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Introducing New Technologies in Media Companies from Romania, Portugal, Spain and Cyprus. A comparative approach

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Abstract

Media companies from all over the world are undergoing a digitalization process, forced by the rapid distribution of technologies and by the proliferation of computer networks. The multimedia newsroom has become a reality in less than a decade even in media companies that were reluctant to the introduction of new technologies. Analyzing this process often proves to be a difficult endeavor, as the rapid growth of multimedia or Internet has not been followed (for objective reasons) by adequate theoretical frameworks, which may provide pertinent concepts and models.

The paper will therefore explore the introduction of new technologies in media companies in Romania, Portugal, Spain and Cyprus, using an institutional approach. We will pinpoint similarities and variations in the process of absorbing new technologies, among these countries and within these countries, in order to identify how the institutional forces (ranging from EU legislation to market forces and political systems) influence the implementation of new technologies in the newsroom.

The empirical data used in this paper are part of national reports on media and new technologies in Romania, Portugal, Spain and Cyprus. The reports were made during an extensive, two-year long research exercise, developed within the framework of a Leonardo Da Vinci project (“Media DigIT. Digitization in the Communication Sector. An European Challenge”), in which the authors of the present paper played an active part.

Keywords

New technologies, institution, Romania, Portugal, Spain, Cyprus.

L'introduction des nouvelles technologies dans les entreprises des médias en Roumanie, Portugal, Espagne et Chypre. Une approche comparative

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Résumé

Les entreprises des médias, partout dans le monde, éprouvent un processus de digitalisation, un résultat de la distribution rapide des technologies et de la prolifération des réseaux des ordinateurs. Les rédactions multimédia ont devenues une réalité en moins de dix ans, même dans les entreprises qui étaient réticentes, face à l'introduction des nouvelles technologies de communication (TIC).

L'analyse scientifique de ce processus est difficile, parce que l'évolution rapide des multimédias et d'Internet n'ont été pas suivi (pour des raisons objectives) par le développement des cadres théorétiques adéquates, avec des concepts et des modèles pertinents.

Cet article va explorer l'introduction des nouvelles technologies de communication dans les entreprises des médias en Roumanie, Portugal, Espagne et Chypre, en utilisant une approche institutionnelle. Nous allons souligner les similarités et les variations dans les processus d'adoption des nouvelles technologies, parmi ces pays et dans ces pays, pour identifier comment les forces institutionnelles (allant des réglementations de l'Union Européen, aux forces du marché et au système politique) influencent l'implémentation des TIC dans les rédactions.

Les données empiriques utilisées dans cet article proviennent des rapports nationaux sur médias et TIC en Roumanie, Portugal, Espagne et Chypre. Les rapports ont été rédigés dans le cadre d'un projet de recherche extensive, qui a duré deux années et qui fait partie d'un projet Leonardo Da Vinci "Media DigIT. Digitization in the Communication Sector. An European Challenge", où les auteurs ont activement participé.

Mots-clef

TIC, institution, Roumanie, Portugal, Espagne, Chypre.

Digitalization of media companies started as a slow process with the introduction of the first computers in the 1980s. In time, it has brought major changes in newsrooms all over the world, due to the rapid rhythm of Internet development and the implementation of digital technologies in all the stages of production, distribution and reception of the journalistic products. This change has not been perceived in the same way by all social actors involved.

One well-known print journalist, currently editor-in-chief at *Cotidianul (The Daily)*, a quality Romanian newspaper, admitted in August 2009 (Iolu, 2009, p. 6) that he continues to use his typewriting machine. Apparently, in his opinion, document texts tend to disappear from the laptop, but not from the typewriter. He considers himself "naïve" in terms of computers. In reality, in Romania, typewriting machine are

historical items, meant to be found in museums, but some journalists' fear of new technologies is real. The digitalization process, which developed in all media companies, was not always welcomed by journalists and their managers. And the situation was the same in other European countries. Nevertheless, the multimedia newsroom have become a reality in less than a decade even in media companies that were reluctant to the introduction of new technologies.

This paper will explore the introduction of new technologies in media companies in Romania, Portugal, Spain and Cyprus, using an institutional approach. We will pinpoint similarities and variations in the process of absorbing new technologies, among these countries and within these countries, in order to identify how the institutional forces (ranging from EU legislation to market forces and political systems) influence the implementation of new technologies in the newsroom.

We will define digitalization as the integration of digital technologies in the daily routine of the newsroom, and digitization as the conversion of analog information to a digital form, suitable for electronic devices.

