Technological development of online media in Latin America. The case studies of emol.com, clarin.com, prensalibre.com. and jornada.unam.mx

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Abstract

The development of the information society, globalisation and technology has generated a process of adaptation in news companies. The technological evolution has produced notable changes in the production, distribution and reception of information. Not all media companies and countries have faced this reality in the same way. Many have been conditioned by the economic and political issues that determine this process. In the case of Latin America, there are differences that respond to the development level of the different countries and regions, and this highlights the existence of a digital divide. Based on four case studies, this article addresses the technological evolution experienced by four online news media companies from different Latin American countries: jornada.unam.mx (from Mexico), prensalibre.com (from Guatemala), emol.com (from Chile) and clarin.com (from Argentina). The objective of the study is to measure the impact of technology in journalism throughout Latin America in order to detect the structural differences. The study is based on the answers of the directors of the aforementioned online news media companies to a qualitative, descriptive and exploratory interview. The interviews took place between March and June 2011. The analysis of the results shows that there has been a remarkable progress and adaptation to the needs of the Latin American Society in recent years, but that there are also differences in terms of development levels according to the economic situation of the different countries, which conditions these companies' forecasts for their technological investment and innovation in the near future.

1. **Introduction**

Technology has been present in the history of the media since the birth of the press and is considered by some authors as a key pillar of journalism (Chisholm, 2010: 4). However, there are also those who believe that without the advances that have occurred over the years in this field, the media would have not explored new possibilities and functions. The link between the media and the telecommunications sector has led to a processes of convergence (Winseck, 1998); and the momentum behind the information society has led the ICT sector to devise numerous solutions for the development of the journalism industry. As Likes (2010: 187) rightly points out, faced with the changing technology, "content" is still the core of the journalistic exercise. But, undoubtedly, the production, distribution and reception of this content will be conditioned by technology.

The study of the technological development of the online media around the world, which has motivated this specific work on Latin America, indicates that the impact of technology in the media varies across continents and countries1. The digital divide, "a byproduct of the existing socioeconomic gaps" (Katz, 2003), predominates and affects certain sectors that harm the development of the media. This is the case in Latin America, a "complex and diverse" reality, where the economic, political and cultural factors clearly determine "dual realities" (Díaz Nosty, 2007). According to Jones (2000), three key players defined the media system in Latin America at the beginning of the 21st century: "the oligarchy, the penetration of American and European capital and the protagonism of the churches". There are other players that are tangentially derived from this situation: the privatisation of the telecommunications and media sectors, the freedom of expression, and the technological development. All these factors determine the current situation, strengths, weaknesses, and growth prospects of the Latin American media.

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[1] This article includes part of the unpublished results of a wider research project that examined twelve online media companies from around the world. These pages present the first results of this study about the sample of Latin American online media.

2. Technology and Latin America

For Jones (2000), to make generalisations about Latin America would constitute an arbitrary act in an "unbalanced" area. The structural differences of this area can be easily verified with an analysis of the countries' GDP and population (Figure 1), which indicate the degree of development, especially when contrasted. According to Heuser, internet access in Latin America is "deeply elitist" because it is possessed mostly by the middle and upper classes (Franco, 2009).

Figure 1. GDP and population

Country	GDP (million dollars)	Population
• Brazil	• 2,172,058	• 192,376,496
• Mexico	• 1,567,470	• 112,322,757
• Spain	• 1,368,642	• 47,150,800
• Argentina	• 642,402	• 40,117,096
• Chile	• 257,884	• 17,248,450
• Guatemala	• 69,958	• 14,713,763

Source: IMF, Latinobarómetro and UNESCO. *Spain was added as a country of reference

The development of a country is also reflected in its technological evolution. Although important technological advances have been made in recent years in the Latin American community, its technological evolution level is still lower than that of many other regions, as the World Economic Forum's *Global Information Technology Report* (2011: 25) has highlighted. In order to find a Latin American country in the *ICT Development Index* (IDI), produced by the International Telecommunications Union (ITU), we must go down to the 54th position, which is occupied by Uruguay. This country has experienced rapid growth since 2008, due to an expansion of the telecommunications market and the high penetration of mobile telephony, which has increased by 105% in the last two years (ITU, 2011: 32). Next to Uruguay are other countries from South

America: Chile, Argentina and Brazil, which occupy the 55th, 56th and 64th positions, respectively. Mexico is located in the middle of this development index, at the 75th position. Central American countries like Bolivia, Guatemala and Nicaragua occupy some of the last positions in the ICT: 107, 108 and 114, respectively (ITU, 2011: 47-48).

Other geographical differences are detailed in the *InternetWorldStats* (2011). In the Americas, the USA represents 50% of internet users, South America 33.4%, Central America only 8.8%, and the Caribbean just 2.1%. Similar results were offered a year earlier by the *Latinobarómetro* report (2010). In Latin America, 59% of the population has never had internet access. From the Latin American countries, Chile had the highest percentage of population with internet access, 58%, followed by Argentina and Venezuela, with 54% and 52%, respectively. The countries with the lowest percentage of population with internet access were from Central America: Nicaragua and Honduras, where 71% and 70% of the population, respectively, have never had internet access (*Latinobarómetro Corporation*, 2010).

