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Accessibility of Spanish **digital newspapers**

Summary

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Fundación ONCE

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Technosite
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Accessibility in Spanish On-line Newspapers

Discapnet's Information Accessibility Monitor is an initiative from the Operative Program to Fight Discrimination, co-financed by the ONCE Foundation and the European Social Fund to improve digital literacy and access to the Information Society for people with disabilities.

The ways of accessing information are evolving with the technologies that provide the support media for that information. Even though the classic printed page is still being used by most daily newspaper readers, visits to on-line digital varieties are increasing at astounding rates. For many people with disabilities, such as the visually impaired or people with severe upper-body mobility difficulties, online media, to the extent that they have been designed for and maintained the criteria for accessibility, have proven to be their first opportunity to access the information and services that the press provides to all readers.

The right to information is undeniable in our context, and the chance to access the support media it is presented on is an essential requirement to be able exercise that right. Being informed is also a requirement for proper educational, professional, and personal development. Awareness of current events and social issues under constant debate, and the ins and outs and ups and downs of society, economics, politics, culture, and sports is vital to completing and updating the formative development of one's own abilities, to make informed decisions that may affect private and professional endeavors, to interact with colleagues, clients, and suppliers, to feel part of the worries, values, controversies and consensus that underlie the social construct of reality that the community makes and re-makes day by day.

In particular, the daily press is a key tool for looking for jobs and identifying opportunities for professional promotion. Although websites dedicated specifically to providing intermediary services in the job market have developed greatly in recent years, many job offers are still posted primarily or exclusively in the daily press. The online papers are slowly beginning to add sections specifically dedicated to the classified job postings found in their printed editions, incorporating search tools to enhance the user's experience and make it easier to find the most suitable opportunities in each case. This trend is particularly perceptible the financial press, which has a readership of highly qualified professionals, and is therefore a much-used channel for businesses to find candidates for skilled and management positions. Clearly, the accessibility of online media is a vital requirement for disabled people to take advantage of this new channel of information.

The sports press, on the other hand, enjoys some of the largest circulations of the mass media, including in its on-line varieties, and are thus highly inclined to incorporate innovations designed to increase their readership. Many assiduous daily newspaper readers started their habit by reading the sports press; this is equally likely of handicapped people who begin using on-line news sources by starting with the sports news available on the net, which would then play a significant role in the process of digital literacy for collectives that may otherwise risk being excluded. The analysis of this type of news may also help identify trends and trouble-shoot

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problems arising in the on-line press. In addition, the mere fact of undertaking the problems of information accessibility of on-line news in and of itself involves using information technology to raise the awareness of the professionals and staff in charge of the media being analyzed. Motivated by the desire to find out about the standing of their respective sites in detail as described in the reports, they will have in-depth knowledge about the real possibilities and difficulties faced by the handicapped in integrating at work and fully participating in society via the instruments of the Information Society. This more realistic detailed knowledge will slowly infuse the treatment those same media and professionals give later on to issues involving the handicapped, thereby increasing social awareness.

In the present study, the Information Accessibility Monitor analyzes the criteria of accessibility to the web content of the main on-line newspapers in Spain. It also presents the opinion on the site of a group of users with varying types of handicaps and ways of navigating. The study was made on a selection of 15 newspaper websites covering general, sports, and financial news.

The results of the technical analysis reveal scarce application of the criteria of accessibility; none of the websites analyzed stands out clearly over the rest. The best scores, obtained by the sports daily MARCA, barely surpass 25% success in applying criteria for accessibility to their web content. The rest did not even attain that percentage.

On the other hand, the users gave a better opinion when answering the satisfaction questionnaire. The top-ranking newspaper sites were El Mundo (76.11%) and Expansión (75%), whose scores place them among the best-rated sites in the studies undertaken by the Monitor. The average scores obtained on the satisfaction questionnaire, at 61.93%, is the highest attained so far, and may reflect the test users' stated familiarity with these digital media when performing the tests.

For people with functional impairments, the advantage of being able to operate on their own means, without need of supports they find hard to use, are an added benefit to the ones for the population at large. The potential clientele from this group is nothing to disdain, and from a business point of view, it is worth winning them over through the correct use of the web design techniques for making websites accessible.