Institutional change and technology

The scientific approach to technology and institutions falls into two broad categories (Scott, 2004): (1) a deterministic view, which considers that technological changes have a unidirectional and deterministic influence on the organizational structure and behavior and (2) a social construct view. Manuel Castells (2000), with the concept of network society, is a representative of the first group of scientists. Three independent processes, Castells (2000) explains, led to the development of a new economy, as part of a new society- *the network society*. The three causes are: (1) the Revolution of Information Technology, (2) the socio-economic restructuring of capitalism and of statism and (3) the cultural and social movements in the 60s in the United States of America and Europe. The network society is characterized by a new technological paradigm, based on the implementation, on a large scale, of the new information technologies.

The second type of studies is focused on the interpretations and the significations (potential) users give to technology. These interpretative processes may influence adoption and usage of a new technology. We intend to place our study in the second category, by analyzing the factors that influence the actual adoption and usage processes related to new technologies in the newsroom.

Introducing a new technology in an industry is an external factor that may have as effect an institutional change, if it affects either the existence of specialized groups or the work conventions inside a professional world (Scott, 2004). The institutional change happens in three steps (Morrill, apud Scott, 2004, p. 230): (1) innovation, this is creating new roles and practices, (2) mobilization, this is, attracting necessary resources and legitimacy from essential social actors and (3) structuration, this is, creating a stable and uncontested institutional space.

The adoption of digital technologies in the newsroom is very recent. The commercial web browsers, Netscape, launched in 1994, and Internet Explorer, from Microsoft, launched in 1995, permitted the first steps in the digitalization of journalism. In 1996, most of the important news outlets in the USA had a web presence (Scott, 2005). The first convergent newsroom appears only in March 2000, in Tampa Bay, USA: The Tampa Tribune, TBO.com and WFLA-TV are gathered in a News Center, in order to

reduce the number of journalists on the field and to maximize the exposure of the information gathered, on all three channels (Carr, 2002; Scott, 2005).

Nevertheless, in studies published in 2001 on journalistic practices, Internet has not yet “a practical reality” (Plesner, 2009, p. 607). Digitalization meant new suppliers, new markets, new jobs, new competencies, thus the need of new training. Introducing Internet and digital devices in the newsrooms was still in the innovation stage, but adoption was helped by the interest for the dot com companies on the stock exchange.

Since 2002, several business models have been coined for the journalistic products on the Internet, to make the medium usage profitable (Scott, 2005). Now, the world wide web is the resource of choice for the journalists, when it comes to research for sources, subjects and background information; e-mail won the turf battle with the telephone and the fax machine. Yet, newsrooms still use both analog and digital technologies: we are still the witnesses of a mobilization phase in the adoption of the new technologies, in some regions. Studies of the newsroom found that the traditional media experience a “fear-driven” culture related to innovation. As the new and innovative media emerge, the reaction of traditional media is not excitement, but fear, of the destruction of their monopoly. Thus, many traditional media proactively embraced new technology as a defensive strategy (Nguyen, 2008, p. 92).

The factors influencing the adoption of digital technologies may be placed in three categories (Scott, 2004): regulative (legislation imposed to the industry), normative (standards to improve compatibility, decided by the organizations within the industry) and cultural-cognitive (symbols and definitions identifies by users in relation to the new technology). Usage of new technology is dependant on the stock of existing knowledge and the accumulation of new knowledge (see Atkeson, Kehoe, 2005, for the first industrial revolution). Also, propagation of new conventions, including new technology usage, is dependent on communication and on perceived social identity (Strang & Meyer, 1993, apud Scott, 2004).

The studies indicate that innovations are accepted especially if they are imposed by regulations (Scott, 2004). Nevertheless, rules are institutional pressures that may be accepted or not, depending on the willingness and ability of organization to conform (Oliver, 1991). Legislation may be contested; its signification may be negotiated among social actors. An old technology is abandoned, leading to an institutional change, when it is de-legitimized, either because it is considered illegal, or inefficient, or immoral or because the technology doesn't fit anymore in a commonly held definition (see Scott, 2004).

Political structures and journalism

The comparative approach in media research is linked by tradition to the political structure of every country. The close relationship between media and politics, which exists in every society, led to the assumption that press always takes the form of the social and political system in which it operates. This is the main thesis of the first important book on comparing media systems: *The Four Theories of the Press*, by Fred S. Siebert, Theodore Peterson and Wilbur Schramm (1956). Since the first edition of *The Four Theories of the Press*, there were other attempts to classify the worldwide media in models, categories or types (Joseph, 2005, pp. 575-590). On the other hand, it is argued that: “Research outside the Anglo-Saxon orbit, which has so far shaped the dominant journalistic concepts, is now challenging these paradigms” (Joseph, 2005, p. 576).

One of the recent influential comparative studies in the field of media is *Comparing Media Systems: Three Models of Media and Politics*, by Daniel C. Hallin and

Paolo Mancini (2004). Hallin and Mancini propose in their study a classification of media systems on three models: (1) the Mediterranean or Polarized Pluralist Model, (2) the North/Central European or Democratic Corporatist Model and (3) the North Atlantic or Liberal Model. Their comparative analysis of democratic systems in Europe and North America, sensitive to similarity and variation, try to overcome a major problem – studies on mass-media tend to be ethnocentric, i.e. they refer to the experience of a single country (Hallin&Mancini, 2007, p. 2).

