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Submitted

November 3, 2017

Approved

February 28, 2018

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Communication & Society

ISSN 0214-0039

E ISSN 2386-7876

doi: 10.15581/003.31.2.51-70

www.communication-society.com

2018 – Vol. 31(2)

pp. 51-70

How to cite this article:

Marcos Recio, J. C.; Edo Bolós, C. & Parra Valcarce, D. (2018).

Remaining challenges for digital newspapers regarding informative updates: case studies in the Spanish media. *Communication & Society* 31(2), 51-70.

This article is part of the work carried out in the framework of the research project "Keys to the redefinition and survival of journalism and challenges in the post-PC era. Emerging media, new narratives, aggregators, robots, multiscreen, first mobile, apps" (Ref CSO2016-79782-R). This project is funded by the Ministry of Economy, Industry, and Competitiveness (MINECO) of the Government of Spain through the National R + D + i Plan within the State Program of Research, Development and Innovation Oriented to the Challenges of Society.

Remaining challenges for digital newspapers regarding informative updates: case studies in the Spanish media

Abstract

More than two decades after printed newspapers began to be threatened by digital formats, it seems appropriate to study the current situation both in terms of the production and updating of content and the way in which they attract and retain readers who predominantly prefer social networks. This process not only affects the media since everything is becoming digital: books, appliances, shopping and, above all, lifestyle. And adapting to new environments is becoming more difficult than in other industrial revolutions. The objective of this paper is to analyse some of the causes that have brought newspapers to this situation that negatively affects not only editors but everyone working in the media, and that study suppose to the calculation of the number of most active updates, hours, week and the sections within the digital newspapers. In addition to the technological challenges, this article shall also assess the reading environment, the difficulty that newspapers have, digital formats included, in attracting the attention of readers, who have their own perception of the media.

Keywords

Digital newspapers, social networks, information, readers, content update.

1. Introduction

More than two decades after printed newspapers began to be threatened by digital formats, it seems appropriate to study the current situation both in terms of the production and updating of content and the way in which they attract and retain readers who predominantly prefer social networks. The objective of this paper is to analyse some of the causes that have brought newspapers to this situation that negatively affects not only editors but everyone working in the media. The causes that have led to this situation for print newspapers need to be identified.

This process not only affects the media since everything is becoming digital: books, appliances, shopping and, above all, lifestyle. Adapting to new environments is becoming more difficult than in other

industrial revolutions. The deadline for adopting new technological formats is a challenge for most human beings because if the cinema took a century to reach millions of viewers, social networks are changing the panorama every five years. What is worse, there is no ceiling for those who are positioned at the top like Facebook and Google and others with new roles who are emerging. It is an increasingly difficult adaptation that is not for younger generations, who move and navigate from one network to another with ease.

In addition to the technological challenges, this article shall also assess the reading environment, the difficulty that newspapers have, digital formats included, in attracting the attention of readers, who have their own perception of the media. They are faithful to and always aware of the social networks with which they identify, although not so much with the digital newspapers. They consult these infrequently and only when they no longer trust their friends and want to check information. In order to understand the real attitude of readers, a study of six Spanish media channels has been undertaken in order to ascertain the hours, the days of the week and the sections that most updated their information, given that the product can only compete with social networks if it is updated. The results obtained through research are not very favourable to digital newspapers, which will have to improve their workforce and contents if they want to attract more readers.

2. Faster access to information: technological challenges

The current situation of the media, especially digital media, is the result of the mistakes made during experimentation that began in the second half of the 1990s with the emergence of the first cybermedia. Afterwards, different stages and ideas have been produced, all of them with the aim of making a daily product competitive and the newspaper the benchmark that until then it had been.

The current thrust of technology has forced publishers to seek alternatives in order to improve the information product they presented as a digital environment or support. In just a quarter of a century, all newspaper departments radically changed their wording, design, production and distribution. In the first case, the editorial offices oversaw the printed product and later what was published online. Then the tendency was a separation so that the information was different, since the readers were also different. The result was not as expected. The newsrooms were once again integrated and today they function as a block in which the contents can be adapted to both formats, although not in all media. It is important to take this aspect into account, since when information, its contents and how they are updated is analysed, the most important factor is the editing. On the subject of integrated newsrooms, there is abundant scientific literature from different authors such as Salaverría and Negrodo (2008); Masip (2011); Lafuente (2012) and Correa and García (2013). On cyberjournalism and its relationship with the media, the contributions of Professor Díaz-Noci must be especially highlighted (2008 and 2010). In this context, Gumersindo Lafuente published in the Madrid Press Association (APM) an interesting study on three media (elmundo.es, Soitu.es and elpais.com), in which he made a tour of the organizational model of the newsrooms. He concluded that, in this final phase of experimentation by newspapers, integration was the usual way of working for the majority of journalists. That is, a single integrated wording for two products: printed and digital. But that integration has not only occurred in the editing process: also, the documentation centres were forced to be closer to the newsroom to offer agile and immediate responses about the news, to such an extent that in some newspapers they are physically located in the centre of the newsroom in order to offer this documentary support, as some authors point out:

The challenge, not the problem, is the way in which documentalists approach the creation of information. Until now, they were an informative complement, providing texts and/or images,

but in the context of digital information, they must be a filter to search for what journalists require (Marcos & Sánchez, 2011).

Design and production are also necessary tasks for improving the digital newspaper. Design, for making information more attractive. Editors realized that content, as well as being interesting, must grab the attention of the reader/consumer. This change can be verified directly by consulting the covers of the first digital newspapers of the second half of the 1990s and those that are published today. With regard to production, newspapers are trying to reduce the medium's upload time. Users do not wait for the download to finish if it takes more than a few seconds. Readers' patience is very limited. The most important example in this case would be *The Washington Post* since the arrival of Jeff Bezos, as he has successfully applied some editorial innovations. The *Post* was therefore the first major newspaper to adopt HTTPS as a method ensuring security and speed. After the *Post*, other media immediately applied this system, including: WIRED, *BuzzFeed* and *The Texas Tribune*.

The senior product manager at *The Washington Post* referred to this issue:

In 2013, the upload speed of the *Post's* page was about eight seconds. As of July 2015, that time was reduced to 1.7 seconds, an improvement of 85 percent achieved by getting rid of bulky features that took too long to download. With the Progressive Web Application, article pages are accessed in 80 milliseconds (Mullin, 2016).

One of the problems that digital newspapers had to face was the speed of downloading their contents, especially images and video. Many media outlets decided to deal with this situation by adapting a Google program that accelerated download, reducing waiting time for readers. The Accelerated Mobile Page (AMP) project <https://www.ampproject.org/> is an open source initiative that seeks to improve the web for everyone. The proposal offers publishers a change to speed up the download. Some media, such as *The Washington Post*, have already established it in their newsrooms. It allows the high-speed creation of websites and ads, attractive and high-performance devices and distribution platforms. This product is presented to compete with the Instant Articles of Facebook and Apple News. The success is in its simplicity, although behind it there is a complex computer code, since the text appears first, then the images and finally the other features. At the same time, in the searches undertaken, the answer includes these webs before those in normal code.