However, there has been an exponential growth in recent years in some countries, such as Mexico, where the number of users increased five times from 2000 to 2009, going from 5 million to 25 million (Franco, 2009). The ITU report (2011: 32) specifies that Uruguay, within its potential for technological growth, has increased its internet use in the last ten years, and now 40% of its population uses the internet. The difference between the centre and south of Latin America is also reflected on the internet consumption data. While over 50% of the population in Argentina and Chile (66% and 54.8%, respectively) are internet users, only 30.7% of the population in Mexico use the internet. The percentage of internet users descends to just 16.5% in Guatemala and 10.6% in Nicaragua (*InternetWorldStats*, 2011). According to the *World Economic Forum* (2011:27), these countries share a number of problematic features that delay their ICT development: "inefficient policies and the poor education and research systems, which hinder the access to these tools by the largest part of the population".

These figures and values allow us to understand, in general terms, the extent and intensity of the digital divide between these countries. As Crovi, Toussaint and Tovar

(2006) have pointed out, there are five actors that determine this factor: technology, economy, computer knowledge, users' cultural capital, and policies. The reality appears more complex as more elements come into play, particularly if there are no social, political or economic reasons that motivate the technological development of the media (Navarro, 2003). However, the 2011 Latinobarómetro (Latinobarómetro *Corporation*, 2011: 69) stressed that the differences between countries with internet access can be decreased through the use mobile telephony with internet access, which acts as a "democratising" element. Smartphones have become a valid point of internet access. The latest report by *comScore* (2011b) ranked Chile (78.8%) and Argentina (77%) as the Latin American countries with the highest level of internet traffic via smartphones; and Brazil (39.9%) as the country with the highest use of tablets. A study by the Microsoft Corporation points out that these changes depend on the pressure of young people, and that in some Latin American countries are showing similar trends to those in the USA and Europe, where an increasing number of people uses computers more than television (Clasesdeperiodismo.com, 2012).

ICT facilitates the acquisition of "knowledge" (Khohling, Tuftel, & Vega, 2011). To deny the access to knowledge to a part of the population is to deny them a part of the existing knowledge. The transmission and reception of information in households can generate a wave of knowledge in society. As a consequence, and particularly in areas of inequality, it is unquestionable that the media are opinion shapers and institutions responsible "for the consolidation of the democratic system" in Latin America (Marques de Melo, 2009), where the lack of political stability has conditioned the information policies (Lavieri, 1996).

Since the late 1990s, the vortex of globalization arrived to Latin America. McLuhan's global village, Nora-Minc's computerised society, and the digital society (Armañanzas, et al., 1996) became a reality in Latin American society. But these changes were accompanied by the privatisation of the telecommunications sector (Martin, 1999), which led, according to McChesney (2005), to the creation of a "radically bourgeois" media system that does not have any respect for "any tradition or custom that gets in the way of its profit-driven activities". According to Koberstei (1999), another problem, as

in the case of Guatemala, is that most media companies are concentrated in the capital cities while some regions do not have access to information. In this discussion about the global and the local contexts, digital journalism occupies a prominent place (Crovi Druetta, Toussaint, & Tovar, 2006).

However, as a direct consequence of this situation, there is a "monothematism" (Martínez Gómez & Lubetkin, 2010) that calls into question the development of the public service that the media should offer in this context (Rockwell & Janus, 2001). Market concentration in Latin America has also led to the analysis of the lack of plurality and the impossibility of exercising investigative journalism, which is clearly the responsibility of these companies (Faundes, 2001). ICT is essential for the social and economic progress of Latin America. According to Villalta (2009), a country that does not promote ICT development will slow down "its economy" and "will suffer a major social impact in the short and medium terms". We are currently living in a time where "technological development, politics, and journalism are intertwined more than ever in this region" (Lugo & Cañizález, 2010).

However, in spite of all these obstacles, in recent years various Latin American media companies have evolved to respond to the progress and needs of the audience.

It is important to remark that there already existed a spark of technological interest in Latin American media companies which allowed the development of historical innovations. Abreu (2003) points out that before *The New York Times* launched its online edition, Latin American newspapers like *Hoy* (Ecuador), *El Tiempo* (Bogotá), and *Caretas* magazine (Peru) had already launched their electronic editions. On the other hand, since the late 1990s a technological development occurred in some media companies. In Argentina, online newspapers like *La Nacion* and *clarin.com* evolved by offering the largest number of links in their news stories, video images, and connections with radio stations (Echeverría, 1999). Access to new tools, such as blogs, offered journalists the first opportunity to have a more direct contact with the audience (Palomo, 2008). A pioneering journalistic experience has already occurred in Latin America, the organisation of the first online debate through the Brazilian websites Uol and Folha (Colussi Ribeiro, 2011).

Technological changes affect the various phases of journalism. In production, technology should be considered an ally. The constant updating of the available tools should motivate journalists to have an "inherent desire to stay up to date in this regard", since this determines the "quality of content" and their ability to create "new technology-based structures and formats to present journalistic genres" (Rendón, 2007).