Of interest for our paper is the Mediterranean or Polarized Pluralist Model, in which, we argue, could be included all the countries we refer in this study. Hallin and Mancini based they study on research done in Portugal, Spain, Italy, France and Greece. Recent research done in Cyprus led to the conclusion that this country could be included, also, in the Polarized Pluralist Model (Papathanassopoulos, 2007, p. 191-200). As for Romania, the press and the political developments from the last two decades are consistent to the Mediterranean or Polarized Pluralist Model, researchers argue (Jakubowitz, 2007, p. 304; for a complete demonstration, see Petre, 2008, p. 57-60).

According to Hallin and Mancini, Mediterranean or Polarized Pluralist Model is characterized by an elite politically oriented press, a delayed development of commercial media industries, as compared to the other countries in their study, a media focused on political life, a tradition of commentary oriented journalism and advocacy journalism, an instrumentalization of media by the government, by political parties and by industrialists with political ties. In Polarized Pluralist media, professionalization of journalism is not well developed and journalism is considered close to political activism. Public broadcasting is often strongly influenced by the government or by the strongest parliamentary parties. Although the State tries to play an important role in the functioning of the press, media from Polarized Pluralist societies have experienced a period of deregulation, characterized by researchers as being “savage” (Hallin&Mancini, 2007, p. 73).

In Mediterranean or Polarized Pluralist countries, Hallin and Mancini argue that the difficult transition from dictatorship to capitalism and democracy produced a media system closely tied to the world of politics (Hallin&Mancini, 2007, p. 138). However, all Southern Europe countries represent important success stories, as “all emerged from very difficult circumstances politically and economically to consolidate democratic political systems and to narrow dramatically the economic gap that separated them from the rest of Western Europe earlier in the century” (Hallin&Mancini, 2007, p. 139).

The introduction of new technologies represent in Hallin and Mancini’s opinion a factor of homogenization in all types of media systems, not only in the Polarized model. Although the authors do no insist on the technological aspect of media evolution, they explain that the introduction of any kind of technologies produces a process of standardization, but also particular adaptations by individuals and social institutions (Hallin&Mancini, 2007, p. 260). The introduction of new technologies of communication is supposed to bring a transfer of professionalism. The Internet, along with CNN and European Broadcast Union, are considered to be powerful instruments of spreading common procedures and skills. The authors consider that it is very probable we will have, in the future, a global culture of technical expertise, which will be relatively separated from national political cultures. A generation gap exists already between young professionals who are exposed to innovations and are concerned on the professional aspects of their jobs and older journalists who focus on the political lines of their media organization (Hallin&Mancini, 2007, p. 261). Normative analyses of newsroom practices do tend to contradict this prediction: analysis is sacrificed in favor of instant

(international) news, multi-skilling means, in fact, a de-skilling (Cottle & Aston, 1999), desk journalism is replacing field journalism.

Taking into consideration the fact that all the media systems analyzed could be included in a sole category, from the political structure point of view the hypothesis of our comparative study is that the process of digitalization tends to be similar, in this regards, with little variations in Romania, Portugal, Spain and Cyprus.

We argue that, in the case of an industry adopting a new technology, the process is related to the cultural-cognitive definitions decision factors of the industry have for that technology (what will the future bring, in their opinion), the size of the market, the level of the structuration of that industry (development of the industry, (de)regulation degree of professionalisation, pressure from employees), the ownership of a media outlet, all related to the socio-political history of a country. The analyzed national reports refer and comment upon these factors. Also, the above mentioned factors were vital both in institutional analysis on the adoption of innovations and in the construction of the Hallin and Mancini's three models of political influences of the mass-media system.

Methods

The empirical data on which this paper relies was furnished by four national reports (Estevez, 2006; Fernandes, Cascais, 2006; Paschalis, 2006; Radu, Surugiu, 2006), on digitalization in Cyprus, Portugal Romania, and Spain, prepared for the international project "Digitization in the communication sector: a challenge for Europe – Media DigIT". The project was developed between 2005 and 2007, within the framework of Leonardo Da Vinci program. The partners from Spain (Col·legi de Periodistes de Catalunya, Fons Formació Zona Mediterrània, Sindicat de Periodistes de Catalunya), Portugal (Centro Protocolar de Formação Profissional para Jornalistas and Sindicato dos Jornalistas), Romania (Centrul pentru Dezvoltare si Inovare in Educatie – TEHNE), Cyprus (Union of Cyprus Journalists) and Norway (Rogaland Kurs-og Kompetansesenter – RKK) focused their work on the traditional media sector.

