

# Access and retrieval systems in Spanish-language digital newspapers

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## ABSTRACT

Researchers offer a descriptive analysis of search access paths available to readers of Spanish online newspapers. A twin approach is used: the first examines website in terms of access tools, their typology and format; while the second approach provides a description of web search systems. The proposal put forth by Guallar and Abadal (2009) serves as a methodological framework of a working template for making descriptive and comparative evaluations of the sample under study.

**Keywords:** Information retrieval systems; Digital newspapers; Multimedia resources; Digital files.

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## RESUMEN

**Sistemas de acceso y consulta en los diarios digitales españoles***María Victoria Nuño Moral*

Se realiza el análisis descriptivo de las formas de acceso y sistemas de consulta con que cuenta el usuario en los diarios digitales españoles desde una doble perspectiva: por un lado señalar cuáles son las formas de acceso y la tipología documental o formatos que alberga cada uno de los sitios web analizados y, por el otro, exponer las características que presentan los respectivos sistemas de búsqueda. Para su realización se ha tomado como referencia la propuesta realizada por Guallar y Abadal (2009) y se ha elaborado una plantilla de trabajo basada en la evaluación descriptiva y comparativa de la muestra seleccionada.

**Palabras clave:** Sistemas de recuperación; Periódicos digitales; Recursos multimedia; Archivos digitales.

## INTRODUCTION

The contents of online communications media have become a transcendent resource, not only in terms of their informative value, but also in terms of their role in preserving heritage. Currently from the general point of view, digital communications media are considered invaluable sources of information, and not only from the journalistic angle, whose uniqueness on many occasions lends them a inestimable value.

Since their appearance on the web, online newspapers are those that have led the way in the development of communications media. And without a doubt they have undergone greater change with respect to their print incarnations. In fact, it is now common to find video, audio, interactive infographics and photo galleries as part of the information offered to users.

All of this has been motivated not only by technological development, but also by competition, both in terms of their informative and entrepreneurial tasks, as well as their novel and exhaustive character in response to new user demands.

News in the online media is no longer limited to simple, expository text and an accompanying photo describing events. Currently, information is provided in

other media, including video and audio, etc., which on occasions not only complements information contained in the text, but also takes on an autonomous life that does not require any adjunct text in order to be fully understood.

Consequently, an essential feature of online periodicals is the facility to access and consult all of this material, especially that which we do not receive in print on a daily basis. The formulas for this access are several. This study shows that these methods range from the traditional means, inherited from print media and based on sections, to analysis, valuation statistics and the practices executed by users.

Currently, there are numerous studies of the presence of communications media on the web. Specifically, there are several that focus on online journalism. Worthy of mention are several monographs that describe the general, formal, historical and functional aspects that have revolutionized the *modus operandi* of journalism. Among these are studies authored by Álvarez Marcos and Parra Valcarce (2004); Salaverria (2005); García Jiménez and Rupérez Rubio (2007) and Palacios and Díaz Noci (2009). Another notable study was published by Pareja Pérez (2003, 2006), who alludes to the characteristics of the new communications media, breaking them down into the following facets: interactivity, immediacy, indefinite spatiality, multimedia or multiformat, functionality and personalization. For the question of immediacy, the second of these researchers mentioned has drafted a digital communication resources guide.

In conjunction with these analyses, other researchers have observed this topic from specific, specialized perspectives, providing an understanding of the evolution and current status of cyber-journalism, the field to which this study belongs. The following research papers are especially germane to the purpose of this study.

Luján Zavala (2003) focuses his attention on how interactivity and the appearance of blogs, or weblogs, integrated in the informative web site has modified the role played by the user in current journalistic practice. The impact of interactivity is analyzed by Parra *et al.* (2008), who emphasize the economic feasibility as a business providing new services for citizens. This economic vision also serves as a forerunner of the research by Marcos Recio (2005).