As Vidal affirms (in Franco, 2009:17), technology has not allowed the diversification of sources or content, but has allowed their distribution. As a result, there is an advantage in the areas of dissemination and reach. For example, in some Latina American countries, as in other European countries and the USA, there are more readers of online newspapers than buyers of print newspapers (Crovi Druetta, Toussaint, & Tovar, 2006). Moreover, the online newspapers that have the largest number of readers are also the best-selling print newspapers. This is the case in Brazil (*O Globo*[2] and *Folha* from San Paulo[3]), Argentina (*La Nación*[4] and *Clarín*[5]), and Mexico (*El Universal*[6] and *Reforma*[7]) (Lugo & Cañizález, 2010). Moreover, the expansion of internet access could help increasing "reading levels" in those regions, like Central America, where traditional newspapers usually do not circulate (Chamorro, 2002).

Crovi, Toussaint and Tovar (2006) have demonstrated that there was a dominant trend, in general, of dependency on the print newspapers. In 2007, Barrios considered that technology was fully integrated into the production processes, but that its potential to generate greater audience and participation levels was "limited" (Barrios, 2007). Tejedor (2010a) highlights that the Web 2.0 is currently in its "initial" stage and shows some notable differences across national online media industries. For example, the economic democratisation and liberalisation, as in the case of Mexico, had already boosted the development of citizen journalism (Hughes, 2003) in early 2000. However, once again, technological advances have led to the emergence of a new reality. The media have been aware of the rise of the social networks. The latest study from

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[2] oglobo.oglobo.com
[3] Folha.uol.com.br
[4] LaNacion.com.ar
[5] www.Clarín.com
[6] www.eluniversal.com
[7] www.Reforma.com

comScore (2011a) confirms that users of social networks in Latin America have increased by 88% in the past year, with a dominance of Facebook but also with differences across countries. Specific applications have also been developed for mobile carriers, although in this case Latin America also has limitations: the high "cost of service and handsets" (Knight Centre, 2009). However, faced with all these incremental advances, authors like Mastrini (2011: 5) stress the need to prevent these developments from affecting the democratisation of information in the printed press, radio, television, and internet, because otherwise we would only advance in "the commercial model of communication".

3. Method

At the start of the study two points were detected: 1) there was a lack of regional and statistical studies (Chamorro, 2002) and 2) there were certain thematic lines that are highly developed. In general terms, there is a predominance of studies focused on: the influence and intervention of the government in the exercise of the freedom of the press and expression (Chamorro, 2002) (Lavieri, 1996); the influence of policies (Khohling, Tuftel, & Vega, 2011) (Koberstei, 1999); the imperialism exercised in policies (McChesney, 2005), culture and the media (Fox, 1998), the technological development (Martín, 1999), and the commercial sector (Hughes, 2003; Lozano, 2007), where the analyses of Rockwell (2003) and Janus (2001) still prevail.

There was another block of previous publications and research focused on the general analysis of the impact of the information society (Katz, 2003) and technology (Jones, 2000; Lax, 2009). There were also studies on the impact of the Internet and journalism in Latin America (Abreu, 2003; Barrios, 2007; Colussi Ribeiro, 2011), with a greater number of publications dedicated to Mexico (Crovi Druetta, Toussaint & Tovar, 2006; Navarro, 2003; Rendón, 2007; López, 2009; Rodríguez & Martínez, 2010). Part of the strength of the analysis of Mexico's reality is that in this country, as well as in Brazil, the national policies on technology have driven the research in this area (Fox, 1998). In addition there are publications related to specific aspects of the development of the

digital media, like the Web 2.0 (Tejedor, 2010b), the social networks (Torres García et al., 2011), and the participation of audiences (Torres García, 2010). The quantitative work of Said-Hung (2011) stands out due to the creation of an indicator to measure the development of the online media. Other authors have also proposed measuring tools, like the analysis model of Rodríguez-Martínez et al. (2010), the five levels of quality devised by Gómez (2005), the dynamism test of López García et al. (2005: 39-82), and the adaptation level in the design of online media devised by Bernal (2011: 33-34).

The main objective of this research is to study the technological evolution in certain Latin American media companies, to gain a better understanding of the new ubiquitous and multiplatform transmission-reception paradigm. The specific objectives of this research are:

1. To identify the production standards in the selected sample of online media.
2. To detail the technological evolution of the distribution systems of the sample of online media companies.
3. Identify the tools, platforms and business models used in information reception stage.
4. To evaluate the implementation of technology in the sample of media and its impact on the development of the journalistic company.

Due to the scarcity of research on the technological evolution of the online media from their point of view, this article offers a qualitative and exploratory research work that will contribute to the understanding of the "trends, areas, environments and contexts" of development (Hernández et al., 2006: 117). As Tena (2006) indicates, this is not "market research". Exploratory research does not aim to obtain enough data to make generalisations (Igartua, 2004: 93)[8], but to acquire a greater understanding of an under-developed subject matter. The descriptive work allows "describing" the technological

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[8] Igartua follows Leik's preference for internal validity because "it is more desirable to know something even if you cannot make generalisations, than to make generalisations about something that is not known with certainty".

evolution and making "predictions, even if they are not fully elaborated" (Hernández et al., 2006: 120).