The project aimed to design training itineraries with transnational validity to help media professionals adapt to the new competences required by the ongoing digitization process. The project included a field research about the digitization processes undertaken by various media outlets in the first half of 2006, whose results are analyzed in the present paper.

Although the project team included a Norwegian partner, we will not discuss in the present paper its field research. The Norwegian media model is quite different from the media models in Romania, Portugal, Spain and Cyprus: Norway has, for example, the highest newspaper readership in the world (550-600 copies per 1000 inhabitants) and a tradition of public service media (Østbye, 2007, pp. 158-160).

The field research was based on in-depth interviews, with journalists, technicians, editors-in-chief, managers, and media experts from Romania, Portugal, Spain and Cyprus. The media companies chosen had to be already finished with the digitalization process or to be in the middle of the process, and they had to cover all possible levels within their countries: local, regional and national levels, print media, radio and TV, both private and public. The number of interviews was decided by every organization that participated in the project depending on each media landscape: Cyprus – 10 interviews, Portugal -16 interviews, Romania -16 interviews and Spain – 26 interviews.

The purpose of every interview was to identify the factors that are significant to digitalization in communication and information sectors and to investigate the factors that

produce important changes in the professions and the jobs related to media. The questionnaire was similar for all the countries and covered the following themes: the development of the digitalization process in that particular sector, the evolution trends, the achievements and the setbacks, the social actors involved in the process (companies, government etc.), the professional aspects of digitalization and its consequences for the job market.

The interviewing results are narratives of newsroom lives, so they contain “unique individual worldviews, perceptions that are negotiated through the act of storytelling itself” (Mello, 2002, p. 234). The information obtained by researchers should be used keeping in mind the “negotiated, nonlinear, and interactional nature of storytelling” (Mello, 2002, p. 233). This signifies that the national reports are, in fact, based on perspectives constructed through the interaction of researchers with newsroom representatives.

Analyses of the journalistic practices usually have a narrative form and are based on newsroom ethnographies (see Zelizer, 2004) or on interviews with the newsroom personnel (for example, Plesner, 2009, on new communication technologies).

Similarities in the digitalization processes

The digital promise was embraced by the most important international organizations, from the World Bank to the European Union. For most regulative bodies, the new information and communication technologies help governments run communities better, help citizens get more and better information, help entrepreneurs run better businesses. The International Labour Organization, a UN agency, is among the very few international voices that raised concerns related to the effects of the new technologies on work conditions. Based on this understanding of the new technologies, international organizations decided regulative actions and developed programs in order to speed the transition from analog to digital technologies.

In Europe, the digital switchover for television is made under the pressure of the European Commission that wants to free the airwaves from TV carriers, for wireless internet and advanced mobile phones services. In most of the countries, the process of switching off analog TV is following a centrally imposed plan. Six European countries and the United States of America completed the switch off by October 2009, some other six European countries (Spain included), will complete the process by the end of 2010. South Korea, Japan and 13 European countries (Romania, Cyprus and Portugal included) announced plans to end the transition in 2012, Australia, in 2013, India and Russia, in 2015 (*European Commission wants airwaves freed-up...*, 2009).

As a result of these cognitive and regulative pressures, the producers of analog machines and consumables changed their offer into a digital one. In 2006, already, it was getting harder and harder to find suppliers of analog equipment and consumables, as some of the specialists we discussed with pointed out (Radu, Surugiu, 2006).

The regulative pressures are accompanied by normative ones. There are several technological solutions that compete on the newly created digital market, and, as all players in the communication industries have to work on compatible platforms, there is a vivid discussion around the standards to be used in the future. On the commercial side, the Eureka 147 technology, for example, is supported by an international non-governmental organization, WorldDAB Forum, that promotes it as “a social good” (www.worlddab.org; WorldDab, 2005). Leaving the commercial side apart, associations of media companies based on ownership, as is the case of transnational media groups or of transnational public radio or TV association (like the European Broadcasting Union),

or associations based on type of platform used, as is the case of WAN-IFRA (World Association of Newspapers and News Publishers), are also important actors in the definition of technological standards.

There has been no regulative pressure for radio and for print yet. In the case of radio, the existence of several competing technologies led to the fact that radio companies are still not close to complete digitalization. In comparison, podcasting has evolved better (Estevez, 2006), because only one device was used, the Apple's iPod, and there was a compatibility of format.

There are four national reports (Estevez, 2006; Fernandes, Cascais, 2006; Paschalis, 2006; Radu, Surugiu, 2006) we are going to use in this paper. The 68 interviews, these reports are based on, were done with representatives of different Cypriot, Portuguese, Romanian, and Spanish media companies, that deliver editorial content in print, on-line, on television and on radio, at state, regional, provincial and local level, both public and private sectors. Thus, there may be differences based on national traits, on size of the market, on medium and on type of ownership. Nevertheless, the similarities among the reactions of social actors in the newsrooms and in the related fields in front of the new information and communication technologies are striking.