Moreover, at the *Fourth Cyber Society Observatory Online Congress*, Martín Herrera (2010) and García-Alonso Montoya (2010) reviewed the scene and novel tools available to the professional to make their work fit into this digital milieu and their impact in the workplace, all of this for the purpose of securing maximum profitability and communicative impact. The need to understand the future of the journalistic profession and production methods, and how these are undergoing change, are the axis around which the work of Esquivel Lozano (2010) revolves. He describes the current status of journalism, providing the

opinion and reflections of acknowledged experts in the field of digital communication. This same concern about innovation in the field of production is presented by Fernández Beaumont (1999).

The transformation occurring under the documental perspective is examined by Marcos Recio, Sánchez Vigil and Serrada Gutiérrez (2009); Rubio Lacoba (2005, 2011) and García Jiménez (2002). In the first instance, the authors examine the metamorphosis undergone by document centers as one of the key elements intervening in the production of information. They also look at the changes occurring in the work performed by its professionals in the exercise of their duties. Their analyses center on several major American and European newspapers, with special emphasis on a Spanish case. The study done by Rubio Lacoba analyzes the journalistic, documental and technological profile of the document professional working in the digital medium in relation to those functions inherently entailed in the general field of informative documentation. In a dissertation offered in 2011 and read at the *Ninth International Documentation Colloquy*, the researcher establishes the keys to radical change of the forms and functions secured with the consolidation of digital versions of diverse existing media or those native to the digital milieu. As such, the researcher reinforces the ideas expounded in a previous paper titled: “Mejor que un buscador, un encontrador” [Better than a searcher, a finder] (Rubio Lacoba and Blanco García, 2010).

Papers by Caldera Serrano and Nuño Moral (2001); Nuño Moral (2003) and Acosta Valdés, Ramírez Céspedes y Marrero Santana (2011) provide descriptive analyses of the planning and structure of digital media. While the two former papers are based on a comparison of content, sections and informative services of the main Spanish newspapers reporting general information to readers, the latter assesses these variables in both local and foreign newspapers. Along these same lines, professor Albornoz (2011) has analyzed and evaluated the content and multimedia resources used, the degree of interactivity and associated market features.

Other authors focus their efforts exclusively on the products and services offered in online media. In this area, the research done by González Quesada and Fuentes i Pujol (1998) and López Carreño and Pastor Sánchez (2010) on the Value Added Services (VAS) are outstanding. López Aguirre (2009) centers his analysis on both the informative and documental aspects of the Mexican online press, while Guallar (2011) examines diverse documental products and services in order to explain the transformation undergone by the press, stressing the growth seen in digital archives.

Finally, from a broad standpoint, the generalized analyses of such things as visibility, hypertexts, usability, quality and opportunities in online dailies bears

mentions. Beyond the research presented by Rodríguez Martínez, Codina and Pedraza-Jiménez (2010, 2012) on interaction, communication and quality (usability, information architecture accessibility), the work of Albornoz (2006) on the use and function of hypertext in audio-visual and multimedia resources (audio, video and animated graphics) is worthy of note. In the same vein, Guallar, Rovira and Ruíz (2010) have offered research alluding to access systems and recovery of said resources.

As the reader can see, despite the existence of the references cited above, very few of these offer an exhaustive assessment of the role of archives or digital archives. As such, we are providing the following summaries of research focusing on such matters as background for this paper.

One of the pioneering evaluations in the field of digital newspaper archives was reported by Jiménez, González and Fuentes i Pujol (2000), who identifies, on one hand, the characteristics of this type of archives in terms of how they are accessed, consulted, their resources displayed, and the query and help resources available to users; while on the other accounting for the informative resources that users access in each case under study. These same authors published research in 2003, which is also noteworthy, focusing on access to audiovisual information both now and in the past. Two previous papers by Professor Jiménez López also merit mention. The first (2003) approaches the topic of commercialization of digital archives, providing a discussion of the cases of *ABC*, *El Periódico de Cataluña* (en adelante *El Periódico*), *Diario de Navarra*, *El Mundo*, *El País* and *La Vanguardia*. In the second paper titled “Recursos electrónicos de información periodística: el caso de la prensa digital mexicana” (2004), [Electronic journalistic information resources: the case of Mexican online press] the researcher examines the access services for all of the information contained in the medium.