The selected method is case studies. In view of the current economic crisis, it is more necessary than ever to redefine information and business strategies to provide appropriate solutions in this media system, which has an increasing number of platforms and a greater diversification of revenue streams. Consequently, the analysing of cases of success and survival in the current media companies can help us to define future trends (Bernal & Cabrera, 2011: 2). Therefore, these are specific analyses with no statistical or representative values for the Latin American media in general. The results are based on the selected sample and need further confirmatory studies that, through a larger sample, can complement this first approximation. In this exploratory approach, we used a non-probabilistic sample and case studies. To this end, we contacted directives from each of the selected media companies. The online news media companies selected had to meet the following criteria:

a) Geographic location: in order to represent the different geographical areas and detect differences of technological evolution related to the development indexes marked by the geographical location, we selected two online news media companies from the north-central zone and two from the southern part of Latin America.
b) They had to be of national scope, present general information, and to have the highest levels of audience, according to Alexa.
c) They had to offer unrestricted and free access[9].

Three of the selected online news media companies are ranked as the most visited news websites by Alexa in their respective countries, with the exception of *La Jornada* (Mexico), which occupies the third place in its country. *El Universal* and *Reforma* are ranked by Alexa as the first and second most visited general information online newspapers in Mexico, but their directors rejected the invitation to participate in the

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[9] This distinction responds to the fact that the online edition of *El Mercurio* is restricted, while emol.com is freely accessible.

study. Thus, we selected *La Jornada* because the geographic location was more important for the study, in order to detect the geographical differences.

The study is structured in four sections:

Production: This section focuses on the analysis of new technologies applied to the pre-production, production and post-production of news. In their definition of convergence, both Quinn (2005: 29-30) and Huang (2004: 73) highlight the importance of creating journalistic content that can be distributed through various platforms, based on new routines and tools. This section addresses concepts such as the editorial areas, journalist's current technological skills and attitudes towards the acquisition of new technological skills, the process of press coverage, the participation of audiences, and the publication of news from mobile devices.

Distribution: This section examines the media, the channels and the formats applied in this process. Internet is not only a medium, "it is a distribution system" (Chisholm, 2010: 4). In this field, the impact of technology has led to the multiplatform distribution, which is the objective sought by the application of all these changes occurring in the communications industry, as Fidler (1997) and Pavlik (1998) have emphasised. This section analyses issues such as the role of the online media in comparison in comparison to the printed press, the development of the multiplatform distribution, the standardisation of formats, and the role of social networks as new channels for the dissemination of informative, journalistic and entertainment contents.

Reception: This section analyses the channels used by audiences for the reception of information, as well as the active role of the audiences as producers of new distribution channels. It includes a subsection on the new reception platforms. For Goggin (2010), these devices are as important as the technological advances they bring and their developments in content and applications. This section also addresses such aspects as the communication with audiences, the current business models and trends, the customisation or personalisation of content, the possibilities of new platforms and the importance of design.

Technology: This section focuses on the importance that journalistic companies grant to the technological evolution in their development, as well as the work tools they have developed, and the lines of work oriented to the current and future technological adaptations. For Busswood (2010: 3), innovations should be viewed as complementary formulas that provide opportunities for "growth and expansion" to the industry.

The study has had four methodological stages. The first stage is the state of the art review of Latin America's journalistic reality, in terms of the factors that can promote their development and determine the idiosyncrasies of this reality. This part has been described in the preceding chapter and sections.

The second phase involved the field study and the sample selection.

The *Clarín* newspaper was established in 1947 (Consuegra, 2004) and is regarded as the "prototype" of online journalism in Latin America (Abreu, 2003). It is the largest Argentinean media conglomerate (Martini & Luchessi, 2004). Clarin.com was born in 1996 and since 2008 the editorial offices of the print and online editions were merged (Grupo Clarín).

Prensa Libre was created in 1951 to become Guatemala's first newspaper (Consuegra, 2004). *Prensa Libre* is one of the newspapers of Central America with more than 50 years of existence. In addition, it dominates the country's market with *Nuestro Diario*, the most-sold popular newspaper in the nation (Chamorro, 2002).

La Jornada was founded in 1984 (Consuegra, 2004) in Mexico. Since its inception it was characterised by its excellent photography and its "alternative position to the official discourse" (Saramago, 2004). Its online edition was launched in 1995 (Wikipedia, 2011).

Mercurio was founded in 1827 in Valparaiso, Chile (Consuegra, 2004). Its online edition is called *El Mercurio On Line* and it is known by its acronym EMOL. The online edition was launched to compete with the websites of *Terra* and *La Tercera* (Wikipedia, EMOL, 2011).

The third stage consisted of empirical research, which was based on a purpose-created electronic questionnaire that included qualitative and quantitative questions seeking to obtain the most complete and relevant data to meet the research objectives. The questionnaire and the objectives of each question are synthesised in the following table.