At this juncture, the question should be posed: how does this system benefit the production of information? Also: what advantages does it offer to publishers? A similar question was asked in *The Guardian*: "AMP, then, is unequivocally good for all of us who surf the web on our phones every day, but is it good for publishers?" (Salmon, 2016). So far, it is a good tool for users, but not so much for digital newspaper editors. Other authors are in favour of editors using this new tool:

Yes, publishers have to adopt it, and yes, it is an open source project, and yes, the performance gains are very real and very substantial. But publishers can choose to adopt *Facebook Instant Articles* and *Apple News* as well. This is another stop on the road to impotence for publishers, another case of technology companies that set the rules (Benton, 2015).

Technological processes in digital newspapers tend towards integration. The key word is the convergence between journalists and programmers. The content has to be more agile. Editors are in the phase of trying through programming those supports that will render information more visual, more graphic, with more images and less text, as Daniels proposes in the article: "The Journalist-Engineer". The result is a graphic with all the topical items and with hardly any text. Newsrooms are becoming a room of white coats with engineers

who build the information next to the journalists and with complementary training in several fields:

We needed a quite unique skill set: people who could design, write and code. The group of talents is here: all the coders who created applications, dashboards and analytical tools could change their sense of design from the users to the readers. Like traditional journalists, engineers now have a lot of empathy with how people consume information (Daniels, 2015).

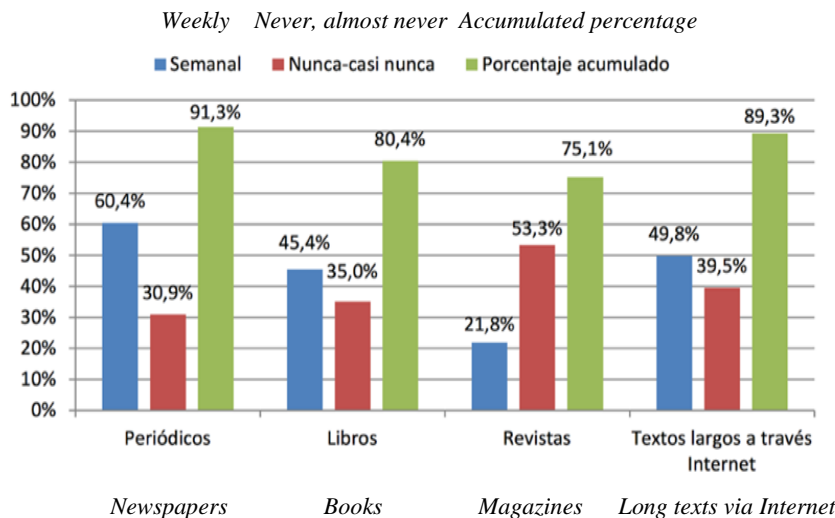
In short, newsrooms are constantly undergoing technological change, in which the latest trends tend more towards the world of programming.

3. More attractive information to win back readers

Access to information will end up being cheaper than air and, of course, water. The problem is not access. The difficulty in accessing good information depends upon digital newspapers winning back readers, as the printed media did in its day. New generations already born in the digital era do not rate analogue media. They seem boring, slow and with few images. They are multicultural and at the same time multimedia generations, so much so that they value the image over reading, the injured party. The great texts, the serials published over several days and extensive reports were cast into oblivion: we read increasingly less, and in the media, too. In addition, the preferred reading is brief, agile and dynamic, with many graphic supports. It is almost the opposite of what digital media is doing. The reading processes of digital newspapers had declined down so much that it was necessary to discover the causes. Hence, they study of the correlation between updating information and increasing readers.

What is read and how is it read in Spain? According to the Spanish Reading and Book Observatory (Table 1), the tendency is to read throughout the week rather than daily, with the press standing at 60.4% and books at 45.4 %, as reported by Javier Urgel in a study with data from 2014.

Table 1. Reading Frequency 2014



Source: Spanish Reading and Book Observatory/Javier Urgel

These reading data are complemented by the rate at which citizens read newspapers. According to information published in *The Huffingtonpost*, three out of four men read daily

or once a week (Table 2), while a significant proportion of women admit they never read newspapers.

Table 2. Frequency of reading newspapers



Source: The Huffingtonpost 2015

Given this general and specific data, it should be noted that readers do not feel obliged to read the information offered by the media and they only need what they get from Twitter, Facebook or other social networks. We must change the concept they have of reading newspapers. They think that the media does not conform to what they require. The native digital generations took over reading through social networks and that is where they access the information they need. Only when they want to expand or in exceptional cases of doubt, first they ask a friend or follower of that network and if their doubts persist, they approach a means to corroborate information.

In this sense, it is not about gaining readers, but about changing the perception they have about information. For digital natives, newspaper information is boring, heavy and difficult to digest. They require more and more information based on pills in which in less than a minute they are able to be informed about what has occurred in a place. Therefore, a more attractive type of information needs to be formulated in order to win back readers, recover their trust and in order that they themselves realize that digital newspapers check their information before publishing. Of course, in these times of post-truth it is difficult to highlight this advantage over other means that take advantage of this situation.

To attract readers again, some publishers have taken the right path: to provide a type of information similar to that used by social networks, or those networks cited by Google's search engine; short texts, instead of big reports; more multimedia content that is attractive and interesting for the reader; texts must be more dynamic and produced in the shortest possible time.

4. Updated information as an informative reference: some Spanish digital newspapers

The new supports with which digital media works do not guarantee that the content is updated more frequently. In printed newspapers, information could last 24 hours, except for exceptional days that took two or three editions. Readers regarded that time and space as something normal. They had the radio that offered them the most immediate information

and newspapers and radio stations complemented each other. Newspapers then began to compete, and that period gradually shortened, and newspapers went on to have at least two editions, one in the morning and the other in the afternoon. This is how things proceeded for more than half a century.

The arrival of digital technologies changed the landscape of digital newspaper production and distribution. The web universe seemed to be a panacea for the editors. They could place all surplus production that did not fit in the printed editions on the internet. Many news items that were left out, had been already written and lost out to advertising space and that would never see the light of day, could now appear on the digital media web. Three phases can be highlighted: **a)** News items are published as a single edition; **b)** They are published and some are updated and **c)** Improvement of the contents (frequent update). In the first case, most of the digital newspapers were involved. The editors were responsible for one or two topics and placed their text on the web. It was a digital news item in printed format. It was uploaded to the web and once there it waited its turn until displaced the next day. In the second case, competition between the digital media itself forced journalists to update their information at least once or twice a day, as long as they had new data to tell. In the third case, updates are considered mandatory to keep readers hooked on the newspaper, so that they have gone from reading it once a day to several times because they expect the digital newspaper to offer them better, more reliable and updated information.

5. Methodology

5.1 Objectives

The scope of information in readers is increasingly difficult to measure. There is hardly any research that separates out where readers get information from. It is known that more than half of information is obtained from social networks and the number of readers who consult digital newspapers is decreasing. This study outlines, through analysis, the environment in which some digital newspapers move in Spain in terms of the updating their information.