High expectations related to digitalization

First, all reports talk about the promises the new technologies brought with them: a promise of low costs, a promise of a better content, elaborated in a shorter time, a promise of increased productivity, a promise of better reach of audiences by satellite, where, in the past, terrestrial infrastructure could not be used. Some of the promises were broken: there are high costs related to software and its upgrading and hardware and its renewal. These costs have to be supported by content producers, by carriers and by the final consumer, the citizen. The early adopters of the new technologies, that were, by definition, very expensive, have even supported costs related to digitalization redesign (Estevez, 2006; Paschalis, 2006). Another problem is the newly created dependence on the technologies: if the systems crash, there is a backup solution only if the media company invested in one.

Some of the costs are supported by the state. In all four countries a central or several regional authorities manage the licensing process in audiovisual, both for analog and for digital transmission. Thus, the terrestrial digital networks are built due to state's involvement.

Other costs are supported by media personnel. The Portuguese report (Fernandes, Cascais, 2006) talks about photojournalists buying their own equipment, to get from analog to digital. This is now the case with many journalists, as personal computers became an usual item. Now, in all newsrooms, be them national or local, and for all media, the usage of Internet, email and computers is considered part of the daily routine. When the digitalization of the newsrooms' activities and of related activities started, at the end of the 1980s and the beginning of 1990s, this was not the case. This new knowledge acquisition is done, quite often, on the expense of the employee or the employee is simply left to deal on his/her own with the new technology, in a "natural professional recycling" (Estevez, 2006, p. 22). Now still, in the case of new software or new hardware, some new abilities have to be acquired and the problem is solved either by media companies, or by employees on their own. The demand for training and retraining is present in all countries.

Effects on the workforce

The introduction of new technologies has different effects on the workforce. The most dramatic effects were on older people, forced to accept an early retirement. Others lost their jobs, and some managed to return to the media company, after learning on their own how to interact with the computers (Radu, Surugiu, 2006). Yet in other cases, there were relocations of work forces, accompanied by training programs. All reports talk about autodidacts, about informal training from worker to worker, about in-house training and about training offered by suppliers. In several cases, training in cascade (from employee to employee) was attempted, as the suppliers could not give the required knowledge to everyone involved in the production processes. These training paths have, as effect, a first wave of poorer quality products, done less fast, as compared with the analog products. The problem was partially addressed by producers of equipment that try to offer products that replicate the functions of old analog machines, whenever possible.

After the universities and the professional schools managed to attune their programs for the new need of the industries (around the turn of the century), training of the new workforce is less of a problem. In addition, as pinpointed by all reports, young people embrace new technologies and feel more comfortable in trying and using them. Some of these young people are part of media companies that started directly on a digital platform. In contrast, older people define their professions with the use of analog devices and resist to the introduction of digital ones.

The introduction of new technologies opened new markets for editorial content, as is the case of news sent through SMS or through Podcast, and created new jobs that demanded new competencies, as is the case of IT technicians or of creative content managers for the convergent platforms. It also triggered changes related to old positions. Some professions disappear gradually or change into simpler tasks: typists (replaced by journalists), proof readers, news designers and page composers (partially replaced by specialized software), sound editors, image editors, even photographers (replaced by journalists). Some functions are widened, as is the case mainly for journalists, which did not receive additional remuneration. In local and regional newsrooms – the Spanish report added – journalists were doing a wide range of tasks even in an analog environment.

Due to the introduction of new technologies, the industries related to journalism dismiss the number of people performing some tasks (in typographies), but also had to hire people to increase the ranks of employees doing some other tasks (in archiving). Technicians have now more specialized jobs, related, for example, to special effects and noise reduction. This specialization is dependent of size of the company and on its management.

Variations in the digitalization processes

The digitalization process in Romania, Portugal, Spain and Cyprus, also presents a series of variations. These variations are influenced by four types of factors: the political conditions, the economic challenges, the technological circumstances, and the institutional characteristics of every country.

The instauration of a democratic regime, in Portugal, in 1974, and in Spain, in 1978, led to a liberalization of the media market that encouraged the adoption of new technologies as they became available, both the public and by private companies. The digitalization of mass-media started late in Romania, at almost ten years after the process had begun in the other countries (Spain and Portugal – 1983-1984). This situation was caused by the fact the Romania was a Communist country until December 1989 and the

Ceausescu regime did not permit the use of computers, but in very specialized industries. The fall of the Communist regime led to a rapid development of the media products (Gross, 1996, p. 55), but this did not have an immediate effect on the technological side. Many newspapers were printed using the old lead typographical machines, and TV production was entirely done on Betacam, U-matic and even S-VHS, including gathering footage, image editing, broadcasting and archiving. Newspapers were forced to do a technological leap, when the first off-set printing machines were imported in Romania, in 1994-1995. The radio stations began the digitalization process in 1995-1996, and the television stations, in 1998-1999, when the first non-linear equipments reached the Romanian professional market, in the form of digital satellite receivers and even AVID editing platforms (at the public channel) (Radu, Surugiu, 2006). Though, the delay in digitalization in Romania was rapidly recovered, due to the strong influence of technical equipment's distributors, who were offering attractive discounts for new-generation technology and discouraged the purchase of professional videotapes and linear TV spare parts (e.g. in the late '90s it became quite difficult to find U-matic cassettes).