By the year 2012, it will be mandatory for private-sector websites to be designed accessibly. The time has come, then, not only to become aware of the existence of barriers in the web for some users, but also to adopt the opportune measures to remove them. The best way to carry out this task is by knowing the technical criteria and providing suitable training to those who design, develop, and maintain the contents on these websites.

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1. Introduction.

Access to information is evolving thanks to the technologies serving as the medium for that very information. While the classic paper format newspaper continues to be the most commonly read form of daily press, it is also true that access to digital versions is growing at an extremely rapid rate. Overlooking the unquestionable certainty that most printed newspapers are read (or at least skimmed) by more than one person, we can give an example of the use rate between that and the digital version of the same newspaper in two cases[1]:

- In 2006, the general information newspaper *El Mundo* had a daily print edition circulation of 320,161. Its digital version received a daily average of 289,502 individual visitors.

- The sports newspaper *Marca* had a daily print-version circulation of 314,007. Its digital version received a daily average of 159,770 individual visitors.

This figures point to the significance of the digital versions of printed newspapers. Further confirming this fact is the emergence of newspapers whose only platform is Web-based distribution such as *Libertad Digital*, *Periodista Digital* and *Confidencial*, main attractors of individual visitors.

The right to information is alienable in this day and age and the options available to gain access to the media on which this information is presented must be addressed with the seriousness they merit. In this study, the Info-accessibility Observatory analyses the accessibility criteria as applied to the content published on the portals of the major Spanish digital newspapers and the experience and opinion of a group of users with different types of functionality and browsing techniques. To this end, 15 newspaper portals were selected based on criteria described further on in this study, featuring general, sports and economic information.

2. Discapnet's Info-accessibility Observatory.

In 2004 Discapnet, a project co-funded by the ONCE Foundation for the Cooperation and Social Integration of Persons with Disabilities in Spain and European Social Fund (ESF), launched the Info-accessibility Observatory for the purpose of generating and disseminating information on Web accessibility through the analysis of specific sectors and by making inter-sectoral comparisons and monitoring the evolution of accessibility over time. As a result of this line of work, a number of Web portal accessibility reports have been published and disseminated on the Web.[2]

The aim of Discapnet's Info-accessibility Observatory is to inform the public and highlight not only compliance levels with guidelines currently in force but also good practices and the main barriers or impediments found in the Web, including the perspective of users in this assessment. Greater knowledge of the strong and weak points detected by experts and users of different portals and in different sectors will help to enhance understanding of what accessible Web design really means. This is

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[1] Data taken from the Web page of the Distribution Justification Office (Spanish acronym OLD) consulted on 2 February 2007 on information for the printed version (http://www.ojd.es/ojdx4/diarios2.asp) from July 2005 to June 2006 and for the digital version (http://ojdinteracitva.ojd.es) from December 2006.

[2] These works are available at:
http://www.discapnet.es/Discapnet/Castellano/Observatorio_infoaccesibilidad/default.htm

particularly important in the case of managers, designers and developers of sites, tools and services within the sphere of this media, growing in importance with each passing day, to whom improvement guidelines are furnished.

The Observatory uses an innovative methodology developed by Technosite, an ONCE Foundation company. Pursuant to the W3C/WAI recommendations,[3] this technology combines technical accessibility analysis with an assessment of usability and accessibility based on feedback from the users themselves:

- The frame of reference used in the assessment of the technical aspects is based on the Web Content Accessibility Guidelines 1.0 of the W3C/WAI,[4] synthesised into a set of indicators applied to a sample of pages per portal. Verification is conducted by professionals by means of automatic and manual testing.

- Assessment by a panel of users with differing functional capacities (persons with upper-limb mobility difficulties or who cannot see or hear) is carried out by means of a number of tasks and a questionnaire to get an idea of perceived satisfaction from the different sites. This allows for the identification of barriers and favourable aspects and is a way to check the "information architecture" (i.e. the way content is organised, browsing systems, search and orientation) and interaction processes between the user and the Websites.

