Introduction: A comprehensive digital communication

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This book analyses several aspects of media convergence particularly related with the digitization of the transmission channels which give the world a binary nature. This technical specification of the information society abolishes the frontiers between the old mass media and the new computer systems which mainly operate within a peer-to-peer logic resulting in sociological changes that are still nebulous but nevertheless significantly impacting on the formation of communication contexts, on the debates about policy and regulation, and consequently, on the notion of citizenship in a globalized world. The new international configuration provided by the adoption at a planetary scale of the mathematical language of two digits has put an end to the Babel Tower and positioned the globalized local, national and supra-national communities in constant interaction (even if not necessarily in dialogue). New networks have created high and glowing expectations regarding quick and trans-boundary communication flows.

The present-day technological landscape and the intensity of its pro-active imposition (perceived as inevitable and urgent) have transformed digital telecommunications' politics into government priorities. Therefore, there was a public comeback on media questions, which is, according to Gómez-Barroso and Feijóo (2010), the third phase of the relationship between states and companies. According to these authors, the first phase refers to the period between the end of World War II and the seventies, when telecommunications were subjects related to national sovereignty questions and, practically in all of Europe, services were provided by public companies, the "national champions" within the framework of the communication sectors' natural monopolies. The second phase is marked by changes in the global

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scenery, which include economical and political questions influenced by alterations in the world-wide politics of oil production, provoking successive rises on the price per barrel, which consequently brought the weakening of national states and the strengthening of important industrial players that, in the need of gearing up their behaviour towards the crisis, started fighting state interferences in their strategies. From the businessmen point of view, it was necessary to reduce the welfare state and to diminish the cost of workers for the companies by cutting benefits, that is, it was necessary to substitute the current Keynesian model of economy by a neoliberal model, one that would give a bigger autonomy to private initiative.

Such policy was largely implemented throughout the western world. It was spread out the idea that the state was inefficient, excessively bureaucratic and that the market could offer better quality services at lower prices. In this new scenario, telecommunications started to be seen as an essentially private matter. The public power had the limited function of intermediation, but no longer could it extensively intervene. Such idea is still prevalent but since the first decade of the XXI century, the need for a digital inclusion has brought the public power back to the centre of decisions on telecommunications investments.

In this third phase on public-private relationships, the public power returns to the sector's decisive centre and does enormous investments on the construction of electronic communication networks. The telecommunications and new generation networks infrastructures - which include broadband spectrum Internet – have been considered by governments as strategic areas of development.

Among the main reasons for the return of public investment to the telecommunications sector are the equity and the need to stimulate an industrial policy in the area. Regarding equity, public involvement is justified by the necessity to promote digital inclusion in order to balance the participation of people and also regions on the economic, political and social life which is built from a new world in bits. Referring to the industrial policies, the public sector has intervened to provide competitive advantages for domestic actors. Therefore, it becomes a state function to make available infrastructures for digital data transmission that are to be used in consumption as well as in production.

Television is still in the front-row role of the new world of telecommunications. But differently from what was taking place up to the beginning of the '90s, when TV channels and content were high in the agenda, now terrestrial TV is accounted for a system which uses a precious space, the radio spectrum, which serves as a platform for digital data transmission, and therefore it must be better used in order to allow the entry of new electronic services of communication. Hence the urgent necessity of converting analogical television into digital, since television signals occupy fewer frequencies because of their binary status.

Previously, when the spectrum was only serving for the diffusion of electric signals, the world of computer science was something apart from the television world.There was an industry which occupied itself with computer production and its by-products, and another one which was moving itself around the production of electronic equipment which was intended for the market provided by television. While North Americans stood out in computer science, leadership in the television equipment industry belonged to Japan. Hence the Japanese were pioneers in developing a specific high definition television standard, betting that image improvement was the right path for the television of the future. The Japanese pattern for HDTV, called Hi-Vision, was based on analogue transmissions and it was somewhat revolutionary. Bearing in hands something which was groundbreaking, the country hurried to seek the support of great groups in order to propose that its technology would be turned into the worldwide television pattern. But both Europe and the United States, because of market logic issues, refused the offer and started to work with their own technologies.

In the '90s, the United States became responsible for 40 % of the consumption of information technologies in the planet, leading the market of computer production companies, telecommunication equipments and software. It was when the country glimpsed that the future of TV would not go solely through image improvement, but also through the convergence between the most diverse means, and this would only be possible if television was binary like computers.

Before digital TV's configuration, Japan sees its technology become obsolete even prior to its full development. Nowadays television signals cease to be transmitted through electric waves and start to be carried as bits. That allows a better use of the

radio spectrum and frequencies are freed in order to be used in new electronic communication services, such as the high speed spectrum Internet.