Table1. Questions and objectives

QUESTIONS	OBJECTIVES
PRODUCTION	
1. How is the digital editorial department organised?	To identify areas, professional profiles, tasks, products…
2. What technological skills are required from journalists applying for a position in the digital editorial department?	To assess whether the interest in technology training is increasing.
3. Describe the organisation of the daily news coverage in your company	To determine the degree of technological dependence that exists in each phase, and to determine whether the Internet is the backbone of the news production cycle.
4. Is audience participation positively or negatively perceived?	To confirm the impact of the audiences as content producers within the medium's dynamics.
5. What tools are employed by journalists to write or edit pieces of information?	To identify the specific technological applications that have been incorporated into the production routines
6. Would you like to produce and edit news stories completely from mobile devices (like smartphones and tablets)?	To assess the impact of the smartphones and tablets as editing support tools.
DISTRIBUTION	
1. Is there a policy in your company about publishing news first on the online or printed editions?	To determine whether the online media is autonomous or dependent of the policies of its paper counterpart, and whether a different content policy is established for each of the company's platforms.

2. Which channels or platforms are used by your company to offer or disseminate its contents?	To evaluate the developments made in the multi-platform distribution system.
3. Which formats are used by your company to distribute media contents? (SMS, jpg, avi, gif, html, xls, etc.)	To determine whether a unification of formats exists.
4. Does your company consider the social networks as a new efficient way to distribute its information through audiences?	To determine whether the social networks also act as a new channel in the distribution of information.
RECEPTION	
1. What technological possibilities does your company use with the audience?	To determine what basic technological services are offered (printing, sharing, networks, etc.)
2. On which business model of e-commerce of digital content and information goods is your company based? What model do you believe will prevail in the future?	To identify the business innovations and developments made by the online news media companies.
3. Do you believe that the customisation of content is an ever increasing trend?	To determine whether content customisation is an increasing trend and whether media companies are interested in developing it in the future.
4. Currently, there is a diversity of platforms (paper, computer, mobile phone, tablets, etc.). What do you think will happen in the future?	To determine which are the advantages or disadvantages, strengths or weaknesses of these devices?
5. Do you think news design should be changed in tablets and mobile phones?	To assess whether specific applications should be developed and what graphic design is more effective.
TECHNOLOGY	
1. How important is technological innovation in your company?	To determine whether technological innovation is considered as a primary or secondary area of development in the company.
2. Which are the main lines of R&D work in	To identify the most predominant types of

your company?	R&D projects.
3. What tools have been developed by the technical department of your company?	To identified the technological developments that have been implemented.
4. Which technologies should be improved to enhance the production, distribution and reception of journalistic information?	To identify the technologies in need of improvement.
5. In y our opinion, which will be the technological needs of the media in the next five years?	To identify the future trends in journalistic technology.

Source: Authors' own creation.

The editors/directors of the selected online news media companies were contacted in January and February, 2011. Their answers were collected between March and June, 2011, and the analysis of the results was carried out between July and August of the same year. The answers were encoded according to topics, then classified according to keywords, and finally classified in subcategories related to each area of analysis. An identification code was assigned to the responses of the directives of the four media companies: clarin.com: CL; emol.com: EM; jornada.unam.mx: JR; prensalibre.com: PL.

4. Findings

The journalistic production in these online media reveals that the organisation of the staff has been adapted to the needs and demands of the Internet. On the one hand, separate sections have been created in such a way that the digital edition has generated its specific areas of information. The sections of clarin.com (Images, Sports and Entertainment) and emol.com (News, Economy, Sports, Tendencies, and Woman) show that the volume of information has imposed a new organisational need among the staff.

"There is a single table for the interaction between the editors-in-chief, the cover artist, the writers, the graphics editor, and the social networks manager. The only exceptions are the sports section team, which works separately and is next to the

sports section of the printed newspaper, and the entertainment section team, which only has two or three members located a few meters away from the online edition working table. Sports and Entertainment develop two sub-websites, whose headlines are offered on the homepage. There are also two special cases: the economy supplement, called *i-eco*, which has some autonomy but offers its m ain news in our homepage, and the culture section, which is called "Ñ" and also works independently with the difficulties that this implies." (CL)

On the other hand, some professional positions specific to the digital newsrooms have been reinforced. The four companies under analysis have multimedia editors, and clarin.com also has a community manager.

An important feature is the production autonomy of the editorial team in relation to the main medium: the print newspaper. In the case of clarín.com and emol.com, their editorial newsrooms are independent and autonomous. This separation causes different work routines that are adapted to the demands and needs of their respective editorial newsrooms.

"In the early morning each channel makes a plan for that day's coverage, and this is shared with all the coordinators, who manage the main cover and the channels' sub-covers. There are weekly meetings to coordinate special projects and weekend's thematic coverage, when we offer special content." (MR)

Prensalibre.com does mention the participation of the digital newsroom team in the meetings of the printed newsroom team, to take advantage of the meetings.