The combination of these two approaches furnishes relevant, systematic and qualified information on the degree of accessibility in the sectors under study offering learning experiences for the correction and improvement of the Internet.

3. Sample selection.

The sample consists of 15 digital newspapers. Five characteristic pages of each of these were singled out for the technical analysis and the conducting of users' tests. Users were subsequently asked about their degree of satisfaction in terms of browsing and overall handling.

The sample was as follows:

- Six general information newspapers with a print version.
- Three general information digital newspapers with no print version.
- Three sports newspapers.
- Three business newspapers.

The following daily press websites were subjected to our technical analysis and user assessment:

1. **EL PAIS** (www.elpais.es).
2. **EL MUNDO** (www.elmundo.es).
3. **ABC** (www.abc.es).
4. **LA VANGUADIA** (www.lavanguardia.es).

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5. **LA VERDAD** (www.laverdad.es).

6. *20 MINUTOS* (www.20minutos.es).

7. **LIBERTAD DIGITAL** (www.libertaddigital.es).

8. **PERIODISTA DIGITAL** (www.periodistadigital.com).

9. **EL CONFIDENCIAL** (www.elconfidencial.com).

10. **MARCA** (www.marca.com).

11. **AS** (www.as.com).

12. **SPORT** (www.sport.es).

13. **EXPANSIÓN** (www.expansion.com).

14. **CINCO DÍAS** (www.cincodias.com).

15. **LA GACETA DE LOS NEGOCIOS** (www.negocios.com).

Five representative pages featuring the following characteristics were analysed in the case of the 15 selected sites:

a) Home page.

b) News page.

c) Result page from a search with the word *discapacidad* (disability).

d) Press library page or the like.

e) Contact page or the like.

4. Aspects assessed.

As in the case of previous work performed by Technosite for Discapnet's Info-accessibility Observatory, the tests to verify the accessibility status of the sites studied have two axes:

- Technical evaluation.

- User experience.

4.1. Results of the technical evaluation of Web accessibility.

The technical evaluation included an analysis of 12 accessibility aspects covering the majority of the Web Content Accessibility Guidelines 1.0 of W3C/WAI (WCAG 1.0) corresponding to levels A and AA. In the view of the Technosite experts responsible for the study, these criteria are able to provide a fairly accurate overview of a Website's accessibility. Generally speaking, they include priority 1 aspects and, in some cases, priority 2. The verification points (specifically addressed in the section on results analysis) are:

1. **Validation of W3C technologies** (priorities 1 an 2 in WCAG 1.0).

2. **Frames** (priorities 1 and 2 in WCAG.1.0).

3. **Forms** (priorities 1 and 2 in WCAG.1.0).

4. **Alternative text in the case of multimedia elements** (priority 1 in WCAG 1.0.)

5. **Headers** (priority 2 in WCAG 1.0).

6.   **Relative units on style sheets** (priorities 1 and 2 in WCAG 1.0).

7.   **Clearly identified links** (priority 2 in WCAG 1.0).

8.   **Contrast** (priority 2 for images in WCAG 1.0).

9.   **Semantic use of colour** (priority 1 in WCAG 1.0).

10.   **Linearised table content** (priority 2 in WCAG 1.0).

11.   **Data tables** (priority 1 in WCAG 1.0).

12.   **Scripts** (priority 1 in WCAG 1.0).

We should also point out that the pages of the sites analysed may change over time meaning that the results registered herein refer exclusively to the status of the said pages on the dates that the evaluation was conducted (second and third week of April 2007).

Table 1, showing the percentage obtained by each of the digital newspapers in descending order, provides an overview of the results of this technical Web accessibility evaluation.

Table 1.
Classification of the portals based on success percentages in the proper application of the criteria analysed in the Web accessibility technical evaluation tests.

Portals	Success rate (%)
Marca	28.57
Libertad Digital	23.40
La Vanguardia	18.75
La Verdad	16.67
Periodista Digital	16.33
El Confidencial	16.33
El Mundo	14.89
ABC	14.89
La Gaceta	12.50
Cinco Días	12.24
El País	11.76
Expansión	11.11
Sport	10.00
20 Minutos	7.14
As	4.00
Average	**14.57**

We should mention that this compliance rate cannot be associated with the site's global accessibility given that a only a limited sample of 5 pages per site and only some aspects of accessibility were analysed. Guideline verification points, also an important element in WCAG 1.0 were not included in the analysis.

