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New media and society: gaps and bridges

1. Introduction

The acknowledgement that information and communications technologies (ICTs) are reshaping the world is not quite new. In the beginning of the 1990's, as indicated by Wikipedia, Jan van Dijk was one of the pioneers in shaping the concept of "Network society" to explain how individuals were increasingly mediating its relationships through media networks that were gradually replacing and complementing the social face-to-face communication.

Some years later, in his iconic trilogy on the Network society, Manuel Castells went further to define networks organized around electronically processed information as the new structure and the basic unit of the post-industrial society: *"it's not just about networks or social networks, because social networks have been very old forms of social organization. It's about social networks which process and manage information and are using micro-electronic based technologies"*[1]. The consequences were said to be increased societal capacity to interact, learn and process information in an unprecedented way, adding new features to social interaction and allowing for a truly global society.

These predictions proved to be quite accurate. In the last twenty years all around the globe we could see increased and accelerated societal and economical interactions that are recognized as inherent elements of globalization.

Taking into account a political and governance perspective, many were the reasons for excitement regarding these changes. Improved participation in direct communication channels could "(…) *increase knowledge diffusion through improving communication efficiency*" (Javanovic and Rob, 1989, quoted in Chinn and Fairlie:4) and ultimately strengthen democracy in counteracting power concentration over communication means, which is seem as hand in hand with the *"control over the construction of social reality"* (Berger and Luckmann, 1966, pp. 123-128, quoted in Payne:9).

[1] Manuel Castells, "Identity and Change in the Network Society", interviewed by Harry Kreisler, *Conversations With History*, Institute of International Studies - UC Berkley, May 9, 2001. Retrieved at http://globetrotter.berkeley.edu/people/Castells/castells-con0.html

On the other hand, excitement has been more recently accompanied by mistrust. ICTs are also proving to engender a growing asymmetry in benefits generated, especially new media technologies based on the world wide web (www). The "Digital Divide" has been the term used to picture the unequal opportunities that people have to participate in these networks and, therefore, in society (Haddon, 2000).

If new media technologies are indeed one of the new dimensions of social exclusion, it seems that, in order to fully reach their potential, stronger policy efforts will be needed to guarantee they expand into new areas and fields without reinforcing existing socio-economical divides. Some proposals are already being scratched and even put in practice by academics and policy makers in both developed and developing countries.

This paper is organized as follows. Section 2 provides basic definitions in regard to key concepts used like ICTs, new media and digital divide. Sections 3 elaborates on the functions that new media technologies are performing and offers some hints on why the lack of participation might contribute to deepening inequalities and widening existing socio-economical-political gaps. Section 4 reviews and bring together some of the factors being pointed as influencing and defining the digital divide and Section 5 identify some policy measures that are being taken to counteract its wicked effects, followed by some concluding remarks.

2. Key concepts and definitions

This paper does not rigorously differentiate between ICTs and new media. According to an online dictionary, ICT's can be related to the narrower term Information Technology (IT), used to define the sector of industry dealing mainly with electronically data processing or management of information systems by computer (YourDictionary). However, when the concept incorporated the "C", standing for communication, it seems clear that its users are not only thinking about information processing functions but also communication functions. This feature approximates its definition of that of new media technologies: "*products and services that provide information or entertainment using computers or the Internet, and not by traditional methods such as television and newspapers"* (Cambridge dictionary).

But this definition is still incomplete for the purpose of this paper. Here we are considering new media as any contemporary device such as mobile computing, mobile video-phones like skipe and also online platforms like blogs or social networking sites that are *"increasingly revolutionizing production processes, access to markets, and information sources together with social interactions" (*Dutta and Mia, 2009:9).

The concept of Digital Divide or Digital Gap is related to ICTs and new media in the sense that differentiated abilities and opportunities exist to individuals or social groups to make use of

these new technologies. Following mainly van Dijk, the digital divide is defined by the gap between those who do and those who do not have access to computers and the internet. The author considers access not only in terms of physical or material access, but also meaning motivation, skills and usage, which will ultimately shape the causes of the digital divide (van Dijk, 2005).