Faced with this general objective, the following specific objectives are added: a) proposal for improvement in the newsrooms, which implies a halt to their redundancies; b) new hires to design and produce more agile, dynamic and attractive information for the reader; c) resources to seek financial support to resolve the two previous proposals and d) full confidence in readers as the guiding criterion behind the daily selection of content.

5.2 Background

The number of news items published by digital newspapers had to be ascertained and, above all, an analysis performed of when they were updated. It is a qualitative work that leads to the calculation of the number of most active updates, hours, week and the sections within the digital newspaper. There are not many studies on the number of news items that are published every day in digital newspapers. One reference source has been the 2016 article by Meyer, published in *The Atlantic*, in which it is indicated that the Post publishes an average of 500 stories per day, in which video is also counted, *The Wall Street Journal* 240, *The New York Times* 230 and *BuzzFeed* 222. There does not seem to be many news items for newsrooms with so many journalists, although in the rest of the country the decline is also significant. The methodology of this study takes as a reference the situation in the most important digital newspapers in the United States in terms of employment and content production, and also adds a qualitative study of the media in Spain. It is convenient to specify this information. For example, in the case of *The New York Times* in its digital edition:

It publishes approximately 150 articles a day (Monday to Saturday), 250 articles on Sunday and 65 blog entries per day. In addition, 330 basic graphics per month, and about 120 articles per month published in the interactive template, which includes multimedia, interactive graphics and larger static graphics. That means around 15 pieces of multimedia content per day (Meyer, 2016).

Despite the problems arising from the advertising media crisis, this newspaper has gone from 170 pieces per day published in 2010, about 150 on working days and about 300 on Sunday, to approximately 230 today, which means an increase of 35% in a decade.

And what happens in digital only media, like *BuzzFeed*? Since the contents are completely digital, they are greater than in the media that shares newsrooms with its printed versions. The aforementioned author collected the data from this medium:

BuzzFeed published 6,365 stories in April and 319 videos, or about 222 pieces of content per day. Comparatively: In April 2016, 6,365 messages were published on Buzzfeed.com and 319 videos were uploaded. In the same month in 2015, 5,271 posts were published and 205 videos were uploaded. Finally, in April 2012 (four years ago), 914 posts were published and 10 videos were uploaded (Meyer, 2016).

Therefore, the increase in content in digital newsrooms is growing, especially in that media that began as a purely digital format.

The next question should be: with how many journalists, with what means and with what equipment? In this case, the newsrooms in the United States, despite suffering significant cuts, still produce a high number of pieces per day, which include text, but also images and are complemented with video. At the time of compiling this digital production data (April 2016), *NYTimes* had 1,300 journalists who perform editorial tasks, the *Post* about 700 and *BuzzFeed* has more than 460.

It is important to point out that the volume of production, that is, the original pieces and above all those that are updated, prevent journalists from following other topics. Therefore, the staff should be increased and not reduced as is happening in recent years. To close the situation in the United States, from January 2001 to September 2016, the newspaper publishers' industry in that country lost half of its employment, from 412,000 to 174,000, according to the U.S. Bureau of Labor Statistics. In contrast, the Internet publishing industry increased from 67,000 jobs in January 2007 to 206,000 in September 2016. This situation shows no signs of ending. Recently, Time Inc. fired 300 people as a result of the decline in the printed version, as explained by its president Richard Battista: "The measure is difficult, but necessary. It will reduce the total staff of Time Inc. by 4% and take place as the magazine industry faces a decrease in circulation of the printed version" (Byers, 2017). This is a worldwide phenomenon. The largest newspaper chain in Canada is experiencing such problems: "It is the largest newspaper chain in the country, with more than 200 brands under its umbrella, including numerous community and local newspapers. By way of comparison, in the US market, a similar failure would be if Gannett, Tronc and McClatchy were simultaneously lost" (Borzykowski, 2017).

What is the employment situation of journalists in Spain? The results in terms of information production and above all in updating also depends, above all, on the number of journalists that the newsroom employs. Since 2008, when the crisis began, newspaper personnel has been shrinking and some newsrooms lost almost half of their journalists. It is therefore estimated that in 2016 there were about 31,800 unemployed who were previously journalists: "In Spain, this situation has been aggravated by the series of redundancies since 2008. During this time, more than 11,000 professionals have been dismissed through this practice, a figure that has given rise to a perfect storm that does not show signs of remitting in the near future" (DirConfidencial, 2016).

For its part, the Madrid Press Association (APM) also offers some encouraging figures in the 2016 Journalistic Profession Annual Report and, more seriously, the trends do not seem to be improving or reversing this situation:

Last year, it was 9% lower than in 2015, and the number of unemployed journalists who signed on at Spanish job centres until September stood at 7,890. The improvement in employment, added Luis Palacio, however, 'should not hide the reality: Registered unemployment amongst journalists in 2016 is 74% higher than in 2008', the year when the economic crisis began (APM, 2016)

If we compare the same period in the United States, where the loss was half and in Spain, the Spanish figure is much higher: 74%.

5.3. Data Collection

Given this situation, a qualitative study of the three main national and three regional media channels was carried out.¹ The analysis period covers three months and began at the beginning of 2017, that is, from January to the end of March, in order to know the number of news items that were updated, at what time they were carried out, on which days of the week and also what were the sections in which they were most updated. The follow-up was done in three national newspapers: *El País*, *El Mundo* and *ABC*; and in three other regional newspapers: *La Vanguardia*, *El Periódico de Cataluña* and *La Voz de Galicia*. In the analysis, the five working days of the week were considered: from Monday to Friday. The main sections were taken as reference for the investigation: International, Opinion, Economy, Science, Technology, Culture, Style, Sports, Television and Miscellaneous. The nomenclature of the sections does not always coincide in name so much as content.

6. Results

The current situation of staff in Spain is not improving. There has been a cutting of posts caused by the current advertising crisis, in which publishers have been forced to ease redundancies by adjusting staffing rather than maintaining them and offering better quality news. But the battle seems lost, as although news is updated, most users follow current news through social networks, especially Twitter and Facebook, because they are always connected to these platforms. If alerts are not created in digital newspapers, they will not access news items so quickly. Hence, the results presented are not very favourable for Spanish newsrooms that should expand and improve content. Without a change in newsrooms and without an improvement in design, news results will be deficient.

6.1. Frequency of current news

Firstly, the total number of publications and their updates were reviewed, and it is observed that there are very few news items that have been modified and presented as new to the readers. In some cases, updates are hardly applied. In this way, the graphs² on the left indicate the number of news items that have been published over three months, and those on the right show the update times, if any.