On the other hand, in Cyprus, the political conditions have strongly influenced the situation of radio and televisions stations. "With 38% of the territory of Cyprus Republic under occupation as a result of the Turkish military invasion in 1974, some frequencies are illegally detained by radio-television stations operating in the part of the country under the occupation of the Turkish troops with the result that the number of frequencies which are available for transmissions by stations has decreased. The frequencies that Cyprus can now use are limited because of interferences from Turkey with whom there is no contact at all for the solution of the problems which, however, it is hoped it will disappear with the lapse of time" (Paschalis, 2006, p. 6). This difficult political situation may lead to limitations in the Cyprus' transition to digital TV, which it is supposed to finish in 2012.

The economic challenges

The size of media markets tends to influence the digitalization process. In Cyprus, for example, because of the small size of media market (the population is of 0.8 million, europa.eu), private TV channels were not pioneers of the new technology. "They expect a new technology to become solidly consolidated before they go ahead and adopt it" (Paschalis, 2006, p. 5). The Cypriot radio stations used only analog technology in 2006.

On the other hand, in Spain, the regional TV station Telemadrid – the first autonomous TV station in Spain to utilize DTT (digital terrestrial television) – bought a Sony integrated system, becoming at the time a pilot centre for the Japanese company (Estevez, 2006). As there is a large market (the population is of 45.3 million, europa.eu), the adoption of technologies was different. The computerized production systems, used by the television stations, were developed in house, bought from Spanish producers or bought from international producers, from the beginning of the 1990s even.

In Romania, in many cases the digitalization process was delayed because the owners of the media outlets were not able to invest in technology. This was the case, for example, of a Romanian newspaper, which began digitalization only in 2004, when it was bought by a rapidly developing media group (Radu, Surugiu, 2006, p. 10). The Romanian report stresses out that the transition to non-linear systems means a lower cost of this technology, in comparison with linear one. But reduced costs and having the necessary amount of money did not imply directly a sustainable development, in both strategy and management – as Romanian interviewees explained. "The simple fact that there are so

many TV stations in Romania should be considered as a good indication that «black money» is available in large amounts. So, in many cases, investing in equipment (and, by consequence, switching to digital technology) shouldn't be a problem. Still, the slogan of many TV managers is «the things are working just fine» and changes were implemented at a slow pace. And this is also a problem of standards, both technical and editorial”, argued a Romanian TV producer (Radu, Surugiu, 2006, p. 20).

In Portugal, the economical unfeasibility led to the disappearance of four important newspapers and to the privatization of a few public media outlets, at the beginning of the 1990s. The opening of the radio and the television to the private sector is considered to be a variable of the generalized change in the sector, produced by the digital technologies (Fernandes, Cascais, 2006). This, in turn, had effects on the market and on the adoption of new technologies by the industry.

On the other hand, in Portugal, the constant necessity of software upgrades and the renewal of hardware represent economic-related problems for the companies in the communication sector. The public television company (RTP) limited the investment in technology because of the costs. Also, in private televisions the investments were suspended or decreased due to the budgetary limitations (Fernandes, Cascais, 2006). Nevertheless, the Portuguese state supports financially the digitalization in radio and print, at local and regional levels.

The technological circumstances

The technological media systems experienced successive waves of innovation, in a short period of time. In Spain, the media organizations which started early to digitize their archives found that some of the formats they used became obsolete in a short period of time, and they should be re-converted (Estevez, 2006). The digitalization process was most likely seen, at first, as a completed process, not as an on-going one.

In Romania and Cyprus, the technical staff and media managers tend to fear the dependency on the ICT systems. Even though the systems are redundant and the security systems and contingency plans are highly developed, technology creates a constant worry for those in charge of its maintenance. For example, the Romanian radio and TV producers expressed concerns that “the digital systems are highly instable and the failures can appear anywhere” (Radu, Surugiu, 2006, p. 18). “We are 100% dependent on these systems”, explain the Cypriot journalists (Paschalis, 2006, p. 9).

On developed markets, digitalization may be hindered by consumers and even by the most important players. In Spain, as the radio stations transmit the same content through analog and digital means, the consumers do not feel the need to buy digital, more expensive receivers. The switchover is not legally imposed, so the national radio stations can oppose digitalization, also. The DAB system, used at European level, will destroy the entry barriers on the national market, putting regional or local players on the same position with the current national ones (Estevez, 2006).