The results speak for themselves and can only be interpreted as a clear lack of application of accessibility criteria to Web content on the part of Spanish digital newspapers. **The average success rate of this technical analysis is the lowest of any obtained to date in the studies conducted by this Observatory: 14.57%**

Only one of the portals analysed, the sports journal *Marca*, scored above the 25% threshold coming in at 28.57%. In this case, however, only 4 rather than 5 pages were analysed given that this portal does not have a search engine (a fact which does not reflect positively on that newspaper either). The rest all scored below that mark, with less than 20 percentage points separating the lowest and highest

scores. This is the first time in any of our studies that scores were so concentrated in the lowest quarter of the scale.

Table 2.
Percentage of correct pages broken down by accessibility criteria

Criterion	Percentage
Semantic use of colour	100.00
Linearised table for markup	85.07
Data tables	66.67
Colour contrast in images	27.03
Style sheets	8.11
Clearly identified links	7.04
Headers	4.05
Validation of HTML and CSS code	1.35
Scripts	0.00
Alternative text for images	0.00
Forms	0.00
Frames	0.00

Table 2 shows success percentages achieved by the sample for each criterion applied in the technical analysis of this study. The result obtained in the semantic use of colour stands out: all 4 of the pages where said use of colour was found correctly apply the accessibility criteria and hence a 100% success rate. Two other criteria which stand out for their correct use are linearised tables for markup (85.07% success rate) and the correct labelling of data tables (66.67%). Of these three criteria with the highest success rate ranking, only the linearised data tables section had a relevant number of cases (67 pages analysed), while only a scant number of cases was found for the other two criteria (4 for the semantic use of colour and 6 for data tables).

With the exception of colour contrast in images conveying textual information (27.03% success), the rest of the criteria are below the 10% success rate threshold and 4 were at 0%: Frames, Forms, Alternative text for images and Scripts.

4.2 Results of the users' assessment.

Each of the 6 users received a self-administered test for the assessment of the Web portals of the digital newspapers.

The users received the following instructions for the assessment of each of the 15 portals:

1. Browse the Web and search for indicated sites.

2. Carry out 5 tasks for each of the portals assessed.

3. Write down the result of each task, the steps followed and the amount of time needed.

4. Note any aborted tasks due to accessibility difficulties encountered.

5. Answer a satisfaction questionnaire containing 10 multiple choice questions (4 options per question), providing reasons for each answer.

The results obtained were tallied to extract comparable and measurable conclusions in percentage terms.

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Once the tests were turned in, a meeting was held with the participating users to reach a consensus and gather general impressions regarding the accessibility and usability of the portals assessed.

Table 3 shows the results obtained in terms of success, error and aborted attempts for the 6 users and the 5 tasks they were instructed to carry out on the 15 portals included in the sample.

**Table 3.
Success, error and aborted attempts in the user assessment tasks expressed in absolute terms and percentages of the total.**

Portal	Success	Error	Task aborted
El Mundo	26	3	1
Cinco Días	23	1	6
ABC	22	3	5
Expansión	22	5	3
Periodista Digital	21	3	6
Marca	21	3	6
As	21	5	4
Sport	21	3	6
La Verdad	20	6	4
20 Minutos	20	3	7
La Gaceta	20	3	7
El Confidencial	19	2	9
El País	18	6	6
Libertad Digital	18	3	9
La Vanguardia	16	2	12
Total:	308	51	91
%	68.44	11.33	20.22

Of the 450 tasks attempted, 308 were successfully concluded (68.44%) while 51 errors were registered (11.33%). The 91 aborted tasks (20.22%) were due to service accessibility or usability problems.

The following relevant information was gleaned from the results:

1. In comparison with previous studies conducted by this Info-accessibility Observatory, user test success, error and aborted task results in respect of digital newspapers are within the average range, although we should point out that error percentage was low and the aborted task percentage high.