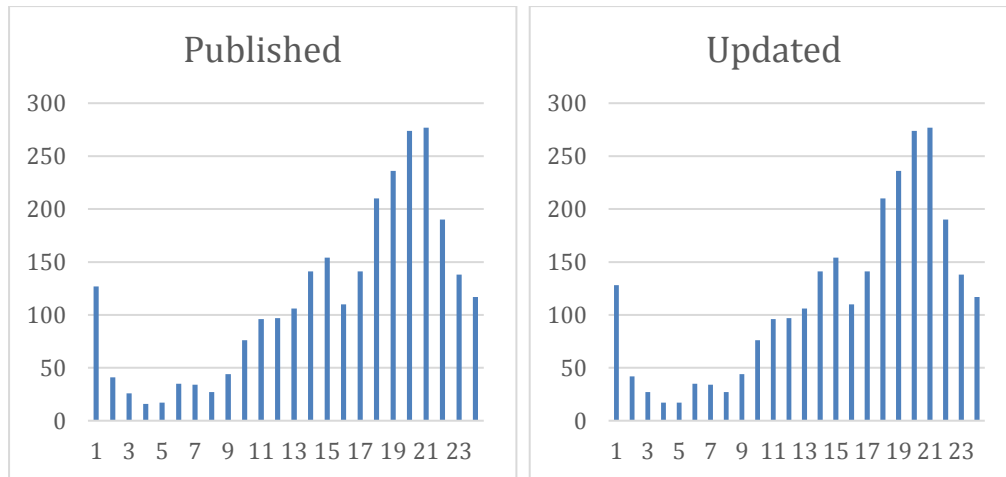
With regard to the news update times, it should be noted that digital newspapers follow behind the printed ones, since in the six media outlets the morning has hardly any updates, except for *El País* and *La Vanguardia*. There is an increase in updates in the afternoon and especially at night, between 18:00 hours and 22:00, with these figures (Figures 1 to 6): *El País*

¹ The following journalism students participated in the qualitative analysis: Daniel Ackerman; Mariana Torres; Francisco Ocaña; Dunia Arab; Idaira Santana, Haydée Barciela and Samuel Gutiérrez.

² The graphs are the author's

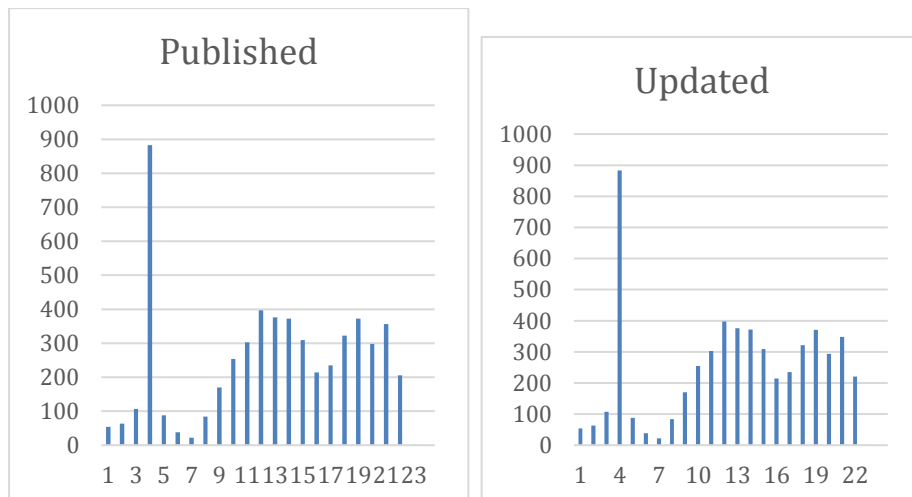
with 210-190 (with a maximum of 277 at 21:00, *El Mundo* with 321-220 (with a maximum of 348 at 21:00), *ABC* with 561-136 (with a maximum of 410 at 21:00), *La Vanguardia* with 153-183 (with a maximum of 278 at 21:00), *El Periódico* with 340-2 (with a maximum of 514 at 21:00) and, lastly, *La Voz de Galicia* with 181-2 (with a maximum of 150 at 21:00). This data is the most prominent, although there are days and times in which, because of current circumstances, the data fluctuates.

Graph 1. News published and updated. *El País*



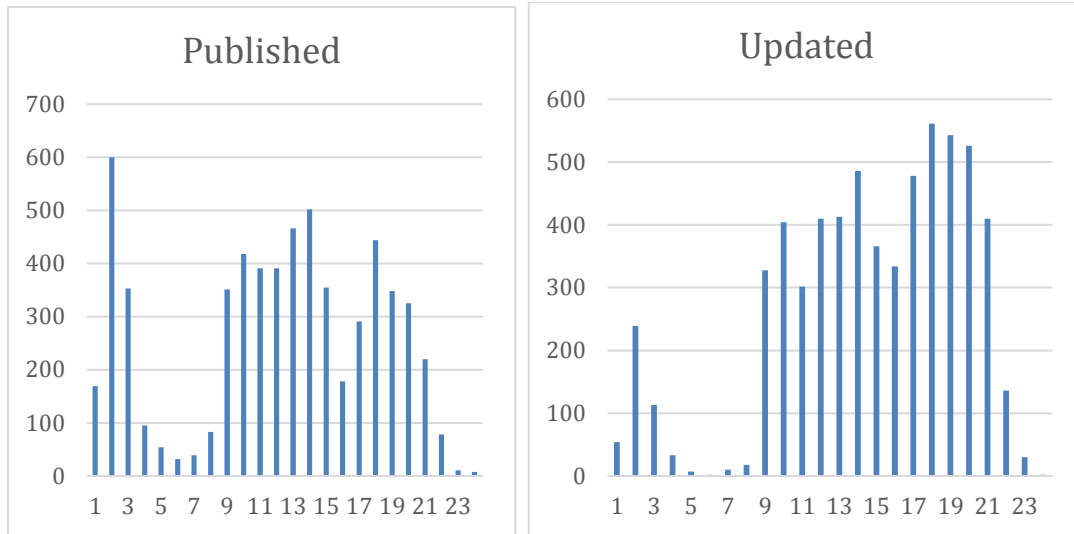
The digital version of *El País* is quite discreet in terms of when its news is updated. This graph does not show the update times for each news item, but the published news corresponds with the update, assuming that all possible corrections were made within the same time of its original appearance.

Graph 2. News published and updated. *El Mundo*



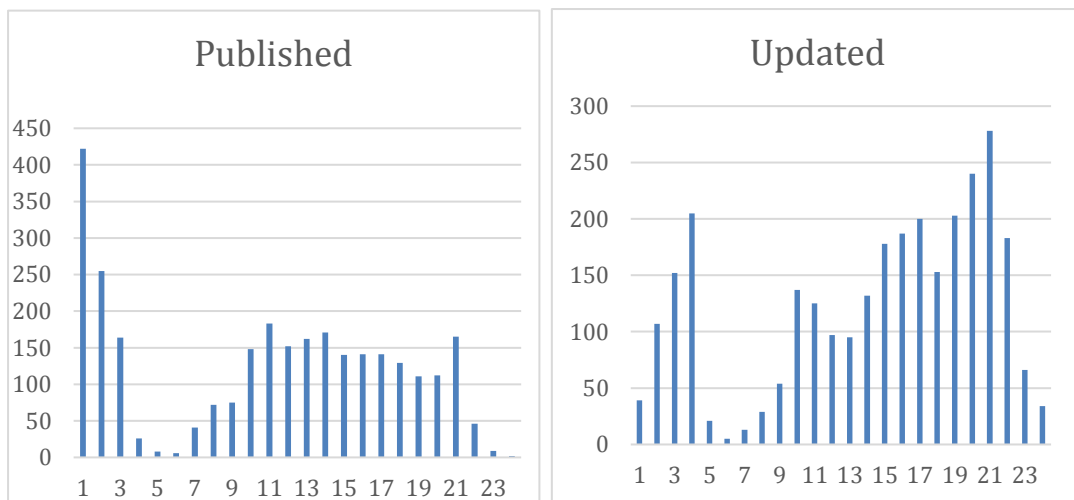
In the case of *El Mundo*, the display of the publication time is enabled. However, future modifications are hidden from the view of its digital platform users. For this reason, the graphs present the same order of bars, including within that time of publication the last modifications that have been made to articles or columns.