The institutional characteristics

In Cyprus, in order to convince TV stations to implement digital television system, the authorities decided not to renew for a period of long period (10 years) the broadcast licenses for analog transmissions after 2011. The majority of the analog audiovisual licenses expire by 2011, and in the meantime the allocation of analog frequencies is suspended. The TV stations which have not finished the digitalization by 2011, will be granted extensions until the switch off time (planned for 2012).

In Romania, the digitalization process was very rapid in private institutions where journalists are not part of a professional union. In fact, in Romania, journalists' unions do not play an important role in society and in media, as compared to Spain or Portugal. The majority of media employees are not part of any professional union. Therefore, when the digitalization process began, the journalists had no protection against job cuts, payment reductions, or assuming extra tasks and responsibilities (for example, editing tasks for TV reporters). The journalists working in the private sector have not been included in any systematic training programs for using digital systems. Only in public service Radio and Television, journalists were offered in-house extensive training (including training abroad in the EBU network). Nevertheless, in public services audiovisual companies, there is a slow adaptation to digital systems, and important resistance to change. Although there were major investments in AVID equipments in the public television, the complete transition to non-linear system is not finished, not even in 2009. It is possible that the powerful unions – that exist only in the public sector in Romania – delayed the digitalization process. The public channels in Spain also face difficulties in incorporate digital technology, for political and bureaucratic reasons, as the Spanish report explains. A slower adoption of digital technologies in the public channels, as compared to private channels, is also visible in Portugal.

On other hand, in Portugal, the unions got involved in the negotiations on digitalization issues with the media owners from the early '90s. For a period of ten years, journalists' salaries were increased with 5% to compensate for the use of computers in the daily work. In 2004, the representatives of companies argued that this additional wage is no longer needed, as the period of transition to digitalization was over. The professional union (Sindicato dos Jornalistas) has obtained in exchange guarantees that journalists would not be forced to work for another publication in the same company (Fernandes, Cascais, 2006).

On the contrary, in Romania, the journalists are expected to work in integrated newsrooms, providing stories for more than one media outlet of the company. Also, another special feature of Romanian media is the so-called «Brown-ian movement» of journalists on the market, explained by one TV correspondent as follows: “each new TV station has attracted some staff from the previous one(s) and the respective staff was replaced with newcomers, 99% of cases less prepared and trained than those which departed. After 6 months or one year, this happens again, this time with the «second generation» of personnel, and other poorly trained workers are entering the profession. One might add to this the relatively poor level of payment which, in a vicious circle, is encouraging the mediocrity and generally low professional standards” (Radu, Surugiu, 2006, p. 21). The Romanian journalists interviewed for the report agreed that the main problem for private televisions is the fact that training of new recruits for technical departments is done only “on the job”. “The professional knowledge is «stolen», metaphorically speaking, by the newly employed technicians, because there are no other ways to acquire skills and abilities other than apprenticeship. Some TV stations are asking, when hiring people, only for basic technical knowledge” (Radu, Surugiu, 2006, p. 21).

On the contrary, in Spain, journalists benefit of enterprise-based training, but they do not like internal training plans outside working hours. “Given the peculiarly immediate nature of the journalist's task, those courses which are provided suffer a high degree of absenteeism”, explains the author of the report (Estevez, 2006, p. 22).

When it comes to digitalization of the television companies, Spain experienced a controversy related to the involvement of the public broadcaster RTVE in the

development of the Information Society. According to the domestic laws, the public television must “actively promote the development of the Information Society, taking part in technological advances using all means and channels of distribution and broadcasting, in addition to new techniques for the production and broadcast of programs and audiovisual communications services, and developing new services, including digital and online” (Estevez, 2006, p. 17). The Spanish experts and professionals explained that the public television was not able to play an active role in the process, because of the financial crisis and lack of strategic planning on this matter (Estevez, 2006, p. 17).

In Portugal, there are important fears that digitalization and deregulation of media encourages the mercantile character of the press information (Fernandes, Cascais, 2006, p. 10). In Romania, journalists consider that mediocrity and low standards are not linked with technology. “I’ve seen great things done on linear platforms, and stupid things on non-linear. Everything depends on people”, confessed a Romanian journalist (Radu, Surugiu, 2006, p. 25).

Discussion

The introduction of new technologies was accompanied in newsrooms from Romania, Portugal, Spain and Cyprus with high expectations, but also with fear and mistrust. The journalists hoped that digitalization could mean a better content, at a lower cost, and the facilitation of daily routines, so tasks could be performed easily and in less time. This cognitive definition of the new technologies was shared by the society at large, not only by the media industry.