In a similar vein, there are case studies of a specific daily or geographic area, such as the case of Sanz Calama (2003) on the archives of the newspaper *El País*; as well as research by Agirreazaldegui, Ronco and Camacho (2009) and these same authors in collaboration with Idoia Camacho and Carmen Peñafiel (2010). The first of these analyzes the situation of print media and audiovisual content in the Basque Country, including news agencies and communications groups; the second deals exclusively with the context that characterizes Basque daily newspapers. Finally we refer to the work of Martínez Rubio (2008, 2009), who evaluates the characteristic retrieval systems of Valencian and Andalusian dailies.

On the basis of existing research and using the aforementioned article by Guallar and Abadal (2009) as a touchstone, the main objective of this work is to carry out a descriptive and qualitative analysis of the access modalities available to the user of online daily newspaper sites. The sample consists of the

following media outlets: *El País*, *El Mundo*, *ABC*, *La Vanguardia*, *El Periódico*, *La Razón* and *Público*.

To achieve this end, we have considered the type of formats which can be accessed and the consultation systems used for each case. With regard to the latter, a detailed study is made of each search engine. In summary, the basic pillars sustaining this work are the documental typology to which the access method connects, and the features of the archives and search system.

## METHODOLOGY

The following is a representation of the elements to be assessed in the dailies examined and which constitute the complete design of the research project:

- a) Documental typology: the types of documental resources offered in the dailies, including news, charts, interactive infographics, photo galleries, videos and audio content. This analysis does not entail a quantitative analysis of the existing multimedia resources, but rather analyzes the existence of such elements as options for consultation (localization and search for multimedia resources, label or access tag, etc.).
- b) Access methods: access methods for consultation and display of documental resources.
- c) Recovery systems: based fundamentally on newspaper archives and key word searches. The following aspects are analyzed:
  1. Denomination and localization.
  2. Versions available and duration of coverage.
  3. Types of searches and query filters.
  4. Resources retrieved: formal aspects and aspects associated with the documental contribution appearing in the list of documents retrieved.

## RESULTS AND DISCUSSION

### *Document typology*

The textual format continues to dominate in digital dailies, though multimedia resources are increasingly relevant. The study shows that four of the six dailies under examination (*El Mundo*, *ABC*, *El Periódico* and *La Razón*) group such resources under the heading “Multimedia”; while the others provide di-

rect access to said documents. As can be seen in *Table 1*, videos and photos are present in all of the dailies except *La Razón*, which means photographs provided do not have a tag to take the reader directly to them.

*Table 1.* Types of multimedia resources available in online dailies

<i>El País</i>	<i>El Mundo</i>	<i>ABC</i>	<i>La Vanguardia</i>	<i>El Periódico</i>	<i>La Razón</i>	<i>Público</i>
Videos	Videos	Videos	Videos	Videos	Videos	Videos
Photos	Photos	Galleries	Photo-gallery	Photo-gallery		Photo-gallery
Infographics			Infographics			
		Audio files				

For the sample analyzed, multimedia resources are not fitted with their own search engine. Access to resources is achieved by means of general systems, as can be seen further on. What is observed is that these are simple search methods, based largely on calendar or key word options, which serve to locate such materials. The exception to this rule was the newspaper *La Razón*, which does not offer access ways to multimedia resources once the system is queried, but rather provides a listing of titles under the heading “Video Library.”

The Spanish daily *El País* has its own consulting system accessed by selecting the heading “Infographics” which allows the user to search using the filters “Section” and “Calendar.” The daily *ABC* also has a search function for the three options, using the filters “Format” and “Section.” The daily *El Periódico* facilitates consultation of videos and photographs, and retrieval of both can be limited by “Calendar” and in the photo gallery by using “Topics.” The daily *Público* has a video search engine limited by “Section”; while the daily *El Mundo* allows keyword searches with the filter “Document type” (video or photo), once the total is tallied. Finally, the daily *La Razón* does not provide any individual tool for this type of resources.

### ***Access method***

In addition to news, photos, videos or graphics appearing on the first page of the daily, or accessed under the Multimedia tag, online dailies have several consulting options for diverse resources.