"At 8.30 there is a planning meeting where the sections editors share their coverage of the day. Everybody participates including the digital newsroom staff. The coverage is defined jointly. At midday, there is another meeting in which the results of the coverage are shared. At 4:00 PM, there is a meeting to define the cover and quickly review the final approaches of the articles, the main headline, and the titles in the cover". (PL)

The same newspaper insists that, due to the continuous production cycles, there is a need to create various work schedules to give full coverage throughout the day. Another particular mention, in the case of clarin.com, is the use of specific work technologies which are different than those used in the printed edition, and the consolidation of the online multimedia journalist, whose integration does not occur in the printed edition:

> "If online editors go out they will have a mobile phone, to record and/or make calls, or a flip type camera. If a journalist from the traditional printed newsroom team goes out, the most likely is that he or she will only report by phone (and briefly), while the images (photos, videos) will be the responsibility of a photojournalist and a cameraman". (CL)

Technological training is not considered a crucial issue to develop the work of journalists by any of the four analysed media. However, they recognise that minimum skills should be required, and later they can be improved in the company with training courses, in the case of clarin.com and prensalibre.com. The latter online newspaper requires "basic multimedia knowledge", while emol.com values skills to use "Dreamweaver and Photoshop". In addition to this software, prensalibre.com also values skills to use Flash applications.

> "Their work is rather oriented to reporting and editing, although they must use such tools as Twitter. There is a group of designers who are in charge of creating content in PHP and Flash". (MR)

The participation of audiences, especially through social networks, is generally regarded as a positive factor by the four online media. However, there were differences of development due to the massive presence of users in these spaces. For emol.com, social networks are a controlled area which has also caused an increase in followers, between "about 40,000 and 50,000 on Facebook and Twitter, respectively". Emol.com is also the "main generator of tweets on the Web".

> "Since few months ago, we have strongly promoted the participation of the audience with the full incorporation of the major social networks in Chile: Facebook and Twitter. They are present in all the sections through the "Share"

and "Like" buttons, and the Facebook comment box in almost all the news items." (EM)

However, even if there is a specific figure in clarín.com for the management of audience's participation, they recognise that this should be managed "carefully" and that "the lack of staff prevents, for example, the moderation and publication of comments in many other news stories". In the case of prensalibre.com, they admit that, for the time being, the management of this participation trend is "beyond their abilities". Jornada.unam.mx point outs that participation is "fundamental" and that they try to assume the audience has "the best possible criteria". Therefore, they show interest in feeding from the information provided by users.

The most commonly used tools are the desktop and portable computers, especially those produced by Dell, as well as smartphones, especially Blackberry. Despite the presence of mobile telephony in news production and the editing applications included in smartphones, journalists say they prefer to do the editing work on their personal computers located in the newsroom. The representative from jornada.unam.mx considered that it is "less complicated" this way, but also recognises the benefits of this new method of production. For clarin.com, mobile devices are useful for "urgent" news, while at emol.com the journalists consider that "the more portable, the better", but also remark that "a final review is always needed in the traditional newsroom".

With regards to the types of contents published in the online and printed editions, there is not a fixed decision but a tendency to limit the publication of exclusive news stories to the printed edition, while the general information and the leaks (CL) have their natural place in the online edition. Alternatively, as prensalibre.com points out, situations are evaluated depending on the "context".

> "70% of the times we publish firstly on the website, but relevant, exclusive or collectively-created journalistic works are always published first on the print edition." (MR)

Emol.com has the only editorial newsroom that is considered independent from the decisions taken in its paper counterpart: *El Mercurio*.

The four media companies contemplate the possibility of news distribution in other platforms (Figure 2), especially on portable devices. However, only two of these online media companies, clarín.com and emol.com, have developed specific applications for iPad. In fact, clarin.com has created two apps, one for the main online newspaper and another for the "Ñ" supplement. In the case of prensalibre.com, it only offers the alternative transmission of news via SMS. The four online media embrace the use of social networks.

Figure 2. Multiplatform distribution

clarin.com	emol.com	prensalibre.com.gt	jornada.unam.mx
• Smartphone/tablet: iPhone, SMS, N95, Blackberry, Nokia, iPad (clarin.com + Ñ) • Clarin web TV • Social Networks: Facebook, Twitter.	• Smartphone/tablet: iPad, iPhone, Blackberry, Android, Windows Phone 7, Emol AR. • Internet Mercurio • Social Networks: Facebook, Twitter • LG browser	• SMS News, smartphone application. • Social Networks: Facebook, Twitter	• Mobile PDA edition • Smartphone/tablet: iPhone, iPod touch, iPad • Social Networks: Facebook, Twitter

Source: Authors' own creation.

Depending on the language in which they want to transmit their information, journalists must know the formats available to distribute the information, and their specific features. The study verified the unification of editing formats: JPG for images and AVI for videos. The analysed online media admitted that the social networks can help in the distribution of information, at least "incipiently", but also have real doubts about their "effectiveness" (CL). They point out that there are obstacles for this development, like the shortage of staff (JR), and the lack of an independent system to send content to the audience so that they can share it with other users. (PL)

In terms of reception, all the analysed media provide basic technological possibilities like the sharing or printing of news, and have incorporated the option of sharing through the social networks. It is precisely in this area where there has been more development. The four online media companies provide the option to share content in Facebook and Twitter, among many more networks. Clarin.com, for example, offers up 329 options to share in networks.