Graph 3. News published and updated. *ABC*



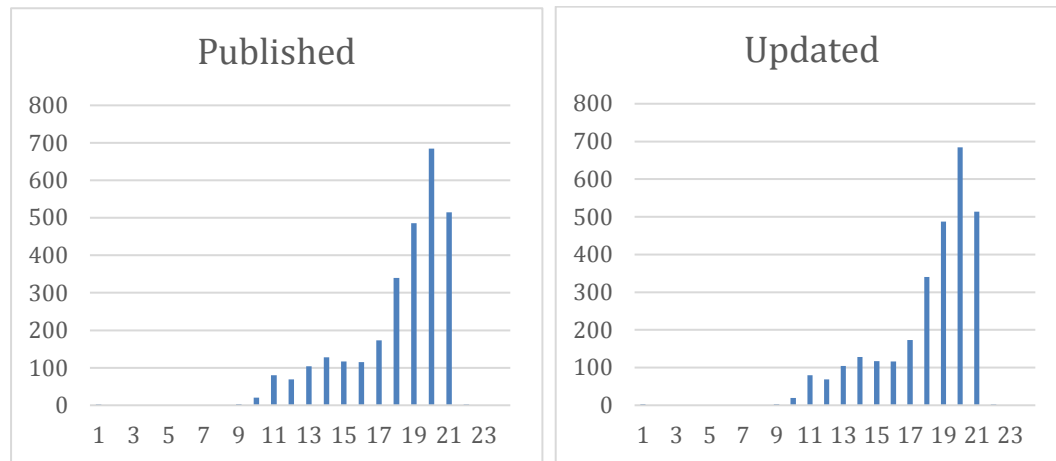
In the case of *ABC*, the situation is different from that of the two newspapers analysed previously, since some basic issues regarding its publication programming and review of information are evident. While the greatest amount of news is published at dawn, at approximately 02:00, although with an important group later at noon and in the early afternoon, updates take place more profusely at the end of each day.

Graph 4. News published and updated. *La Vanguardia*



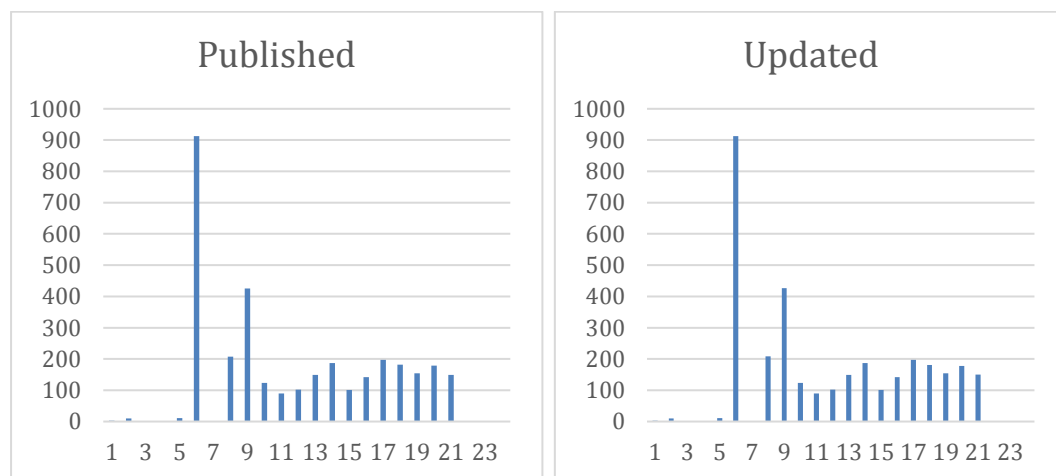
On the other hand, *La Vanguardia* also published more in the early hours of the morning, although with a sustained inflow of information between 11:00 and 19:00. Regarding the updates, there is an important peak at 6:00 and later, from 15:00 to 21:00, there are many corrections or modifications of their articles.

Graph 5. News published and updated. *El Periódico*



It was taken into account for the analysis of *El Periódico de Cataluña* that its website does not publicly report the time at which its news received any modification or was updated. That is why the time of its publication and update are directly related, in that the time of its last update correlates with that of its original publication.

Graph 6. News published and updated. *La Voz de Galicia*



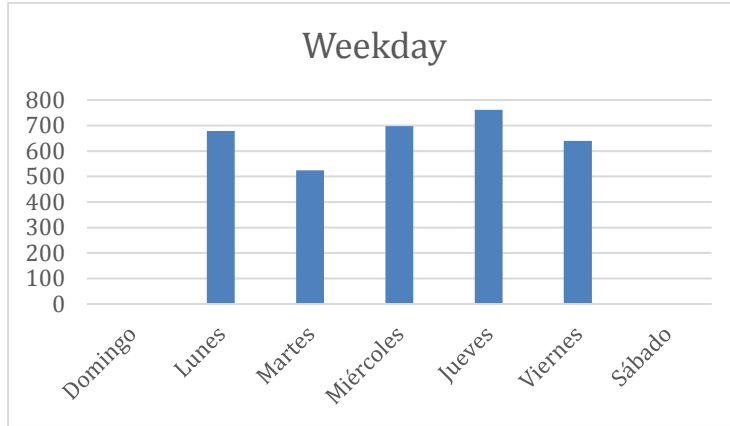
Finally, in *La Voz de Galicia* the same situation occurs as observed in some of the other media channels analysed. The last modification or correction that is made before its publication is stated as being its last; the update schedule is repeated with respect to the original version of entry on the web platform. Any small variation or any update that may occur is justified by a certain news item breaking or sports days with real-time update.

6.2. News updated by day of the week: totals

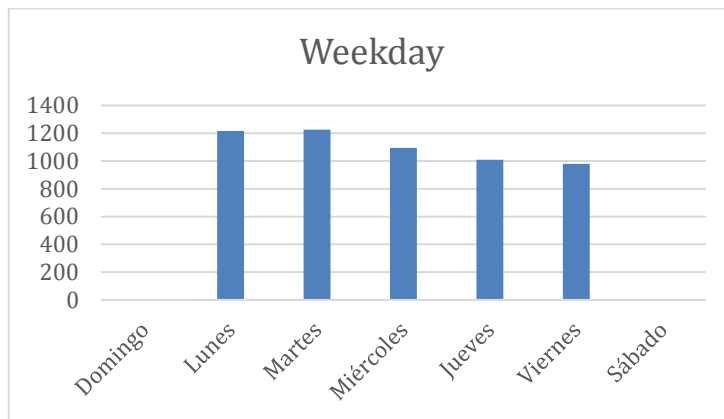
The update counted by day of the week, between Monday and Friday, reflects very similar results. In the case of *El País* (Fig. 7), the lowest figure refers to Tuesday, with 524 news items, and is at its highest on Thursday, with 761. The rest of the days was more or less the same: 679 on Monday, 697 on Wednesday and 640 on Friday. On the other hand, in *El Mundo* (Fig. 8) on the first three days of the week the volume is slightly higher with 1,216 on Monday,

1,227 on Tuesday, which is also the highest figure, and 1,095 on Wednesday, Thursday being the lowest with 1,009 and on Friday with 980.