3. Against what the "excluded" are been excluded?

At the back of the fear that new media technologies are also generating unequal chances for people to participate in networks there is the assumption that the "excluded" are not benefiting from a wide range of activities, services and, more important, opportunities, that the use of these devices make constantly available.

Considering only the internet and mobile telephony technologies, the list of possible benefits has been well documented and keeps increasing: facilitating messaging and the "keep in touch" with family and friends, access to information produced outside the "pasteurized" mainstream media, the active production of information content and participation, social networking, reducing costs and broadening the reach of commercial transactions and so on. The speed that all this processes are happening is a quality by its own, as well as the other capacities or the building upon effect they engender.

It is out of the scope of this paper to detail how the lack of each of these interactions can make someone worse off, but some hints are easily derived.

Information asymmetry was deeply studied by nobel-prize Joseph Stiglitz in its effects in economy (Stiglitz, 2001), and today's new media technologies are recognized as having the capacity to increase this asymmetry from the "excluded" point of view. Oppositely, the access of production-related information through mobile devices can help poor small-holder farmers to better off, as can be seen in the project run by ONG Practical Action in Peru. In villages that don't even have regular electricity, farmers can get in local languages, via podcasting, important agricultural information generated by producers from other villages (Practical Action).

Another impact is certainly the power new media technologies have to facilitate political participation and mobilization and the dissemination of more varied sources of opinion and information, which theoretically contribute to strengthen democracy. Media gatekeeping in the USA is pointed as contributing to information deprivation and pasteurization of contents, limiting choices that are fundamental to democracy and the very most right to communicate (Payne, 2008).

Even in countries where transparency is not in the order of the day, some positive results of the use of new media technologies are reported: *"Today, the Russian Internet offers plenty of opportunities for free political debate – often linked with offline actions for civic (rarer*

ideological) protest and mobilization, for example among motorists. And it has been generally free from government's visibly restrictive interventions as is usually assumed (though there are periodic attempts to sue bloggers for libel who are critical towards local and regional authorities)(Misnikov, 2008:14)

A useful and concise framework to understand how this vicious cycle of inequality can work is offered by van Dijk and is fully reproduced bellow (van Dijk, 2005: 15):

> *1. Categorical inequalities in society produce an unequal distribution of resources*
> *2. An unequal distribution of resources causes unequal access to digital technologies*
> *3. Unequal access to digital technologies also depends on the characteristics of these technologies*
> *4. Unequal access to digital technologies brings about unequal participation in society*
> *5. Unequal participation in society reinforces categorical inequalities and unequal distribution of resources*

4. Digital divide and influencing factors: an evolving concept

The popularity the concept of (Global)Digital Gap or (Global) Digital Divide is gaining during the last decade suggests that more and more researchers and policy makers are aware about the complex and often contradictory effects generated by information and communications technology spread.

In an econometric analysis of the determinants of computer and internet use, whose some of the results are pictured in Table 1 below, Chinn and Fairlie compared across 161 countries and show that computer and internet penetration rates in developing countries are about 100 times inferior than those existent in North America and Europe (Chinn and Fairlie, 2004), while other studies point out to internal differences within countries (Verdegem and Verhoest, 2008).

Table1. Computer and Internet Penetration Rates for Highest, Lowest and Largest Countries (source: International Telecommunications Union, 2001)

Country	Region	Computers per 100	Internet Users per 100	Population (000's)
United States	North America	62.50	50.15	284,797
Sweden	Europe & Central Asia	56.12	51.63	8,910
Russia	Europe & Central Asia	4.97	2.93	146,760

