziemba, E. (2008). The conceptual model of a web learning portal for small and medium sized enterprises. *Issues in Informing Science and Information Technology*, 5, 335–351.
- Olszak, C. M., & Ziemba, E. (2009). The information society development strategy on a regional level. *Issues in Informing Science and Information Technology*, 6, 213–225.
- Olszak, C. M., & Ziemba, E. (2010). Knowledge management curriculum development: Linking with real business needs. *Issues in Informing Science and Information Technology*, 7, 235–248.
- Olszak, C. M., & Ziemba, E. (2011a). Communities of practice in knowledge management and organisational learning. In J. Yearwood, & A. Stranieri (Eds.), *Technologies for supporting reasoning communities and collaborative decision making: Cooperative approaches*. Hershey: IGI Global.
- Olszak, C. M., & Ziemba, E. (2011b). The use of ICT for economic development in Silesian region in Po-land. *Interdisciplinary Journal of Information, Knowledge, and Management*, 6, 197–216.
- Osai, O. J. (2013). Arab spring: The genesis, effects and lessons for the economies of the third world. *African Research Review*, 7(1, 28), 165–188.
- Pasquali, A. (2003). A brief descriptive glossary of communication and information aimed at providing clarification and improving mutual understanding. In B. Girard, & Ó. S. Siochrú (Eds.), *Communicating in the Information Society* (pp. 195–223). Geneva, UNRISD.
- Reda Azarias, C. E., & Brian, N. (2011). Towards improved web acceleration: leveraging the personal web. In *Proceedings of the 5th ACM Workshop on Networked Systems for Developing Regions (NSDR)* (pp. 57–62) Bethesda, Maryland, USA.
- Rivard, S., Aubert, B. A., & Patery, M. (2004). *Information technology and organization transformation. Solving the management puzzle*. New York: Elsevier.

- Robertson, S. P., & Vatrapu, R. K. (2010). Digital government. *Annual Review of Information Science and Technology*, 44, 317–364.
- Rossiter, N. (2006). *Organised networks: Media theory, creative labour, new institutions*. Rotterdam: NAI Publishers and Institute for Network Cultures.
- Roztocki, N., Weistroffer, H. R., Monar, S., & Nasirin, S. (2007). IS/IT in developing and emerging economies. Proceedings of the Thirteenth Americas Conference on Information Systems, Keystone, Colorado, August 2007.
- Roztocki, N., & Weistroffer, H. R. (2008). Information technology in transition economy. *Journal of Glob-al Information Technology Management*, 11(4), 2–9.
- Roztocki, N., & Weistroffer, H. R. (2009a). Information and communications technology in developing, emerging and transition economies: An assessment of research. *Proceedings of the Fifteenth Americas Conference on Information Systems*, San Francisco, August 6–9. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1457435. Accessed 25 Nov 2010.
- Roztocki, N., & Weistroffer, H. R. (2009b). Research trends in information and communications technology in developing, emerging and transition economies. *Collegium of Economic Analysis*, 20, 113–127. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1577270. Accessed 25 Nov 2010.
- Sadowsky, G. (1996). *The Internet society and developing countries*. e-OTI: On The Internet. <http://www.isoc.org/oti/articles/1196/sadowsky.html>.
- Sahu, G. P., Dwivedi, Y. K., & Weerakkody, V. (2009). *E-government development and diffusion. Inhibitors and facilitators of digital democracy*. New York: Information Science Reference.
- Santra, T., & Giri, V. (2009). Analyzing computer-mediated communication and organizational effectiveness. *Review of Communication*, 9(1). <http://www.informaworld.com/smpp/content.doi:10.1080/15358590701772259>.
- Senthil Kumar, S., & Ramachandran, T. (2011). Social networking: A via media for consumer socialization. eProceedings for 2011 international research conference and colloquium *Contemporary Research Issues and Challenges in Emerging Economies* Graduate School of Business, University Tun Abdul Razak, Malaysia in Oct.
- Skolnick, E. (2011). Advancing “virtual civil society” in China. *Princeton Journal of East Asian Studies*, 1, 6–13.
- Smarter, faster, better eGovernment. 8th Benchmark measurement. (2009). Brussels: European Commission Directorate General for Information Society and Media.
- Stanley, L. D. (2003). Beyond access: Psychosocial barriers to computer literacy. *The Information Society*, 19(5), 407–416.
- Strategia rozwoju społeczeństwa informacyjnego w Polsce do roku 2013. (2008) (The strategy for the information society development in Poland until the year 2013.) (2008). Warszawa: Ministerstwo Spraw Wewnętrznych i Administracji (Ministry of the Interior and Administration). <http://www.mswia.gov.pl/strategia/>. Accessed 25 Nov 2010.
- Strategia rozwoju społeczeństwa informacyjnego województwa śląskiego do roku 2015. (2009). Katowice: Urząd Marszałkowski Województwa Śląskiego (The strategy for the information society development of the Silesian voivodeship until the year 2015). (2009). Katowice: The Marshal Office of the Silesian Voivodeship.
- Tapscott, D. (2009). *Grown up digital: How the net generation is changing your world*. New York: McGraw Hill.
- Tapscott, D., & Williams, A. D. (2006). *Wikinomics: How mass collaboration changes everything*. New York: Penguin Group.
- Taylor, M. C. (2003). *The moment of complexity: Emerging network culture*. Chicago: University of Chicago Press.
- Terranova, T. (2004). *Network culture: Politics for the information age*. London: Pluto Press.
- van Dijk, J. (2005) *The deepening divide. Inequality in the information society*, London: Sage.
- van Dijk, J. (2006). *The network society*. London: SAGE.
- van Dijk, J. (2006b, August-October). Digital divide research, achievements, and shortcomings. *Poetics*, 34(4–5).

- van Kranenburg, R. (2008). *The internet of things: A critique of ambient technology and the all seeing network of RFID*. Amsterdam: Institute of Network Cultures.
- Warschauer, M. (2003). *Technology and Social Inclusion: rethinking the digital divide*. London: The MIT Press.
- Yuan, Y., Zhang, J., & Zheng, W. (2004). Can e-government help China meet the challenges of joining the World Trade Organization? *Electronic Government, an International Journal*, 1(1), 77–91.
- Zysman, J. (2002). Production in a digital era: Commodity or strategic weapon? BRIE Working Paper 147 (Berkeley: BRIE, September 2002).