

Usability Report for *Arquivo.pt* (Janus Release)

FCT-FCCN: Arquivo.pt

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1 Summary

Arquivo.pt preserves pages from the Web, archived since 1996, and provides a public search service over this information. It continues to be developed, therefore it is fundamental to assure the quality of the provided service. We launched a new user interface aimed to improve the navigation across archived versions of a Web page, together with a set of new features such as sharing the archived pages on social media, and taking a screenshot of an archived Web page. We conducted 6 usability sessions with users, who executed a total of 7 different tasks. The obtained results showed an effectiveness average rate of 91% and 80% satisfaction, which shows that the new interface has been well accepted by the users. We conclude that the new interface can be effectively used. Still, we identified issues that will define future developments.

2 Introduction

2.1 Context

The Arquivo.pt is a research infrastructure that enables access to preserved Web pages from the past. A new version of Arquivo.pt was launched in May 2016, with a new user interface (ReplayBar) that enhances the navigation between archived versions of a Web page (Janus Release []). It also allows taking screenshots, printing the archived Web pages, and sharing them on Facebook, Twitter or by email.

Figures 1, 2 and 3, present the new ReplayBar, for Desktops, tablets and mobile phones, respectively. Figures 4 and 5 illustrate the full-text search and Table of versions UIs.

This report details the results of the usability tests performed for the new version of Arquivo.pt

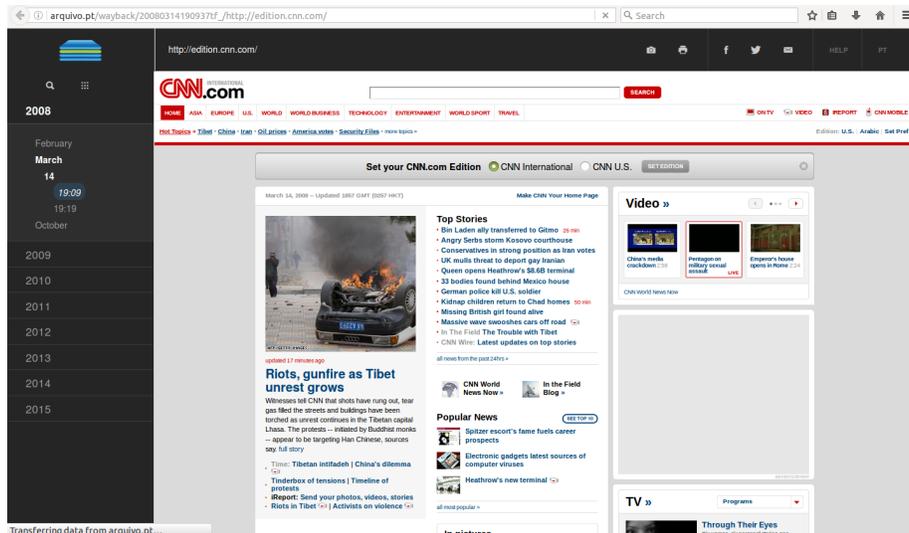


Figure 1: Desktop version of the ReplayBar User Interface of Arquivo.pt

2.2 Methodology

The methodology used during usability testing was based on the observation and registration of the data obtained through each session with a user who performed the tasks in the new version of Arquivo.pt Website. Each session was conducted by a facilitator of the test and registered by an annotator.

A pre test was first conducted, where some issues on the task scripts were rectified. For instance, some tasks that were too restrictive and one of the tasks was rewritten because it was not clear to the user what it was intended.

Each session began with an explanation of its purpose by the facilitator, who also asked the participant to perform the tasks in the most natural way possible, and to think a loud. The users were asked to use their favorite device (e.g. tablet, smartphone, laptop) to prevent the occurrence of difficulties due to the user being unfamiliar with the device, and also to maximize the detection of unforeseen compatibility issues. Then, it was delivered to the user the list of tasks to accomplish. The observer was noting the difficulties and thoughts of the user. At the end of each session, the user was asked to fill out an anonymous satisfaction questionnaire adapted from the *IBM Computer Usability Satisfaction Questionnaires* [Lew95]. Finally Arquivo.pt promotional materials were delivered, as well as a gratification for the participation.