The dilemma of offering content for free or not generates different views. For clarin.com, emol.com, and jornada.unam.mx the business model for the near future is the free system, but there are some particularities. For emol.com, the decision is firm:

> "We have opted for the free model. I think both models have opportunities for the future, depending on the product. In our case, revenue has increased strongly in recent years, which generates profits and consolidates the business as such." (EM)

Clarin.com points out that its website will remain free, while mobile applications will be sold. Therefore, there is a diversification of business models according to the platform. Jornada.com.mx believes that "payment services will prevail". The only company that bets on the payment for content in the future is prensalibre.com.gt, as a way to "differentiate itself from the free online newspapers and the online aggregators". In this line of debate, the analysed media do not content consider customisation is a demand among their users, but for emol.com this would make more sense in the area of local news. In fact, for clarin.com content customisation is not an immediate need and the news media, as agenda setters, will continue to exercise that function.

> "There is still space for the large media companies to edit, rank, and evaluate all the themes aimed at the general public. However, the customisation of content can be simultaneous and simultaneity will be inevitable." (CL)

Prensalibre.com does not consider that content customisation is on the rise, but believes that the number of "more defined audiences" is always growing.

A new field in media studies is the analysis of mobile devices like smartphones and tablets, and their applications. The online media companies under study do not see the traditional computer-based online editing as an enemy, but as a complementary method. Therefore, they defend the coexistence of all these platforms, although with some peculiarities.

For clarin.com, tablets have the disadvantage of high cost, while computers and smartphones are better positioned. Emol.com clearly believes in business diversification through these devices. Jornada.unam.mx points out that these devices "increase the number of readers", but that they have a weakness in terms of design: "long texts loose effectiveness in them". Prensalibre.com considers that in the future audiences will consume more information through tablets and smartphones due to their "portability, mobility, customisation-ability, and multimedia interaction".

To develop this type of business is necessary to adapt the design of applications and web browsers to these new devices, for example, with "shorter texts and a higher prevalence of images" (CL), "with a design for each platform" (EM), and the adoption of "youth-oriented formats" (JR). Prensalibre.com specifies that design is not as important as the adaptation of content to the different devices; for example, "breaking news should go to mobile devices", and "multimedia content" to tablets. In other words, "a more personalised experience with content".

All these changes in the editorial newsrooms would not have been possible without a policy of technological development in the analysed companies. A relevant case is clarin.com, whose chief editor highlights their "effort to implement all the technological innovations that have been developed".

> "The influence of the technological innovation is growing. The company was taking note of this need. We tend to concentrate the technological advances in the newspaper's headquarters, but we are still outsourcing the control of the networks and part of the web design."

In this sense, the study detects a different perception depending on the geographical location of the news company. While countries from the south of Latin America

(Argentina and Chile) acknowledge an interest in the development of internal products and design improvements; countries from the north and centre admit that they only apply "programing and design" changes (JR).

> "Everything is developed internally. The servers are abroad. But we need to prioritise technological innovation more." (JR)

The lines of work defended by these news companies are related to "development and innovation" (EM, JR), anything that improves "audience reception" (PL), and "incorporates the emerging technological innovations" (CL). For the moment, these media have created specific tools such as CMS or iPad apps (EM), operation and design programs (JR), and applications (PL).

The study also reveals some weaknesses that should be solved with technology. In one case there were technical constraints, and poor internet connection in its country (PL). Another factor is that technology should not impose a certain way to make and consume media products. In other words, journalists and users should not have to adapt themselves to technological requirements. Instead technology should be adapted to the needs and requests of these sectors.

> "They should improve things by taking into account the needs of readers and journalists, and not only the technical issues of the still so-unknown internet world" (JR).

However, there is another decisive factor in this development: the attitude of the journalist towards the technological innovations.

> "The main difficulty is the lack of training of the staff, including staff from the online newsroom but especially staff from the traditional newsroom who cling to the print newspaper and almost always lack the will to learn new skills" (CL).

The media companies also proposed the idea of standardising the applications for portable devices in order for them to be able to be present "in all devices" (EM).

The technological needs in the coming years will continue to be conditioned by issues of development and the social implementation of technology. For example, for clarin.com it is necessary "to improve connectivity and incorporate new platforms", while for emol.com the challenge is "to develop flexible CMS that are adaptable to any platform". Prensalibre.com is unaware of the needs and jornada.unam.mx suggests that the improvements should be made "faster" in the multimedia environment.

5. Discussions

We agree with Díaz Nosty's (2007) assertion that the socio-economic difference and the geographical location determine the degree of technological development in the news media under analysis. Most newspapers have about ten years of existence, and have evolved in their design, format, and generation of content. The differences in internet access published by *Latinobarómetro* (2010), as well as other reports highlighting the increase in internet access in Mexico (2009) and the solid infrastructure in Chile (Waverman, 2011), are reflected in the technological policies followed by these online news media companies.

As Crovi, Toussaint and Tovar (2006) indicated, this study also detected that in the production process the online media companies under analysis still depend on their paper counterparts, although in clarin.com and, more markedly, in emol.com the independence is greater or total. The paper and electronic newspaper editors are separated, and adopt new working routines and other tools to cover information, as in the case of clarín.com.