*Table 2.* Access modalities to information resources

	<i>El País</i>	<i>El Mundo</i>	<i>ABC</i>	<i>La Vanguardia</i>	<i>El Periódico</i>	<i>La Razón</i>	<i>Público</i>
Latest new/Time	X	X	X	X		X	
Contents	X		X	X			
Standardized list				X			

"Most often..."	Seen/Read	x	x	x	x	x	x	x
	Commented				x	x		x
	Liked					x		x
	Sent					x		
Archive		x	x	x	x	x	x	x
Search system (Text box)		x	x	x	x	x	x	x

As seen in *Table 2*, there are six other options for locating documents sought. Of these options, "Most frequently seen/read"; "Archive" and "Search" by "Keywords" are provided in every case. In view of the complexity of making such comparisons and the need to provide a more detailed and exhaustive explanation, the latter two tools shall be examined in the following section.

We pause briefly to dwell on several matters that should be considered regarding the remaining alternatives. The service "Breaking News" or "Latest News"<sup>1</sup> exists in all of the dailies except *El Periódico* and *Público*, which together with *El Mundo* also do not provide access through the "Contents." This alphabetically ordered, thematic, onomastic index is also geographic, while the daily *ABC* offers access to artistic works.

The option denominated "Standardized List" consists of highlighting an average of five or six relevant current news stories. The three dailies that offer this option provide the link button on the top of the front page, *El País*, *ABC* and *La Vanguardia* under the tags "Now happening"; "In Depth" and "Highlights," respectively.

The third route allows display of contents as a function of user access statistics to the same. The "Most often..." section provides four options.

### **Retrieval system**

As mentioned earlier, the sections "Archive" and "Search" (or "Key word") are the most important consultation instruments for accessing content. These options are provided in all of the sample dailies. In order to achieve greater clarity, we provide a descriptive and comparative analysis, which is derived from the assessment explained in the "Methodology: section of this study.

#### **1. Denomination and localization**

All the dailies use the tag "*Hemeroteca*" except the daily *El Periódico*, which prefers the tag "Archives." Both the latter and the daily *La Razon*

1 These options have been considered synonymous, although *ABC* differentiates between them as a function of origin of the resource. Thus, the label "Breaking News" includes breaking news from wire services, while "Latest News" uses information from the newspapers.

require access fees. While the former allows consultation, full display of contents is not free.

The daily *El País* even makes the distinction between “Archives” and “Print Archives”. The difference consists in that for the former the search parameter “Calendar” (year, month, day, time span”) only includes the last two months; while in the “Print archive” option the last two months are not stored and searches using “Key words” are allowed (as per the features offered in the “Search” option, which shall be explained further on).

The dailies *Público* and *El Mundo* provide the “Archive” activity in conjunction with the “Key word”; though *Público* has this second option for carrying out searches using an external search engine. That is, *Público* uses the tag “Archive” to execute internal searches and the “Search” tag to carry out searches using Google; while *El Mundo* tolerates such searches using both tools, allowing the user to select the universe to be searched in such a way that they may rightly be considered identical.

Finally, from the standpoint of information and perusal, *ABC* and *La Vanguardia* prefer to differentiate these options more markedly. Both dailies provide a manifest historical or retrospective character, which is discernible when one accesses either archive. In fact, both dailies offer the option “One day in your life” allowing users to search a specific date as far back as 1881 and 1891 for *La Vanguardia* and *ABC*,<sup>2</sup> respectively, provided in the latter case the search is made of magazine *Blanco y Negro* [Black and White]. The archive of *La Vanguardia* offers the option “Trends,” which provides a counter showing the number of times the topic has been searched over the course of time.

To conclude, it is worthy of note that with the exception of the daily *Público*, which when one accesses “Archive” displays a list of headlines organized in sections, the other dailies sampled provide a “Key word” search option, taking into account with regard to *El Periodico* the need to subscribe or the calendar constraints of *El País*, which are also the case for *ABC*. That is, the consultation of the archive using key words in the latter does not include the most recent fifteen days.

In terms of localization, the sample analyzed exhibits both “Archive” and “Search” on the front page.

## 2. Versions and historical coverage

The dailies *El País*, *ABC* and *La Vanguardia* allow a double alternative in that they display both online versions and the print edition of the daily.