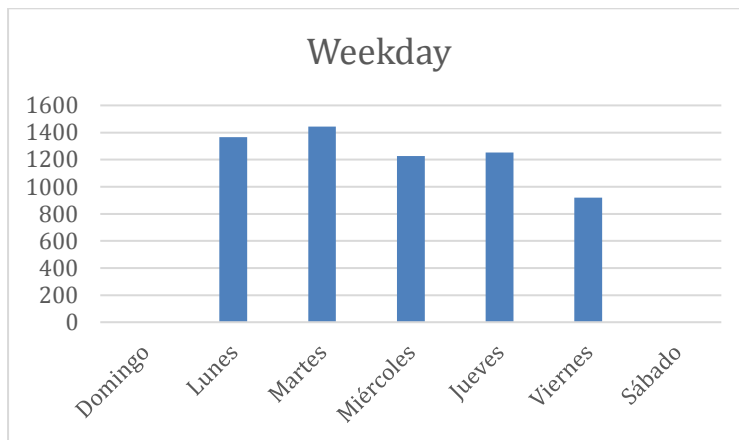
Graph 7. Weekday update. *El País*



Graph 8. Weekday update. *El Mundo*



Graph 9. Weekday update. *ABC*

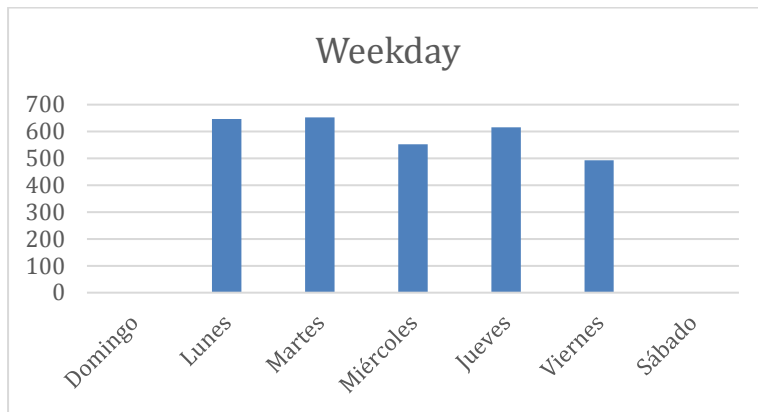


Sunday – Monday – Tuesday – Wednesday – Thursday – Friday – Saturday

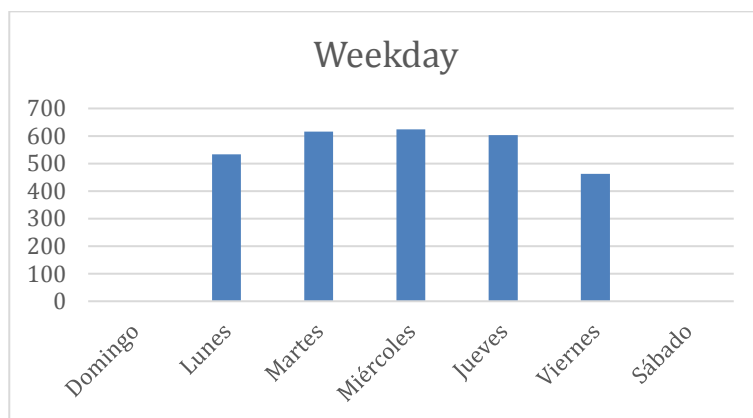
ABC (Fig. 9) is the newspaper that presents the best numbers in the analysis of the update by day of the week, first days of the week in particular: Monday with 1,366 and Tuesday with 1,443. Wednesdays and Thursdays offer similar results, the former with 1,227 news items and the second with 1,252. Finally, Friday is the day with the least updated news and its results fall below a thousand, with 919.

With respect to regional newspapers, the figures show more modest results and all of them fall below the thousand news updates in the total of the three months analysed. In the case of *La Vanguardia* (Fig. 10), Monday and Tuesday are the days with the most update, exactly 647 the first day of the week and 653 the second. On Wednesday, there is a decrease to 553, before a rebound on Thursday with 616 and then a fall again on Friday to the lowest figure, which is a total of 493 updated news items. On the other hand, *El Periódico* (Fig. 11) shows figures very similar to the other newspaper in Barcelona. Monday is a day with few updates, 534, but Tuesday, Wednesday and Thursday present a slight rise with 616, 624 and 603 news items, falling on Friday to 463, a situation very similar to Friday in *La Vanguardia* with the lowest of the week.

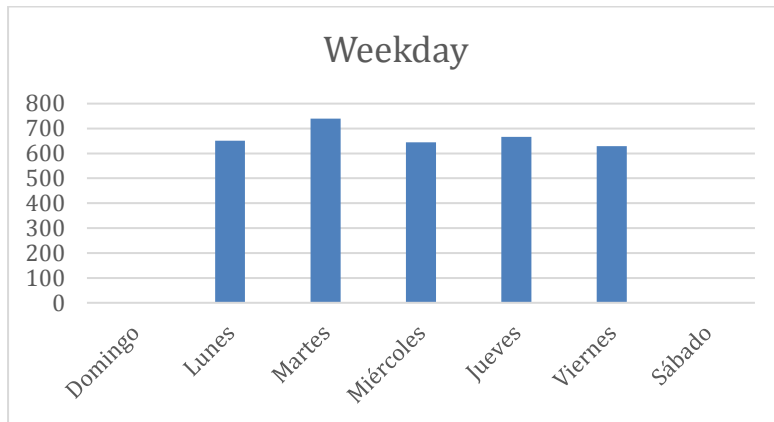
Graph 10. Weekday update. *La Vanguardia*