The usability sessions occurred between 20 June and 12 July 2016, at the facilities of FCCN in Lisbon. A total of 6 usability sessions were held.

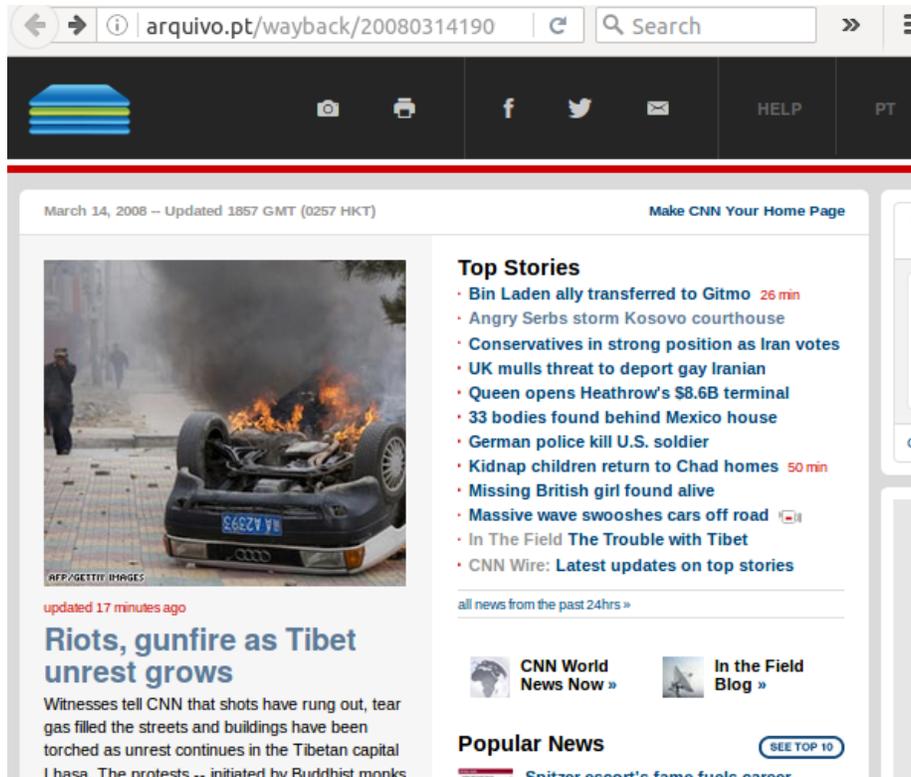


Figure 2: Tablet version of the ReplayBar User Interface of Arquivo.pt

3 Tasks and metrics used

3.1 List of Tasks

A friend of yours said that in Arquivo.pt you could find old pages of the Internet. You remembered that your school or university already has a Website for many years.

1. Try to find the Website of the school/university where you studied at Arquivo.pt.
2. Check if there is an archived version of the site when you attended the school/university. Write the date of this version.
3. Write the date of the earliest archived version of the Website of your school/university.
4. Share this version with your former colleagues.
5. Print an archived Web page of your choice to show at home.