Australia	East Asia & Pacfic	51.58	37.14	19,387
Korea (Rep. of)	East Asia & Pacfic	48.08	52.11	46,790
China	East Asia & Pacfic	1.90	2.57	1,312,710
Mexico	Latin America & Caribbean	6.87	3.62	100,368
Brazil	Latin America & Caribbean	6.29	4.66	171,827
India	South Asia	0.58	0.68	1,027,015
Ethiopia	Sub-Saharan Africa	0.11	0.04	65,390
Angola	Sub-Saharan Africa	0.13	0.15	13,528

Source: Chinn and Fairlie, 2004

This and other studies try to identify factors that are driving to this divide so that more sound policy could be designed to counteract its undesirable wicked consequences, considering that *"[o]vercoming digital inequalities is now considered to be one of the key drivers for social and economic welfare*" (Verdegem & Verhoest, 2008: 3). Some factors are repeatedly pointed out, like income inequality. Others are insights of a particular research. Table 2 bellow provides an overview of the factors revealed by the literature consulted in the elaboration of this paper:

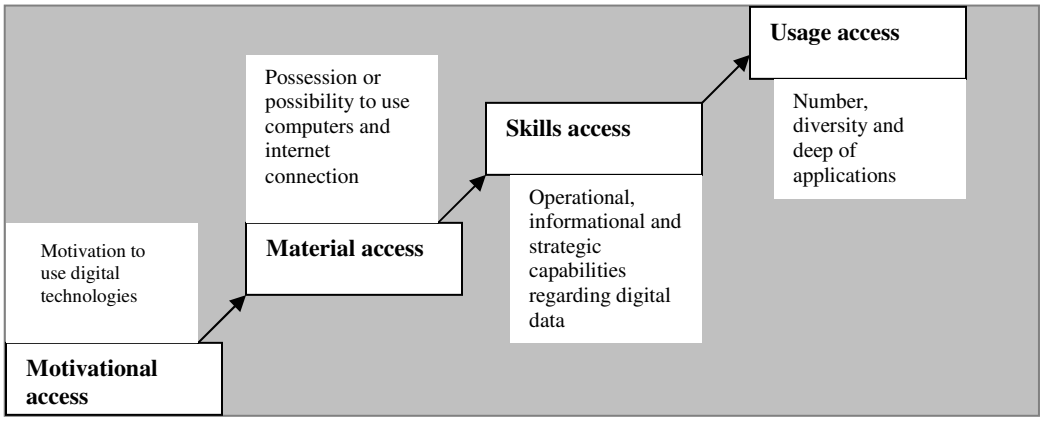
Table 2. Factors influencing unequal access to new media technologies

Actor-side impediments	Supply-side impediments
• Income and social economic status • Gender • Age • Education (human capital) • Perception of utility	• Access to electricity • Telecommunications infrastructure • Pricing/costs (signature, telephone connection) • Quality of the experience

But perhaps the most interesting aspect of this research is that it is slowly moving towards a better qualification of the different kinds of access that characterizes people's relation with new media technologies beyond access to computer and internet connection. This is very well systematized in van Dijk's book (van Dijk, 2005). The message – which is extremely relevant for policy making as developed in the following section - is that material access to computer or internet connection is only one element to allow people to benefit from new media technologies potentials. Equally important are the capabilities, abilities and motivation that will allow for the fully appropriation of potentials offered by new media technologies. Following van

Dijk's reasoning, we would have different elements defining different kinds of digital divide that are successively deeper and cumulative, as showed by Figure 1.

Figure 1. van Dijk's cumulative model of successive kinds of access to digital technology



Source: Adapted from van Dijk, 2005:22.