The implementation of digitalization started at full speed in the mid-90s, in all the countries studied for paper. The ICT meant in the first place the reduction of many jobs (related to analog equipments), and the necessity for journalists to acquire new skills and knowledge in a very short period. The job descriptions of journalists in traditional media were re-defined, by adding new tasks, for example to take digital pictures in case of print media or to edit images for TV stations. All the national reports mentioned these transformations. In countries where there is a strong union movement, the evolution of the journalist’s series of tasks was not seen as a part of the professionalization process, but as an unnecessary and costly burden.

Media companies in the mentioned countries did not organize coherent training programs for the use of new technologies. They invested money in purchasing software and hardware, but little in training the employees. All reports mention attempts of training, like self training, informal training (worker to worker), in-house training or cascade-training. There is a clear lack of strategy related to the training of media practitioners for ICT, with serious consequences on journalists’ openness for new technologies. Unions, on the other hand, in their attempts to protect journalists were important brakes in the digitalization process. A vicious circle was born – journalists were not trained to use technology, and they sought the unions’ support to slow down the process. The unions forced the companies’ management to reform the newsrooms at a slower pace. In the meantime, journalists were still not offered the required training and they regarded the whole process with fear and mistrust.

The change could be considered slower in audiovisual sector in all the countries. The required investments are considerably higher and there is a need for personnel restructuring. Nevertheless, regulative pressures, from the European Union and the national bodies, market pressures, from the suppliers, and normative pressure, from the

industry's organizations, made the analog technologies be considered inefficient and pushed them little by little outside the legal framework. Analog technologies, especially in television, suffer a de-legitimization process on all three institutional pillars.

The main disadvantage of the digitalization, in the opinion of many technical directors and media managers, is the dependency on the ICT systems. Even though all systems are redundant and the security systems and contingency plans are highly developed, technology creates a constant worry for those in charge of its maintenance, in all the studied countries. Thus, a negative cultural-cognitive definition has been dealt with, but keeps the social agents in the normative area attentive, in an effort to build a stronger legitimacy base for the new technology.

The comparative study done on national reports of digitalization in Romania, Portugal, Spain and Cyprus showed many similarities and little variations. The process seems to be homogenous in all the mentioned countries, with similar successes and the setbacks. Previous studies claimed that the introduction of technology tend to be factor of homogenization in all types of media systems (Hallin & Mancini, 2004). Nevertheless, the important homogenous characteristic of the digitalization process in the studied country may be related to the social, economic and journalistic context of Romania, Portugal, Spain and Cyprus. It is a strong possibility that the explanation for the similar shape of the digitalization processes in the mentioned countries is related to the fact they all belong to a media model – the Polarized Model, based on a similar social and political historical evolution. One argument for this conclusion could be that variations in the digitalization process are linked to economical and institutional factors which, on their turn, are influenced by the important political transformation in a country (civil wars, revolutions) politics and by technology. Strong political turmoil may change the way institutions in a country develop. It is possible that the closer a political institution changing event in a country, the less time for other institutions, like the journalistic one, to (re)structure, as compared with institutions in different geopolitical area. Further studies done on media systems that belong to a different model (Liberal, Democratic/Corporatist) might confirm this hypothesis.

All reports showed that the digitalization process depends on the regulation/deregulation level of media industry, on the development of the media market, and on the level of the structuration of that industry or of parts of the industry (public vs. private, national vs. regional).

Conclusion

The four countries analyses in this paper have enjoyed a recent political stability, of three and two decades, respectively (Spain and Portugal, and Romania), or are three decades apart from a major political event (Cyprus). These two or three decades were period of institutional construction at all levels, from political parties to mass-media. The type of institutional evolution tended to generate similar approached to innovation acceptance and adoption, with a small delay in Romania. As all countries see their future in the European Union and all social actors, from politicians to journalists, are convergent in this view, the EU vision of an digital Europe was not contested and the regulative pressures were accepted.

Nevertheless, other factors generate different national reactions in the face of the new technologies. The more structured industries, the Spanish and the Portuguese ones, faced stronger reactions from the journalists' unions at the introduction of the new

technologies. The same happened in public institutions, where employees feel more protected against management's repercussions and tend to oppose digitalization more.

A second important factor is the size of the market. The institutional change brought by the new technology has as legitimacy basis one efficiency related argument. Small markets like the national Cypriot one or like the local ones, in the rest of the countries, do not supply enough revenues that may fund switchovers from analog into digital. On the other hand, large revenues from large markets reduce the risks identified by management, in front of innovations, and competition encourages the adoption on innovations by ambitious market players.

International factors, as associations and suppliers (that act at normative level) are also encouraging technology adoption.

And finally, age of the workforce is a clear factor. Cultural-cognitive definitions that may hinder the adoption of innovations are changed with generations. The elderly, that can not see themselves fitting in the new structures and learning the new abilities are changed, naturally, by the young.

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