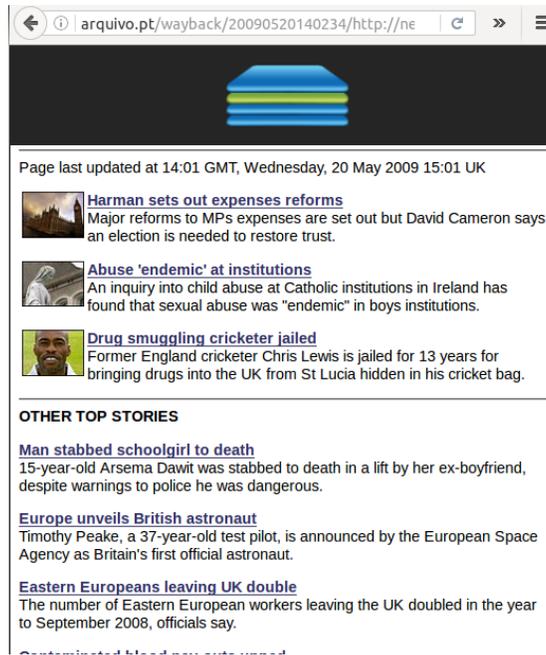


Figure 3: Mobile version of the ReplayBar User Interface of Arquivo.pt

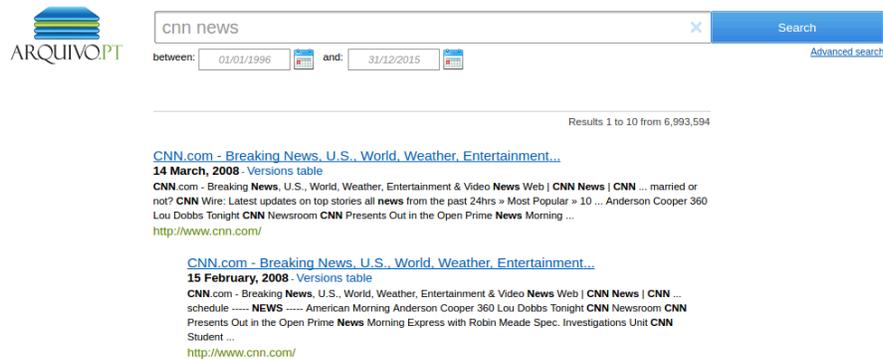


Figure 4: Full-text Search UI of Arquivo.pt

6. You were asked to write an article about your old school/ university. Save as an image the home page of that site, to be included in your article.
7. Use Arquivo.pt freely and search for a matter of your interest.

4.1.2 Task 2: Check if there is an archived version of the site when you attended the school/university. Write the date of this version.

Result: 2
No difficulties

4.1.3 Task 3: Write the date of the earliest archived version of the Website of your school/university

Result: 2
No difficulties

4.1.4 Task 4: Share this version with your former colleagues.

Result: 2
No difficulties (Facebook share)

4.1.5 Task 5: Print an archived Web page of your choice to show at home.

Result: 2
No difficulties, but didn't physically print.

4.1.6 Task 6: You were asked to write an article about your old school/ university. Save as an image the home page of that site, to be included in your article.

Result: 1
Initially did not realize that the download of the image had already been done because the user had the plugin "Diggo" to take screenshots installed in the browser.

4.1.7 Task 7: Use Arquivo.pt freely and search for a matter of your interest.

Result: 2
No difficulties.

4.1.8 General notes:

- Difficulties in finding the Table of Versions in full-text searches;
- Identified that a click on the logo goes to the homepage;
- Did not associate the logo with the table of versions in the replay page.

4.1.9 Main obstacles identified:

- Meaning of the magnifier;
- Did not see the “Table of versions” link;
- Location of the downloaded screenshot.

4.2 Session 2: Mobile Iphone 6 plus + Safari Web Browser

Date: 21/6/2016

4.2.1 Task 1: Try to find the Website of the school/university where you studied at Arquivo.pt.

Result: 1

Some difficulty listing archived versions. Attempts with several different universities.

4.2.2 Task 2: Check if there is an archived version of the site when you attended the school/university. Write the date of this version.

Result: 2

No difficulties

4.2.3 Task 3: Write the date of the earliest archived version of the Website of your school/university

Result: 2

No difficulties

4.2.4 Task 4: Share this version with your former colleagues.

Result: 2

No difficulties (partilha email)

4.2.5 Task 5: Print an archived Web page of your choice to show at home.

Result: 2

Opened the print assistant, wasn't able to see if the content was ok in the pre-visualization.

4.2.6 Task 6: You were asked to write an article about your old school/ university. Save as an image the home page of that site, to be included in your article.

Result: 1

Was able to perform the task, however didn't realize that the image was saved as a .png.

4.2.7 Task 7: Use Arquivo.pt freely and search for a matter of your interest.

Result: 2

No difficulties.

4.2.8 General notes:

- Forced to use horizontal on mobile (own words);
- Wasn't able to scroll down the replay websites;
- Problems with URL search on mobile: letras.up.pt (maybe network issues)

4.2.9 Main obstacles identified:

- Scroll-down not working in iOS;
- Location of the generated screenshot.