2. The portal with the best results in terms of task success was the *El Mundo* newspaper (26 of the 30 tasks were successfully carried out). This portal also has one of the lowest number of errors committed per user when carrying out the tasks (3 or 10%) and has the lowest number of aborted attempts (only one of the 30 tasks undertaken by the users ended up being aborted).

3. In the case of the *Cinco Días* portal, users only committed one error in the 30 assigned tasks making it the best in this aspect. The number of successes was also good (23 or 76.66%) but 6 of the tasks had to be aborted meaning that 20% of the tasks could not be concluded by the users.

4. On the negative side, the fewest number of successes was obtained by *La Vanguardia* (16 of the 30 assigned tasks) and 12 had to be aborted (the

highest number of all of the portals analysed) and 2 errors were committed by the users when carrying out the 30 tests putting this portal in last place in this section of the evaluation.

5. The portals giving rise to the greatest number of errors were *El País* and *La Verdad*, both registering 6 errors out of the 30 tasks. In the case of *El País*, this figure is accompanied by 6 aborted attempts and only 18 successes making it the second worst of the portals analysed. In the case of *La Verdad*, the figures are a bit more discrete with 20 tasks successfully completed and 4 cases in which users had to abort their attempts.

These data lead to the overall conclusion that Spanish digital newspapers need to substantially improve the design of their Web portals if they want to make their information and services available to certain users. It is fair to say that **the public represented by this sample of users met with obstacles**, either due to error or aborted attempts, **in 3 out of each 10 tasks assigned** when consulting digital newspapers.

**Table 4.
User satisfaction results expressed as percentages.**

Portal	%
El Mundo	76.11
Expansión	75.00
La Verdad	69.44
As	69.44
20 Minutos	66.67
Sport	65.56
Marca	64.44
La Gaceta	64.44
Cinco Días	61.11
Libertad Digital	57.78
El País	57.22
El Confidencial	55.00
ABC	54.44
Periodista Digital	48.89
La Vanguardia	43.33
Average:	**61.93**

The satisfaction results obtained by each portal from the "ad hoc" questionnaire that each user filled out after carrying out the assigned tasks were expressed in percentage terms and set out in table 4 (5 of the participants had some functional limitation and one did not).

The following is the most relevant information gleaned from these data:

1. The overall average of the user satisfaction test was 61.93%, the highest obtained to date in the studies conducted by this Observatory.

2. The portal receiving the highest user satisfaction rating was *El Mundo* (76.11%) followed very closely by *Expansión* (75%). These portals are not among the best in the technical analysis reaching percentages of only 14.89% and 11.11% respectively.

3. The percentage gap between the 13 portals receiving the highest user rating is less than 22 percentage points indicating tightly-clustered ranking.

4. Only two of the portals, *La Vanguardia* (43.33%) and *Periodista Digital* (48.89%) are below the 50% threshold in terms of user satisfaction when carrying out the tests.

5. In addition to the aforementioned *El Mundo* and *Expansión*, the digital newspapers rated above the mean (61.93%) are *La Verdad* and *As* (both with 69.44%), *20 Minutos* (66.67%), *Sport* (65.56%) and *Marca* and *La Gaceta de los Negocios* (both with 64.44%).

6. The portal with the highest score in the technical section, *Marca*, is in the middle of the satisfaction table with a score of 64.44%.