5. How to fulfill new media's potential?

Policy measures are being developed worldwide that try to bridge or minimize the digital gap. As one might think, these measures are not only aimed at developing countries to address the global digital gab, but increasingly common in developed countries that have seen their own internal gaps not necessarily widening, but worse, deepening (van Dijk, 2005)

In a study focused on Belgium, where the authors were mainly interested in profiling the non-users, it is suggested that in countries with high rate of computer and internet penetration, the policies adopted until recently will not anymore perform like before. *"As more people are online, it becomes more likely that the remaining fraction of non-adopters is either hard to convince, under-skilled or simply lacking the financial resources to afford a connection"* (Verdegem & Verhoest, 2008 p:1)

Referring to policies adopted until recently the authors mean policies that have the increase of material access as the foremost target, and a core element of making available cheaper computers. This is a very widespread model that was used for example in the 2006's governmental campaign in Belgium called 'Internet for All', a private-public partnerships created to offer potential buyers a low priced package comprised by personal computer, internet connection and training (Verdegem & Verhoest, 2008). Even having achieved positive results, further evaluation showed that policy initiatives based on strategies of group segmentation and differentiation will be more effective and less expensive than generic policy measures, and that an increase in value of ICT for end-users will be critical in targeting the remaining fraction of non-adopters in developed countries.

This kind of policy focused on increasing material access is also common in developing countries. Since 2003 Brazil launched the project "Cidadão Conectado - Computador para Todos" (Conected Citzen – Computers for all), where the government offers financing to poor families and teamed up with the national industry to offer a price reduction to the acquisition of the first computer (Governo Federal, Brazil). This has been followed by programs of digital inclusion and e-development that aim to accelerate people's access to broadband via public access points like schools and telecenters, so to exempt the poor to pay internet fees (Dutta and Mia, 2009). The government also realized the need for skills to users to make full use of new media potential, so schools have been the main locus of e-education initiatives. Following on van Dijk comprehension that unequal opportunities to use ICT's potential reinforces categorical inequalities and unequal distribution of resources, what have been called e-government – digitalizing public services like voting (since 2000) and tax filling system (since 2003) and increasing the offer of public services through the internet – is also expected to fight against Brazil's digital and social gaps. E-government is expected to increase the reach and the efficiency of public services while reducing costs.

Some more innovative experiences are also in course like the "City of Knowledge", an action-research program at one of the most important Brazilian public Universities, in São Paulo. Among other activities, the initiative has built between 2003 and 2008 a collaborative strategy for the creation of knowledge communities and management of local icons as a local development strategy leveraged by ICTs – putting in practice concepts like ICT4D (Information and communication technologies for development) and digital emancipation, counteracting the idea that digital inclusion would be enough as a country strategy (Schwartz, 2008).

In very low income countries like many in the Sub-Saharan Africa though, strategies seem to have been a bit different and focusing on technologies that are already more widespread, like mobile telephony. A recent and comprehensive BBC study in Africa shows that *"[i]n the new media sector, the adoption of mobile telephony has been the most spectacular, far exceeding the uptake of the Internet"* (BBC World Service Trust, 2006:25).

Some facilitating factors behind the exceptional diffusion of mobile telephony in the last two decades, even in very low income countries, seem to make the difference that computers and internet are still far to reach: *"infrastructure fairly easy to deploy, a market generally open to new entrants, and the decreasing costs of mobile handsets and communication per minute, among others" (*Dutta and Mia, 2009). Again we have to agree with van Dijk (van Dijk, 2005) that unequal access to digital technologies seems to also depend on the characteristics of these technologies, policies needing to take that in consideration.

Concluding remark

New media technologies have an unprecedented potential to enhance communication efficiency, facilitate political participation and mobilization, strengthen democracy and, ultimately, allow people to fully participate in society. However, as we could see, it also has the same potential to deepen categorical inequalities already existent in society because people have differentiated access to digital resources.

In order to counteract these wicked effects, policy makers worldwide are launching governmental programmes to enhance disadvantage people's access to new media devices, especially computers. However, these policies seem to be still far away from an ideal connection with more recent research findings, which are pointing for different kind of digital divides produced by different factors. Van Djik lessons are still not well absorbed by policy makers as still, even in developed countries as we could see from the Belgium example, much effort is put of material access without taking into consideration the other equally important capabilities and motivations that will allow for the fully appropriation of potentials offered by new media technologies and fully bridge the digital gap.

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