2 Queries of the newspaper go back as far as 1903 for the Madrid edition.

The historical coverage provided by each daily reaches back to 1976, 1903 and 1881, respectively. *ABC* offers archival access to its magazine *Blanco y Negro* as far back as 1891. The other dailies in the sample offer archival access to the years 2000 and 2001 (for *El Mundo* and *El Periódico*, respectively), while *Público* offers archival access to the year of its founding in 2007. The latter two and *La Razón* allow free access to their digital editions.

### 3. Type of searches and query filters

Except for *La Razón* and *Público*, all of the sample dailies offer both “simple” and “advanced” search options.<sup>3</sup> In these two cases, only simple key word search capability is offered in a single text query field and no search filter options are provided. Searches of the daily *La Razón* can be executed within the daily itself and using an external navigator, offering access to documents from external sources. In contrast, *Público* uses Google navigation technology, but the results obtained consist of documents and resources created by the newspaper itself.

We can safely assert that none of the sample dailies, except *El País*, is equipped to provide direct access to advanced searches. That is, the constraint or limiting level is always in place once the query is entered into the system in the simple search text field. After learning the organization and internal structure of the newspaper,<sup>4</sup> we can state that *El País* does in fact allow direct access to advanced search functions using the tag Archive web. Moreover, the simple query is carried out using the text box situated at the top of the front page.

The rest of the sample dailies exhibit the following specific options in their respective key words search systems as shown in *Table 3* on the following page.

The following is a brief description of some relevant aspects in order to achieve a better understanding. In the first place, the difference between “Temporal coverage” and “Dates” lies in the former providing the opportunity to select between previously set time parameters, such as “last week”; last year” or any given year; while the “Date” tag allows the user to select a specific date, or set time parameters by entering “from-to” limiters. The operation of setting of parameters by using query language is present on *ABC* and *La Vanguardia*.<sup>5</sup> The first allows the use of logic operators (and/or/not) and the verbatim phrases in order to retrieve search targets,

3 Both labels are used in order to unify the comprehension of the existing casuistic.

4 That is, the user must be familiarized with the organization and labeling system used in the daily in order to verify the double Access to which this refers.

5 Moreover, *La Vanguardia*'s “Archives” allows the user to limit a search in three ways: “Edition” or “Supplement”; the exclusion operator “OR”, and display of front page only.

while the latter only use the logic limiters of and/or in conjunction with the phrase constraint.

Table 3. Search filters in simple and advanced search systems

	<i>El País</i>	<i>El Mundo</i>	<i>ABC</i>	<i>La Vanguardia</i>	<i>El Periódico</i>	<i>La Razón</i>	<i>Público</i>
Simple search		Internal search or search of other sources				Internal search or search of other sources	
		Document type	Document type		Document type		
		Date	Date				
		Section	Section				
		Supplements					
		Temporary coverage	Temporary coverage				
			Print or online version				
			Edition				
					Uses Google technology		Uses Google technology
Advanced search	Date	Date/Range		Date/Range	Date/Range		
	Document type			Document type			
			Query language	Query language			
				Author			
		Relevance					
				Section	Section		

The dailies *El Periódico* and *Público* employ Google technology to provide search services. The difference between these dailies is that, in the former, Google is the exclusive option, while the latter offers its own internal search engine as well.

Finally, we might mention that the filters “Section” and “Edition” in the *ABC* site, and the “Date” and “Supplements” filters in *El Mundo* provide users information regarding the number of documents contained under each heading. Obviously, this information is germane to the following section.

#### 4. Resources retrieved

Of the universe of documents retrieved, results obtained are structured in two areas: Formal aspects and documental contribution.