4.3 Session 3: Android Tablet + Chrome Web Browser

Date: 07/7/2016

4.3.1 Task 1: Try to find the Website of the school/university where you studied at Arquivo.pt.

Result: 2

No difficulties

4.3.2 Task 2: Check if there is an archived version of the site when you attended the school/university. Write the date of this version.

Result: 2

Was able to perform the task, however presented difficulties understanding how to navigate between archived versions. Was able to find an archived version using advanced search + sorting by date.

Difficulty clicking on links, because they are too small.

4.3.3 Task 3: Write the date of the earliest archived version of the Website of your school/university

Result: 2

Difficulties understanding the behaviour of the datepickers “do I have to click on OK?!”.
Difficulties visualizing the content “this is too small for a Tablet”. Did not see the link “Table of Versions”.

4.3.4 Task 4: Share this version with your former colleagues.

Result: 2

No difficulties (share on Facebook and email)

4.3.5 Task 5: Print an archived Web page of your choice to show at home.

Result: 2

No difficulties but didn't physically print.

4.3.6 Task 6: You were asked to write an article about your old school/ university. Save as an image the home page of that site, to be included in your article.

Result: 2

No difficulties. However, the image file was not on the “screenshots” folder, what originated confusion about its location.

4.3.7 Task 7: Use Arquivo.pt freely and search for a matter of your interest.

Result: 2

4.3.8 General notes:

- Magnifying icon with different functionality expected. The user expected it to search in that particular archived version, instead of a new search. “Is this to search on this day? ”. Magnifying icon and arquivo logo have redundant functions;
- X button in the search input of arquivo.pt is not deleting the search text as it would be expected;
- Bug in the advanced search: search by address is not case sensitive in the hostname.

4.3.9 Main obstacles identified:

- Location of the generated screenshot file;
- Meaning of the magnifying icon;
- Size of the contents in the tablet;
- Understanding the behaviour of the datepicker;
- Different results with and without CAPS in “site:” parameter in the advanced search;
- X button in the input search of arquivo.pt not clearing text as expected;
- Did not notice “Table of versions” option.

4.4 Session 4: Laptop with Windows 10 + Chrome Web Browser

Date: 12/7/2016

4.4.1 Task 1: Try to find the Website of the school/university where you studied at Arquivo.pt.

Result: 1

Searched for “Escola de belas artes da Universidade do Porto”, and for “Universidade de Belas Artes do Porto”. Hoped to obtain a version of 1991. Never clicked on the link of the university site (even with that result being one of the first ones presented).

Searched for the user’s name + the university. Ended up searching for the university where the user lectured, that belongs to the University of Lisbon. Entered in a page in the University of Lisbon.

Initially did not use the datepickers. When used the datepickers did not click on the Ok button.

Felt “It is slow”

4.4.2 Task 2: Check if there is an archived version of the site when you attended the school/university. Write the date of this version.

Result: 2

No difficulties.

4.4.3 Task 3: Write the date of the earliest archived version of the Website of your school/university

Result: 2

No difficulties.

4.4.4 Task 4: Share this version with your former colleagues.

Result: 2

No difficulties (partilha email)

4.4.5 Task 5: Print an archived Web page of your choice to show at home.

Result: 2

No difficulties but didn't physically print.

4.4.6 Task 6: You were asked to write an article about your old school/ university. Save as an image the home page of that site, to be included in your article.

Result: 0

Did not finish the task. The user is used to take screenshots using keyboard shortcut, did not realize the available option.

4.4.7 Task 7: Use Arquivo.pt freely and search for a matter of your interest.

Result: 1

Searched for "Independente" (an old journal). Could not find what the user wanted, although the results provided some additional information on the old journal.

4.4.8 General notes:

- Several difficulties searching for the University and understanding how to search for the history of versions of a given site (could not understand how to navigate using the Table of Versions option).
- Did not see/use option "Search in other archives"
- Suggested changing arquivo.pt logo.
- Extracted the original URL from the browser url. Wasn't able to see the URL in the ReplayBar.