Graph 11. Weekday update. *El Periódico*



Graph 12. Weekday update. *La Voz de Galicia*



Sunday – Monday – Tuesday – Wednesday – Thursday – Friday – Saturday

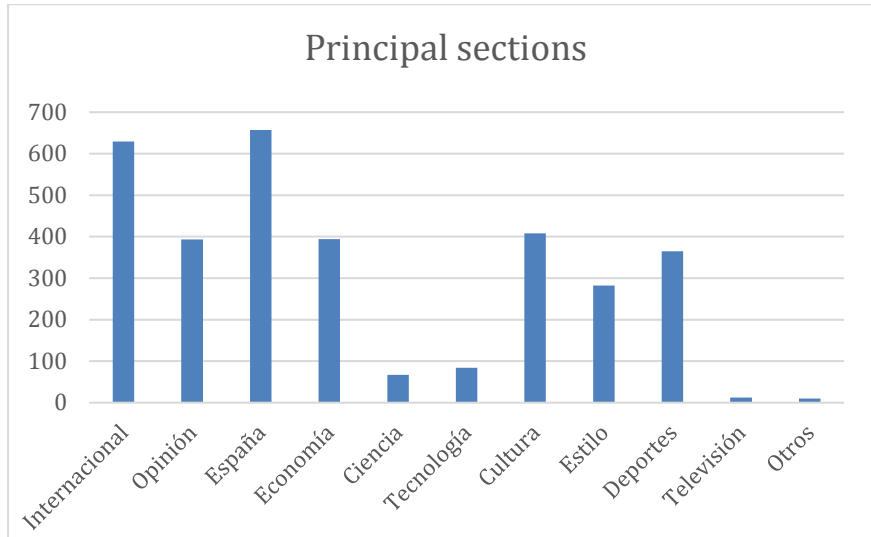
Finally, *La Voz de Galicia* (Fig. 12) is the newspaper that shows a greater parity between all the days of the week when it comes to updating the contents, since all are at an average of 630/640 except on Tuesday which increases to 740 news items. On Monday it registers 651, Wednesday 644, Thursday 666 and Friday 629. Compared to the other two regional newspapers where Friday's fall is considerable, in the case of the Galician newspaper, on Friday it maintains almost the same number of updated news items as the rest of the week.

6.3. News updated by sections: totals

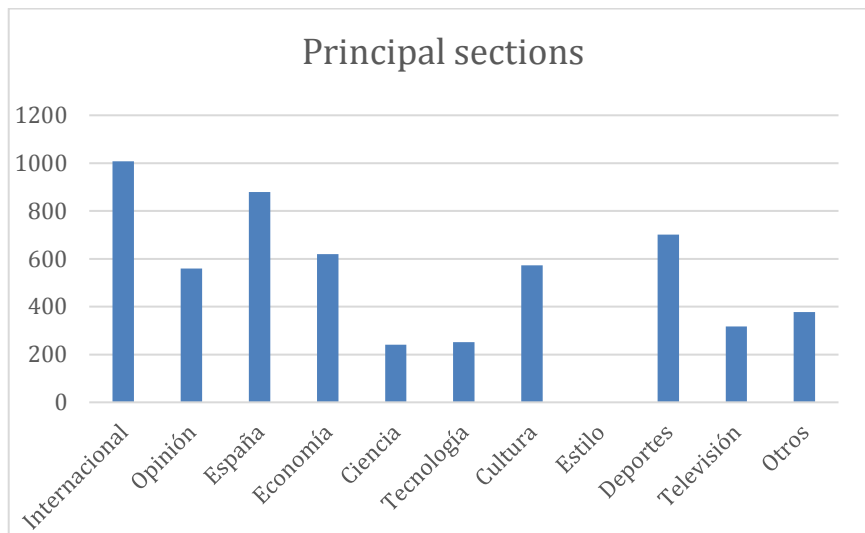
Regarding the sections of the media, we must take into account several factors, including the news itself. There is a marked tendency to update international content, which is reflected in the echo of the US elections and the inauguration of the new president, but also to keep the Spanish section up to date, especially in the three major newspapers with the Government's need to seek alliances for general budgets and also with corruption, some of whose scandals came to light in the period of analysis.

Starting with the national newspapers, in the case of *El País* (Fig. 13), the most updated section is Spain with 657, followed very closely by International with 629. The rest of the news barely reaches 400, with Culture that updates 408 and the rest is below that figure. They are followed by Economy with 394 and Sports with 365. The rest of the sections hardly provide data because they are below 100, except Style with 282. On the other hand, in *El Mundo* (Fig. 14), the International section has the most updates with a total of 1,008, followed by Spain with 879. Sports with 701 and Economy with 619 must also be highlighted. The rest, except Culture with 573, fluctuates between 300 and 200 updates.

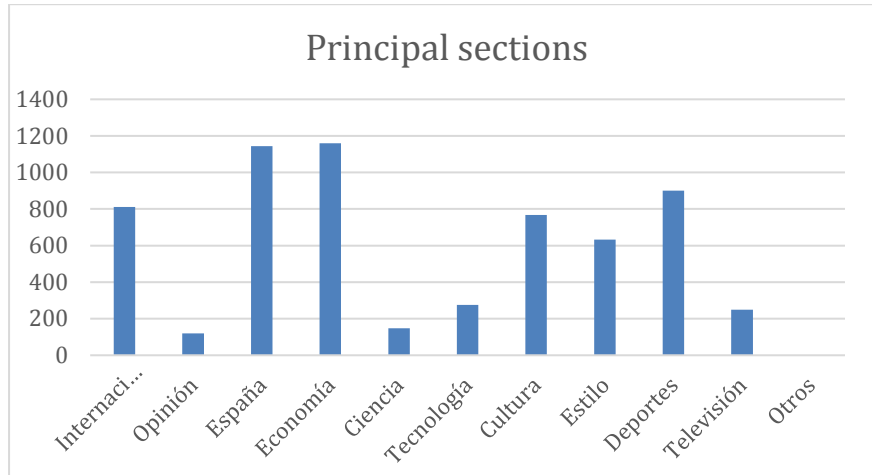
Graph 13. Sections update. *El País*



Graph 14. Sections update. *El Mundo*



Graph 15. Sections update. *ABC*

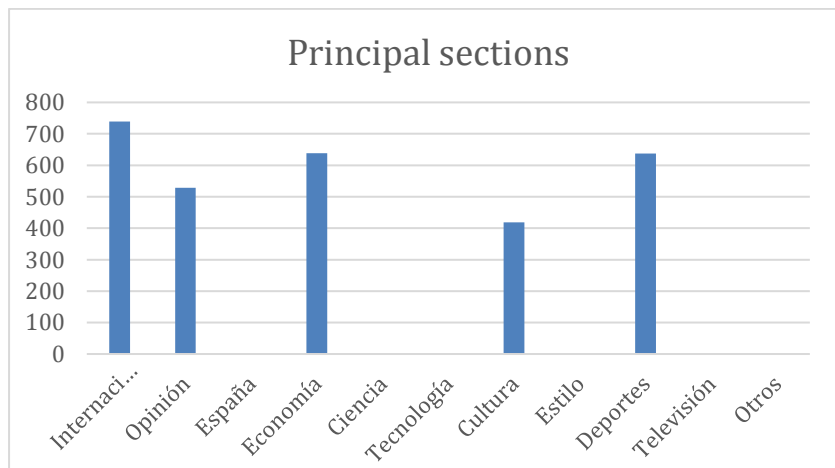


International / Opinion / Spain / Economy / Science / Technology / Culture / Style / Sports / Television/ Miscellaneous