##### *Formal aspects*

Four parameters are included within this block:<sup>6</sup>

- Ordering and results  
With the exception of the daily *Público*, whose results appear classified by sections, the other sample dailies follow the ordering criteria of “Date” and “Relevance.” Moreover, the daily *ABC* uses the “Relevance” criterion in conjunction with the “Date” criterion, but not vice-versa.
- Display of the number of pages per document  
The dailies *El Mundo* and *ABC* allow the user to determine the range of documents he wishes to display by page on the basis of a resulting count of the total.
- Displaying the print or online edition  
The default option when user enters the daily *El País* and which he or she is required to specify when making a query in *ABC*. Moreover, in the latter, one must take into account that the search system does not include the most recent fifteen days contents of the print edition.
- Total number of document search results broken down by typology  
This alternative does not consist in evaluating whether the system permits internal filtering of documents by types. Its purpose resides in evaluating when records are obtained from a search query, whether the system indicates to the user the numerical value of resources obtained with specification of its distribution in accord with the documental typology established for each medium.<sup>7</sup>

##### *Documental data provided*

The following items are evaluated in the second block:

- Data provided by each document  
*Table 4* provides a comparison of the analysis done on each page of results after the formulation of the search query entered into

6 The option “Management” (comment, print, etc.) as defined by Guallar and Abadal has been excluded from this section, because none of the dailies sampled provides this option in the search results.

7 For this section, it is important to remember the option provided by this daily and *ABC*, when it was explained that the results mentioned the number of documents and resources available through the filters “Section”; “Edition”; “Date” and “Supplement.”

the system. The daily *Público* is excluded because the queries are executed exclusively through Google technology, and the only datum exhibited in all their records is the URL which takes one directly to the internal resource. For the other dailies studied result would be the following:

Table 4. Information provided in the results lists<sup>8</sup>

<i>El País</i>	<i>El Mundo</i>	<i>ABC</i>	<i>La Vanguardia</i>	<i>El Periódico</i>	<i>La Razón</i>
Date	Date	Date	Date	Date	Date
Relevance	Relevance				
	Heading				
Title	Title	Title	Title	Title	Title
Subtitle	Subtitle	Subtitle	Subtitle	Subtitle	Subtitle
Author	Author	Author	Author	Author	
	Document type				
		Section	Section	Section	

The table above shows *La Razón* and *El Mundo* at either end. Interestingly, *ABC*, *La Vanguardia* and *El Periódico* offer the user the same data on each document. The indicator “Sub-title” is employed by *La Vanguardia*, which generally refers to the beginning of the text body.

- Links to related resources

The dailies *El País* and *El Mundo* are the only newspapers of those studied in which a list with documents is exhibited in relation to the established query. Obviously, the link is assessed from the results page, not individually, once the user accesses each one of said records.

- Help for topical queries

Like the previous point, the aforementioned newspapers are the only ones offering help from the standpoint of content. It must be noted that this parameter differs from other forms of access established in *Table 2* under the tags “Index” or “Standardized list.”

In this case, it is a question of evaluating the presence of terms (topics, or geographic or onomastic elements) that can be associated with the concepts employed by users in their queries, in such a way that the queries provide concrete results.

8 In this case, it is excluded if the results page has attached photos and videos, because as has been shown on occasions a photo appears when the resources actually present in the document is a video. These cases have been observed in *La Vanguardia* and *Público*, for example.

## CONCLUSIONS

With regard to the three blocks evaluated, conclusions come along two lines. In the first place, the inclusion of multimedia allows digital dailies have overcome the barriers implicit in the print media, equipping themselves with television, which even in its analogue days already used basic resources such as text, audio, photographs and video.

All of this has situated digital newspapers archives as a unique, exceptional source of information, both in economic and cultural terms. Compared against earlier studies cited herein, one can appreciate and increase in the multimedia resources providing information, despite the existence of significant lacunas, such as those exhibited in the daily *La Razón*.

Secondly, parallel to traditional search engines, the number of search options available to the user having gained access to contents continues to grow. The dailies *El País* and *La Vanguardia* are notable for providing six alternatives discussed under "Access methods" in this study.

Beyond the commercial feasibility of the search systems, digital media should plan their archives on the basis of the end user. This is the area exhibiting greatest vacuum and, consequently, requires the most attention and largest changes in order to ensure that the resources contained in it are available and useful.

Such aspects, such as explicitly indicating temporal coverage of a digital collection or of the digital or print version; avoiding unnecessary duplication of synonymous tags or precisely specifying the multimedia resource accompanying the informational text supplied in the search results page, are without a doubt aspect that should be reviewed and improved, as should the online newspaper web sites for the purpose of greater effectiveness and efficiency.

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