7. The rest of the portals are all below the mean but within this sub-group 13 portals received satisfaction assessments above 50%: *Cinco Días* (61.11%), *Libertad Digital* (57.78%), *El País* (57.22%), *El Confidencial* (55%) and *ABC* (54.44%).
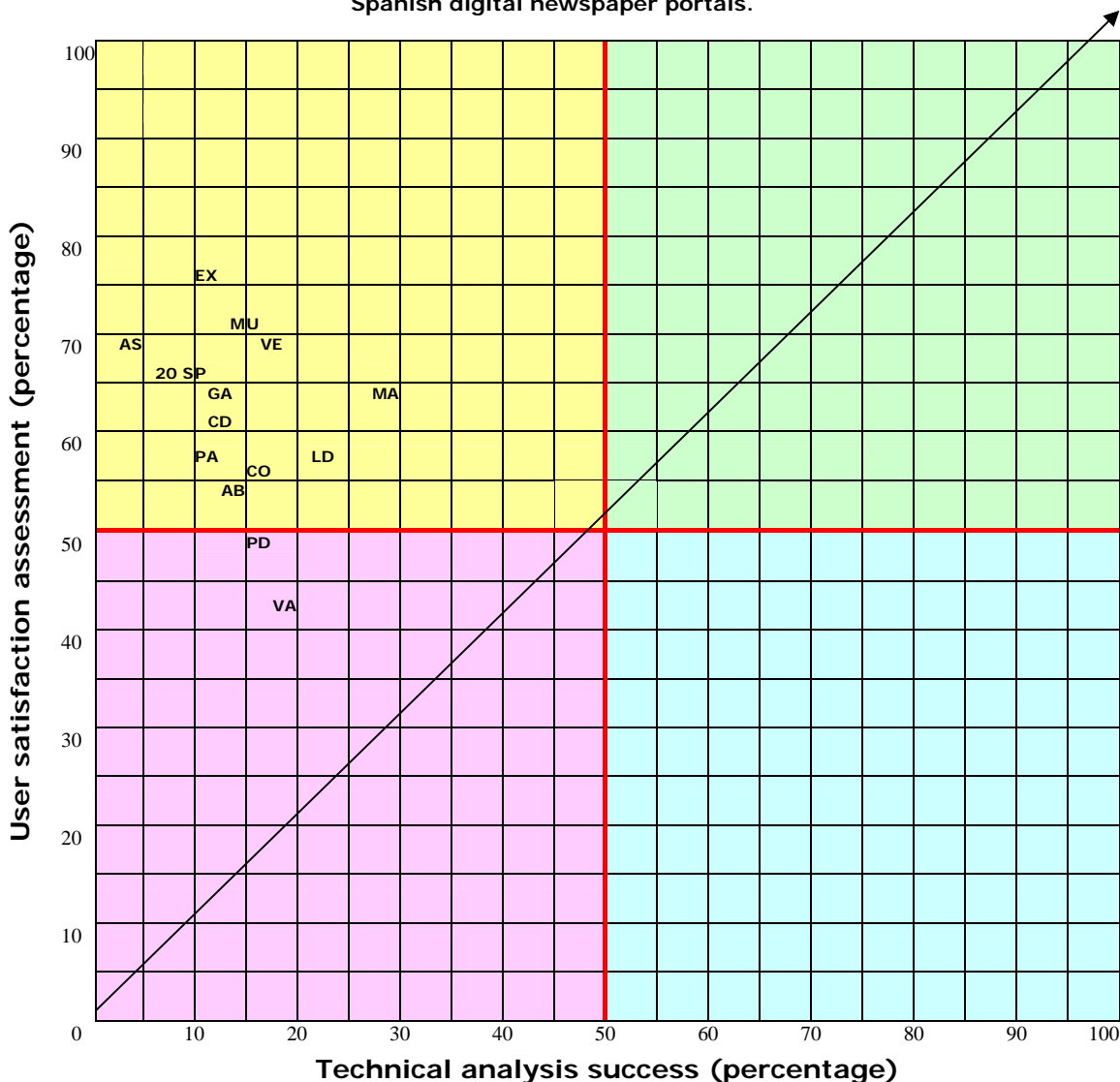
4.3 Combined assessment.

Graph 1 is a global presentation of the combined results of the technical analysis and users' assessment.

The following points should be considered when interpreting the graph:

1. The vertical axis represents the results of the user satisfaction assessment expressed in percentage terms.

2. The horizontal axis represents the results of the technical analysis expressed in percentage terms.

3. The graph is in map form with four quadrants reflecting accessibility (technical analysis) and usability (according to the user satisfaction indicator), where:

   a. the top left quadrant contains the most useable sites in accordance with user experience but are not very accessible according to the criteria of our technical analysis;

   b. the top right quadrant contains the most useable and most accessible sites;

   c. the lower left quadrant contains the least useable and least accessible sites;

   d. the lower right quadrant contains the least useable and most accessible sites.