The introduction of specific positions for the various sections of the digital newspapers, like the multimedia manager, the online cover artist, and the community manager, is also remarkable. Although it is not obligatory, the online media directives feel that the online journalist needs to have basic technological knowledge for the exercise of the profession, for example in video editing and photography. The opinion of the community of users has also been incorporated in the production of content. The community of users acts occasionally as a source of content through the social

networks, an increasingly necessary tool of consultation for the journalist. In the four cases, the use of the desktop PC is predominant and, except in specific issues, the use of mobile devices for the editing of the information is non-existent.

The unification of editing and distribution formats in the newsrooms of the four online news companies is clear. Like Chisholm (2010), these companies see the Internet as a distribution channel that so far has not had great effects. They seem aware that the treatment of digital information can be improved in other multimedia channels, particularly in the new mobile media devices like smartphones and tablets (iPad). However, except in the case of prensalibre.com, which may be conditioned by the shortage of these media devices and the small percentage of the population that can afford to buy them and use them (51% of the population is indigenous), as the Knight Centre's 2009 report indicated, the study detected a greater development of these opportunities in Chile, Argentina and Mexico, which makes us think again that these countries have a greater technological development and implementation, as Waverman (2011) had already pointed out.

The internet is still the preferred platform to publish general or urgent news, while the publication of exclusive news is exclusively for the printed press. Therefore, and for the moment, added-value content is only provided to the printed press and not to the web. Emol.com is the only medium that does not face this situation, due to its clear independence from its printed counterpart: *Mercurio*. The social networks deserve a special mention, as their massive use (*comScore*, 2011) in Latin America has led the four online media to bet strongly on them.

As for the reception, the study detected, first and foremost, a growing interest in the new mobile media, which are limited by the new business model of paid-for applications; while the web remains open and free of charge to the public. Therefore, in the new portable media devices, the online press has found a diversification of the business and an alternative stream for revenue. With regards to the development of specific applications for the new platforms (smartphones and tablets) there are four pillars that must be taken into consideration: the device's operating system, the target audience, the creation of specific designs, and the adaptation of content to the specificities of each

media device. In all cases, mobile media devices offer other basic technological services in addition to news services, like printing, sharing, and emailing.

In terms of technological evolution, the study detected a greater level in emol.com and clarín.com, which have a stronger technological plan, while prensalibre.com has technical limitations that impede its development. The creation and improvement of the CMS and the development of applications for mobile media devices are the future lines of action for the four companies. According to Rendón (2007), clarin.com and emol.com stress that journalists need to develop an interest in technological developments so that they do not become an obstacle in the development of the medium.

6. Conclusions

The study identified standards in the four online news media organisations. All the companies have specific professional positions in their editorial newsrooms. There is a predominant use of desktop and portable computers and mobile phones as working tools. There is a need for technological training in photography and video editing programs, mainly to improve the multimedia content. Regarding the impact of technology, there is a need to restructure the digital newsrooms and to adapt them to the updating routine of the Internet. In terms of distribution, there is a standardisation of formats and the use of social networks to distribute information. In terms of dissemination, there is a need to use alternative channels and a multiplatform distribution system.

In fact, the massive use of social networks in Latin America has motivated the four analysed companies, regardless of the economic development of their countries, to strongly bet on their implementation. The interactive tools and the interest in mobile platforms are the two main technological axes in the reception area. The solution applied in this sector is the generation of specific applications and the relocation of the niche markets to where the audience is located. With regards to technology, there is a common commitment to development. There is unequal investment that in this case is

linked to the structural differences across Latin American countries. Similarly, technological innovations produce a need for adaptation that still has to be overcome by journalists.

There are some trends that are summarised in the use of the synergies in the restructuring of the newsrooms with staff specialised in specific areas in order to enhance the value of the online press. The trend towards business concentration makes us think about the importance of enhancing the multiplatform distribution system. In the case of Latin American countries, the lack of internet access in certain areas reduces the thematic variety of media contents, even more so in the numerous rural areas that have no access to traditional newspapers and only receive information from the audiovisual media (particularly radio). Mobile applications and their revenue streams are the new lines of development in the area of reception. In the field of technology, the trend is to continue incorporating innovations, which is supported by the editors and journalists on the payroll. It can be predicted, once again, that each country's socioeconomic structure acts as a boost or obstacle to the development of the online news media in Latin America, which complicates the implementation of innovations, and opens two different trajectories: innovation in the case of Chile and Argentina; and development in Guatemala and Mexico.

In conclusion, since the launch of the analysed online news media, the political and economic evolution in some parts of Latin America has allowed the development and consolidation of the digital press, although there are clear differences in growth. Precisely, the different levels of technological development detected in this research, as a result of the different socioeconomic policies and developments across countries, suggest the need to undertake further studies to examine the reality of the online press based on a larger sample of online news media companies from a larger number of Latin America countries. Therefore, this research aims to serve as the basis for subsequent studies that, with other methods (e.g. ethnography), aim to deepen into the journalistic routines of these online media and their daily realities. Finally, this study can serve as a starting point for studies involving a larger sample of online news media

companies and regions, which can allow the identification of more subtle differences depending on the geographical and socioeconomic diversity.

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