4.4.9 Main obstacles identified:

- Perception of the screenshot function;
- Perception of the datepicker behaviour;
- Felt it was slow;
- Did not see/use the option "Search in other archives";

- Low contrast in the replayBar page in a laptop with low brightness;
- Discovering the original URL.

4.5 Session 5: Laptop with MacOS 10 + Chrome Web Browser

Date: 12/7/2016

4.5.1 Task 1: Try to find the Website of the school/university where you studied at Arquivo.pt.

Result: 2

Searched for icsp (did not like to have to insert 2 dates, wanted to search around a date instead).

Found the archived page (only one version, so there was a change in the next tasks to search for the users first workplace).

Did not click on OK in datepicker.

Did not see/use “Search other archives”

4.5.2 Task 2: Check if there is an archived version of the site when you attended the school/university. Write the date of this version.

Result: 1

Searched for renascença between 96 and 99, found several related web pages but not the official one. After suggesting that it was possible to do URL searches in arquivo.pt, was able to finish the task without difficulties.

4.5.3 Task 3: Write the date of the earliest archived version of the Website of your school/university

Result: 2

No difficulties

Didn’t see “Table of versions” even after several searches.

4.5.4 Task 4: Share this version with your former colleagues.

Result: 2

No difficulties (share on facebook)

4.5.5 Task 5: Print an archived Web page of your choice to show at home.

Result: 2

No difficulties, did not physically print.

Low contrast “I can’t see well the icons”.

4.5.6 Task 6: You were asked to write an article about your old school/ university. Save as an image the home page of that site, to be included in your article.

Result: 2

No difficulties.

4.5.7 Task 7: Use Arquivo.pt freely and search for a matter of your interest.

Result: 2

Searched for “Chalana”, for “Federação Portuguesa de Futebol”.

Didn’t see “Table of Versions” option even after several searches.

Didn’t see tip to insert URL in the input box in order to see the history of an archived Website.

4.5.8 Main obstacles identified:

- Problems in finding the table of versions in the text searches (after discovering found extremely useful to view all archived versions);
- Problems understanding it was possible to search for URL;
- The contrast in the replay page was low with low brightness;
- Behavior of the datepickers;
- Did not use/see “Search other archives” option.

4.6 Session 6: Laptop with Windows 10 + Chrome Web browser

Date: 12/7/2016

4.6.1 Task 1: Try to find the Website of the school/university where you studied at Arquivo.pt.

Result: 2

No difficulties.

The archived dates did not appear at first in the left side menu in the replay bar (due to network issues?).

Meaning of the titles “Moved permanently”.

4.6.2 Task 2: Check if there is an archived version of the site when you attended the school/university. Write the date of this version.

Result: 2

No difficulties.

Had to refresh the page to see it correctly.

4.6.3 Task 3: Write the date of the earliest archived version of the Website of your school/university

Result: 2

No difficulties.

4.6.4 Task 4: Share this version with your former colleagues.

Result: 2

No difficulties (shared by email).

4.6.5 Task 5: Print an archived Web page of your choice to show at home.

Result: 2

No difficulties, did not physically print.

Clicked multiple times in the icon “it is missing a loading icon”.

4.6.6 Task 6: You were asked to write an article about your old school/ university. Save as an image the home page of that site, to be included in your article.

Result: 2

No difficulties.

“Should ask where I want to store the image?”

4.6.7 Session: Use Arquivo.pt freely and search for a matter of your interest.

Result: 2

No difficulties.

Did not see the option “Search other archives”. Suggested a visible button instead of a link with small text.

4.6.8 Main obstacles identified:

- The left menu did not show the archived dates at first (due to slow network?);
- Meaning of the magnifying icon;
- Had to Refresh the page;
- Lack of feedback after clicking the print option;
- Location of the screenshot file;
- Did not see/use the option “Search other Archives”.