Since telecommunications convergence is a result of the split between the world of computer science and broadcasting, we have decided to divide this book in two parts. The first one addresses the implementation of television digital systems in some European countries that are facing singular predicaments within the conversion process. According to Iosifidis (2011), these situations are mainly caused by the fact that the European Union has recommended state members the analogical switch-off in 2012, creating great distortions in domestic markets demonstrating to be incompetent to properly govern the play of interests which such change involve. Among the countries that have been presenting problems, we can quote Poland, whose proper history even suggests social difficulties in promoting political understanding of the issue. We can also mention small Western European countries like Greece, Ireland and Portugal, which do not constitute cases of success in terms of migration.

So, the first five chapters are dedicated to the presentation of singular cases of the European digital terrestrial TV, in order to clarify how the implementation of digital transmissions are taking place. We are going to present details on the TDT implementation process in Poland, Greece, Portugal, Ireland and Italy.

The Polish case is described by Adam Kupiec who gives us a general view of the country's politics for the analogical switch-off, demonstrates which are the main interveners and evaluates government actions, pondering on the delays that the country is facing regarding other European countries.

Regarding Greece, Stylianos Papathanassopoulos and Konstantinos Papavasilopoulos analyse the reflexes of the country's internal politics which resulted in a slanting digital TV process of implementation, which was aggravated by the economical crisis that has knocked down the country since 2009. The authors demonstrate that the government has left the construction of the digital TV model in the hands of the market.

The Portuguese case is analysed by Célia Quico, Manuel José Damásio, Iolanda Veríssimo and Sara Henriques who illustrate the results of a qualitative and quantitative project on digital television that was carried out in 2011. This study

highlights the logic of the stakeholders which were involved in the system's implementation process and also the viewers' perceptions.

On Ireland, which only began to implement its digital terrestrial television system in 2011, Kenneth Murphy explains why the country is one of the furthest behind in all Europe in what concerns migration, narrates the process' round trip, reflects on the way the economical crisis has affected the plans for the end of analogical television transmissions.

The Italian scenario is approached by Emiliano Treré and Valentina Bazzarin who talk about the country's reality focusing on a Web TV perspective. They demonstrate how Web channels have become an alternative to the duopoly market in Italy, which is dominated by the public operator RAI and by the private group Mediaset owned by Silvio Berlusconi. Such characteristic turns Italy into a singular case. The chapter reflects on questions of regulation and deeply leans over the emergent market of Italian channels in the Web.

The second part of the book addresses digital communication in other spheres rather than television. It is pointed out the convergence that has been taking place in cinema, radio and education. Cinema is reported by Gabriel Menotti, within a peer-to-peer movie distribution logic, which brings up the piracy subject. Menotti supports the notion that cinematographic experience is made rich from the digitization and diffusion of movies, wrapped in the concepts of multimedia and transmedia.

In the chapter about radio, Fábio Ribeiro analyses the way Internet has been modifying the radio environment. Starting from a case study, where he observes the participation of listeners in two Portuguese broadcasting stations, the researcher reflects on the possibilities that being online can provide to radio, in terms of interactivity between the environment and the public. He emphasizes nevertheless that, that although the Internet allows new participation windows, it still does not exist a clear model of Web radio financing.

Digital education analysis is done from a study which was carried out in Brazil, where, up until the communications digitization, analogical TV was one of the most important means used by the country's pedagogic politics, as a way of complementing teaching in the classroom. Ivaldir Júnior, Marcelo Mendonça, Bento Silva, Cleyton Rodrigues, Flávio Dias and Ryan Azevedo, analyse the viability of distance teaching on

the basis of digital interactive ways. They present data on a project which they have carried out to evaluate the efficiency of distance education means on T-learning platforms (transformative learning), supported on digital platforms, especially television.

References

Denicoli, S; **Sousa**, H (2012). *The implementation of DTT in Portugal: a case of public-private interplay.* International Journal of Digital Television, Vol. 3, nº1, 39-52.

Cave, M.; **Martin**, I. (2010). *Motives and means for public investment in nationalwide next generation networks.* Telecommunications Policy, 34 (9), 505-512.

Gómez-Barroso, J. L.; **Feijóo**, C (2010). *A conceptual framework for public-private interplay in the telecommunications sector.* Telecommunication Policy, 34, 487-495.

Iosifidis, P (2011). *Growing pains? The transition to digital television in Europe.* In European Journal of Communication, (26)1, P. 3-17. Sage, London.