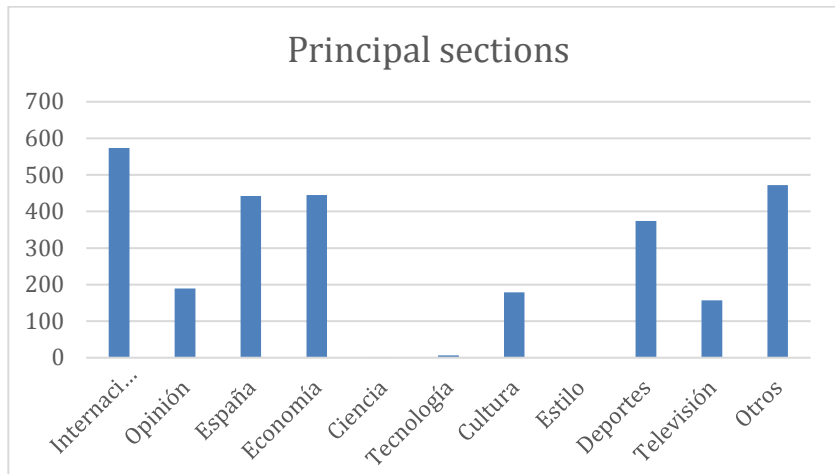
In the case of *ABC* (Fig. 15), the two sections where the information is most updated are Spain (coinciding here with *El País*) with 1,144 and Economy with 1,160. Sports with 900 and Culture with 768 are the other two most updated sections. The rest offers very irregular data that is at a remove from the examples that have been provided.

With the analysis of the sections in the regional media there is a greater coincidence, since the International, Sports and Economy sections are the ones that offer the greatest number of updates. In the case of *La Vanguardia* (Fig. 16), International is the most updated with 739. It is followed by Economy and Sports, separated by a single update, with 638 for Economy and 637 for Sports. Opinion with 529 and Culture with 419 make up the other sections in this newspaper. On the other hand, *El Periódico* (Fig. 17) as indicated above, has the largest number of updates in International, with 574. Economy, Spain and Sports also add important updates with 445 in the first case, 442 in the second and 374 in the third. In this case, it should be noted that within the Miscellaneous section, a high figure is reached with 472, *El Periódico* being the only newspaper, together with *La Voz de Galicia* that has this section.

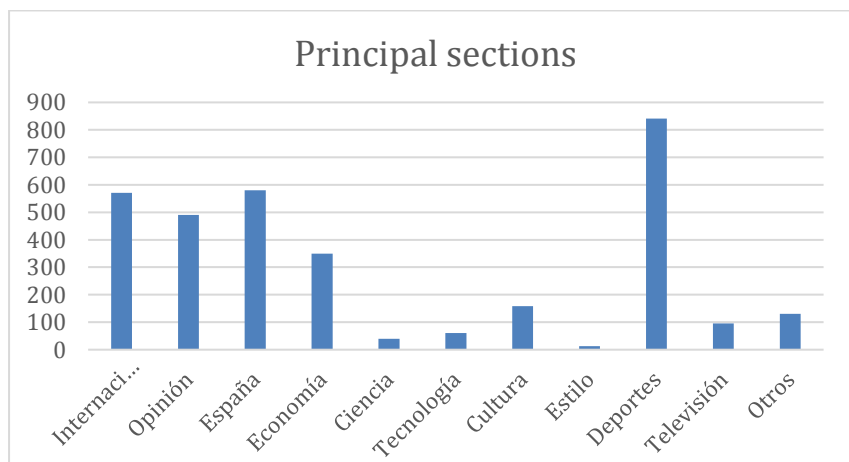
Graph 16. Sections update. *La Vanguardia*



Graph 17. Sections update. *El Periódico*



Graph 18. Sections update. *La Voz de Galicia*



International / Opinion / Spain / Economy / Science / Technology / Culture / Style / Sports / Television / Miscellaneous

Finally, *La Voz de Galicia* (Fig. 18) gives priority to updating Sports, with 841 news items, well above the second most updated section, Spain, with 580. Just after Spain is International with 571 and Opinion with 490. The rest, except Culture, with 158, hardly displays data worth considering.

The results provided by the research clearly indicate that Spanish newspapers require a profound transformation to offer better and more up-to-date information. They are far from the figures of the American newspapers that are contributed in this work. The change must be made soon in order for newspapers to retain readers who otherwise will rely definitively on social networks.

7. Conclusions and discussions

Newspapers have their greatest accomplices in their readers. There was a relationship that was almost symbiotic when, each morning, a newspaper was delivered to their home or was bought at the kiosk. Then that relationship deteriorated, perhaps due to the coexistence with and the conquest of other media, especially television. Then digital newspapers arrived

and were a relief for editors, but their implantation and their future success was never through the generalization of the social networks.

This was the scenario in which the present field research was undertaken: the main Spanish media, three of which are national and another three regional, in order to assess news production and updates. The three-month analysis also included the times at which the news, the days of the week and the most active sections were updated. With regard to the times at which more news stories are updated, it is the period from 17:00 to 23:00 in most newspapers. It should also be noted that the first three days of the week are when contents are changed and improved, Friday being the worst day with very low relative figures compared to other days. As for the sections, Spain together with International update their information the best, followed by Economy, Sports and Culture.

Editors expected new young readers to consult their news, but they never arrived because until now they have grown accustomed to the information they obtain on Twitter or Facebook. In addition, they began to believe their friend more than the journalist. The road to post-truth and the bad practices of some online media have been a serious blow for digital outlets. The crisis that has meant a contraction of the economy since 2008 should not be overlooked either. The decline in advertising and the lower benefits caused those responsible to take measures that were not very effective when assessed in hindsight. The principal step was the dismissal of thousands of journalists around the world. The figures represent more than 50% in the United States and more than 74% in Spain.

All these aspects of the matter suggest the need for the scientific community to engage in a series of discussions, such as facing the crossroads at which the media currently stands, with difficult outcomes, and they also call for a rigorous study about the methods that are being applied for the development of web contents and their update, when this is undertaken and the results produced. This is the contribution of this work which, through a quantitative study, goes to show that the state of the media, the reduction of staff and the decline in advertising do not help when it comes to increasing readership. Updating to compete with social networks would be another of the conclusions, but it is difficult when readers get their information on Facebook or Twitter, tools that are always open on their mobile phones, and when have greater difficulty in accessing digital media, even if they have their apps. A solution could be the sending of alerts with the information, so that when they received them they would go to expand the news item from that medium. The waiting time for information is shortened every day and that means that the media have to update their content more often, not just two or three times and not just in two or three sections.

This research is an appeal to the editorial offices of digital newspapers. Providing more journalists means better content, with more information that is verified better and consequently updated. Quality information cannot be provided without journalists. If every time a reader goes to a media site he or she finds outdated information, it is very likely that he or she will not return, and will instead look for information in another place, probably on a social network. Gaining a reader takes many years, but readers can be lost very quickly, just when they confirm when the visit to a newspaper site does not show them the information they seek. At present, there are already outlets that monitor news information live, know how many readers are looking for certain information and can decide if they should change, update or withdraw an item to make way for another. Technology, which is crucial in the monitoring of readers, has to change and improve in the rest of activities within the newsrooms, and editors must be trained to effectively manage more useful technologies in order to carry out their work.

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