5 Satisfaction Results Obtained From the Questionnaire

Each usability session ended with the completion of a satisfaction questionnaire, where it was asked to each user to assess the degree of agreement (on a scale of 1 to 7, being 1 equivalent to strongly disagree and 7 to strongly agree) with the following statements:

1. It was easy to find the information I needed.
2. I was able to complete the tasks and scenarios quickly.
3. The information provided for the system was easy to understand.
4. The appearance is nice and appealing.
5. The organization of information on the system screens was clear.
6. This system has all the functions and capabilities I expect it to have.
7. It was easy to identify the date of the preserved pages.
8. Overall I liked to use Arquivo.pt.

6 Summary of Results

Table 1 contains the summary of the results according to the defined effectiveness metrics. We can conclude that the users were able to browse and perform the tasks defined with an effectiveness of 91%. However, we have noticed a number of possible improvements to be validated, that are presented in the last chapter.

Table 2 summarizes the results of the satisfaction surveys. The overall satisfaction was 80%. The statements to which users most agreed were “The information provided for the system was easy to understand” (86%), and “ This system has all the functions and capabilities I expect it to have” (86%). The statement “The organization of information on the system screens was clear” was the one with a smaller agreement percentage (69%).

7 Recommendations

Based on the obtained results we derived the following list of changes to be validated during the development of the next release of Arquivo.pt:

- Use white in the texts of the ReplayBar to increase contrast;
- Remove the magnifier from the ReplayBar page, adjusting the graphics for the icon of the table of versions;

Table 1: Results of the Usability Sessions

Task	Effectiveness %
1. Find the Website of the school/university where you studied	83%
2. (...) archived version when you attended the school/university	92%
3. (...) earliest archived version of your school/university	100%
4. Share this version with your former colleagues.	100%
5. Print an archived Web page of your choice to show at home.	100%
6. (...) Save as an image the home page of that site (...)	67%
7. (...) search for a matter of your interest.	92%
Effectiveness total	91%

Table 2: Results of the Satisfaction Questionnaire

Statement	Agreement %
1. It was easy to find the information I needed.	83%
2. I was able to complete the tasks and scenarios quickly.	74%
3. The information provided for the system was easy to understand.	86%
4. The appearance is nice and appealing.	76%
5. The organization of information on the system screens was clear.	69%
6. This system has all the functions and capabilities I expect it to have.	86%
7. It was easy to identify the date of the preserved pages.	81%
8. Overall I liked to use arquivo.pt.	83%
General Satisfaction	80%

- Increase text size of the hints;
- Show progress indicator after click actions;
- Open box to select the location of the screenshot file to be downloaded;
- Enlarge text option “Search in other archives” or create a button;
- Assume date entered in the datepicker if the user clicks outside the datepicker before clicking the search (the implementation may not be trivial).
- Put the complete original URL of the ReplayBar with link format in order to be easier to access the current version and/or copy the full original URL;
- Remove http:// in the URL displayed in the ReplayBar;
- Resize the URL ReplayBar based on research data.
- Change link “Table of versions” to “Other Dates” on the serp UI and use the same size, source and date style;

8 Conclusions

Throughout the usability sessions the users provided precious feedback, which resulted in a list of recommendations that will be validated in the next release of Arquivo.pt.

It was very important to allow users to perform the usability tasks with their own devices, which not only enabled testing a wider number of Web Browsers and Operating Systems, but also made the users more comfortable during the tests, and avoided potential issues with users being unfamiliar with the technology used.

The definition of broad tasks for the usability sessions was fundamental to (i) avoid having manipulated answers; (ii) observe unexpected behaviour; and (iii) understand the users difficulties.

The overall results showed that the users were able to perform the tasks with an effectiveness of 91% and an overall satisfaction of 80%.

References

- [Lew95] James R. Lewis. “IBM Computer Usability Satisfaction Questionnaires: Psychometric Evaluation and Instructions for Use”. In: *Int. J. Hum.-Comput. Interact.* 7.1 (Jan. 1995), pp. 57–78. ISSN: 1044-7318. DOI: 10.1080/10447319509526110. URL: <http://dx.doi.org/10.1080/10447319509526110>.
- [] *Arquivo.pt - Janus Release notes on Github*. [Online; accessed 11-August-2016]. URL: <https://github.com/arquivo/pwa-technologies/releases/tag/Janus>.