4. The diagonal line drawn from the lower left corner to the upper right corner represents the points on the graph where both assessments would be equally useable and accessible. Points above that diagonal are considered more useable (judging from the experience of the users) than accessible (technical analysis based on our criteria). The opposite would be true for points below the diagonal, i.e. more accessible than useable

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Graph 1. Combined results of the technical analysis and the users' assessment in the study of Spanish digital newspaper portals.

Legend: This graph represents the combined results of the technical analysis and the user assessment in a quadrant table:

- Upper left (yellow): technical analysis below 50% and user assessment above 50%.
- Upper right (green): technical analysis and user assessment above 50%.
- Lower left (red): technical analysis and user assessment below 50%.
- Lower right (blue) technical analysis above 50% and user assessment below 50%.

The following abbreviations were used for each of the portals analysed. In parenthesis is the percentage obtained in the technical analysis followed by the user assessment (separated by a slash):

AB: ABC (14.89/54.44).
AS: As (4.00/69.44).
CD: Cinco Días (12.24/61.11).
CO: El Confidencial (16.33/55.00).
EX: Expansión (11.11/75.00).
GA: La Gaceta de los Negocios (12.50/64.44).
LD: Libertad Digital (23.40/57.78).
MA: Marca (28.57/64.44).
MU: El Mundo (14.89/76.11).
PA: El País (11.76/57.22).
PD: Periodista Digital (16.33/48.89).
SP: Sport (10.00/65.56).
VA: La Vanguardia (18.75/43.33).
VE: La Verdad (16.67/69.44).

20: 20 Minutos (7.14/66.67).

Interpretation of the data from Graph 1 leads to the following conclusions:

- o With the exception of *La Vanguardia* and *Periodista Digital*, all of the portals in our sample are situated in the upper left quadrant meaning that they are useable but not very accessible.

- o The portals outside of this quadrant, *La Vanguardia* and *Periodista Digital*, are situated very close to the upper limit of the lower left quadrant for portals which are not very useable or accessible and are therefore not far from the general trend.

- o All of the portals analysed are very far from and above the diagonal line dividing the graph in two and it would therefore be fair to say (as is typically the case in all of the studies conducted by this Observatory) that the user experience is more satisfactory than the success of the portals in the technical analysis based on accessibility criteria.

- o This study does not reveal any particularly salient result and the concentration of results in one part of the graph indicates that a general trend is followed by all of the digital press portals showing acceptable user experience but poor application of accessibility criteria.

5. Conclusions.

The purpose of the studies conducted by Discapnet's Info-accessibility Observatory is to show the current state of Web content accessibility. They also seek to provide information which can be used to improve these sites and tailor them more closely to the needs of the users of this virtual service. In this connection, this section contains the conclusions which we consider to be the most important and, although objectivity compels us to portray a reality which is not very bright, they suggest guidelines which could help to improve the sector.

1. Of the studies conducted by this Observatory, the portals of Spanish digital newspapers obtained one of the poorest results in terms of compliance with accessibility criteria. This contrasts with the best result in terms of user satisfaction when browsing these portals. This could be due to the familiarity which the users who participated in the test admitted to have with these digital media.

2. A general trend has been detected towards results which point towards acceptably useable but poorly accessible sites. It is, therefore, of the essence carry out a thorough review of the accessibility characteristics applied to the templates used by digital newspapers and a degree of improvement in usability aspects which would turn these portals into accessible media for all.

3. In this case we cannot speak of examples to be followed when it comes to accessibility criteria given that the best result obtained (*Marca* with a 28.57% success rating based on those criteria) is just not good enough. Practically all of them were in the lowest quartile, suggesting a general recommendation to review accessibility characteristics.

4. As for user experience, based on the user satisfaction parameters, *El Mundo* (76.11%) and *Expansión* (75%) could be considered examples to follow but with possible room for improvement by applying the aforementioned accessibility criteria.

5. It was discouraging to find that no favourable result was found in any of the pages evaluated in the case of 4 of the 12 accessibility criteria checked. Aspects such as alternative text in the case of images (indispensable for the comprehension of this content for blind users) or forms (providing the expected interactivity for on-line media) were not designed, in any of the pages checked, bearing accessibility criteria in mind. The poorly designed frames and scripts characterising all of the pages examined would certainly spell obstacles, sometimes insurmountable, for a large number of users who access Spanish digital newspaper content with special browsing tools.

6. A further four accessibility criteria failed to reach the 10% success rate in the technical analysis. We would draw attention to the fact that code validation to formal grammars (HTML and CSS) only achieved a 1.35% success rate despite the fact that there are automatic tools able to furnish us with a detailed analysis and the possibility to correct this aspect with minimal effort. The correct application of style sheets so that they do not cause loss of content or incorrect location, the suitable use of links (especially when situated on images) or the application of headers to structure contents, make for better browsing for all and are aspects which have been addressed by template developers and content managers of Spanish digital press portals.

7. Turning to the results obtained in carrying out the tasks proposed to users, we can say that nearly one third of the actions required to access digital information which are specific to the characteristics of our users met with difficulties leading to errors or aborted attempts in searching for the information they were requested to seek.

8. The permanent renewal of content on these portals calls for paying closer attention to the design of the templates used and greater care taken by the content manager in maintaining them. An effort in this sense would greatly improve results and possibly increase the number of persons seeking information through this media.

We would like to note the existence of a specific version entitled "*Discapacitados"* (disabled) whose purpose is to make information available to those with functional limitations. This is a noble gesture but we feel it is insufficient. First of all, our users were wrong in believing that under that heading they would gain access to a specific version more adapted to their needs when actually there was simply information on disabilities. Furthermore, access to the said information requires a registration process using a simple form but with some labelling problems. This leads to two problems: it forces the user to first of all browse a home page which has accessibility problems and requires him/her to fill out a form (where other problems may be found), unnecessarily prolonging the consultation process. Assuming that content is updated in this specific version simultaneously with that of the general version, we continue to insist that it is not appropriate to offer a large group of potential visitors a port of access different from that offered to all other users. We suggest that the efforts made by this digital newspaper, praiseworthy as they are, would be better focused on developing a single version which is more accessible for all.

6. Final Reflection.

Web-based information is accessed by citizens with increasing frequency. It offers conditions that other media simply cannot provide thanks to its permanent update and the possibility of access from any location where there is an Internet

connection. Digital newspaper users should be able to access the information they need in a swift and simple manner in keeping with that special characteristic of speed and selectivity which this media allegedly offers as added value vis-à-vis the rest. Enhancement of usability is therefore essential if the established aim is to be achieved: offer visitors updated information and allow them to quickly and easily select the content they are interested in. We should not forget that a useable site with some obstacles in its design stops being useable for a large group of users who, given their specific functional conditions or the type of browsing equipment used, can only access information if accessibility criteria are respected and applied to Web content in accordance with standardised rules.

In the case of individuals with functional limitations, the benefit gained from being able to operate using their own means without having to handle media which is difficult for them is greater than for the general population. The potential customer base comprised by this social group is by no means insignificant, and from a commercial point of view it would be interesting to gain their loyalty through the proper use of Web design techniques to make portals accessible.

In this study we encountered important technical design problems in the majority of the portals. Users found their experience in the use of the portals included in the sample to be relatively satisfactory and awarded the highest scores to date in our studies. But this satisfaction is of little worth if a third of the actions they undertake cannot be successfully concluded due to accessibility problems.

Considering that a high percentage of people would benefit from the application of Web page accessibility criteria because that would help them overcome the barriers they encounter in printed material, it would be very helpful if those responsible for these portals took heed of this fact and fostered the application of these criteria which would lead to not only an improvement in service quality but also to an increase in the number of readers and hence, commercial profits.

By the year 2012, all private initiative Web portals must be designed for accessibility. It is therefore no longer enough to simply note that Web barriers exist for some users; it is time to take the necessary steps to eliminate them. The best way of accomplishing this task is to first of all be aware of applicable technical criteria and provide suitable training for those who design, develop and maintain Web content.