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Exploratory study of tablet publication models: visual communications and usability systems

Estudio exploratorio de los modelos de publicación de tabletas: los sistemas de comunicación visual y de usabilidad

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ABSTRACT: The rapid spread of the recently launched tablets in the information market and questions such as how to make the most out of them make it necessary to review the mechanisms of digital publications in these new platforms. This article analyses the methods used by some of the most important publications present in the new devices and aims to provide a first taxonomy of their strategies of usability, navigation and visual communication.

RESUMEN: *La rápida expansión de las tabletas ha lanzado recientemente en el mercado de la información cuestiones tales como la forma de sacar el máximo provecho de ellas y hacen necesario revisar los mecanismos de las publicaciones digitales en estas nuevas plataformas. Este artículo analiza los métodos utilizados por algunas de las publicaciones más importantes presentes en los nuevos dispositivos y tiene como objetivo proporcionar una primera taxonomía de sus estrategias de usabilidad, la navegación y la comunicación visual.*

Keywords: Design, tablets, visual communication, navigation, publications, usability.

Palabras clave: *diseño, tabletas, comunicación visual, navegación, publicaciones, uso.*

1. Introduction: from Internet media to tablets

Aware that the Internet and new media are continuously re-formulating the ways of accessing, processing and disseminating information, the media have been, since the digital beginning, a pioneer and a tremendously dynamic industry, which incorporates new technologies for professional work.

Already by 2003, for example, the OPTI Foundation (Observatory for Industrial and Technological Analysis), with the participation of the EOI Foundation (Business School Foundation), warned in its research *The future of media in the impact of new technologies*, of the long-term implementation (from 2007 to 2010), "a new media generation based on access to broadband, both through a fixed line and mobile devices"¹. According to the study, the economic aspect is one of the major obstacles to this forecast. Also, in October 2005, Bill Gates, Microsoft's Chairman, told *EFE Agency* that news companies have had increasingly more competition from online media, and he dared to predict that in five years' time, "40-50 per cent of people will read the news online"². At that time, he also pointed out more worrying limitations of the digital format, "more adapted to encyclopaedias, teaching material or professional documents than to novels".

Today, the race for the speed and immediacy of information consumption is speeding up the use of new digital media as a space for reading the news. It is true that, with the undeniable benefits of these new means (hyperconnectivity, accessibility or better economic conditions, in some cases) there are some drawbacks which the media seemed

¹ Observatorio de Perspectiva Tecnológica Industrial (OPTI), *El futuro de los medios de Comunicación ante el impacto de las Nuevas Tecnologías* [online], http://www.opti.org/publicaciones/pdfs/medios_comu.pdf [consulted: September 13, 2009].

² EFE, *Bill Gates augura un futuro de prensa digital* [online], *Emol*, October 26, 2005, <http://www.emol.com/noticias/internacional/2005/10/26/199560/bill-gates-augura-un-futuro-de-prensa-digital.html> [consulted: September 9, 2009].

to be unaware of, such as technique, context or routines, nature and preferences of users, whose rejection may represent serious obstacles to their consolidation, at least in the short term.

It's in this context when, with *Apple* as the leader of the new generation of developers and digital publishers, the unstoppable phenomenon of the *apps* (native apps created for new devices) were born. With the appearance of the *iPhone* and, especially, the first version of *iPad* in April 2010 (subsequently replaced with various models inspired in the same philosophy), the challenge of adapting the information strategies to its numerous advantages (ergonomics, multimedia) started to be considered, mainly relying on their successful sales figures (more than half a million units purchased in Spain only the first day) and its immense potential for the future. Since then, several publications have released their applications for this device, either concurrently with their printed editions (*Wired* or *Men's Health* are some of the pioneers), either exclusively for tablets (the case of the recently disappeared *The Daily* or the *Astronaut Magazine*), or with a format definitely innovative enough to keep them off paper (the *iPad apps* for *Marvel Comics*, *Esquire* or Al Gore's successful initiative *Our Choice*).

Regarding the technique, its evolution has allowed us today to read through computer screens and tablets more comfortably and quickly. On the one hand, computer screens have improved and, on the other, tremendously innovative mobile devices have entered the market over the last two years: in addition to *iPad 3*, the *BlackBerry Playbook* or *Android*-based ones, such as the *Samsung Galaxy* or the *Sony Xperia*, are just some examples that threaten the hegemony of the Apple giant. Many Spanish newspapers and magazines (*El País*, *El Mundo*) have created special versions of their online editions for these devices, using a dual strategy. Basically, there are, on the one hand, native applications adapted to the performance and interaction characteristics depending on the type of tablet; on the other, the traditional paper product is available in PDF format for screens, taking advantage of the versatility and ergonomics in the viewing of pages actually intended for another size. Some examples of this latter case are *Orbyt* (launched by *UNEDISA*) or *Kiosko y más* (released, among others, by the *PRISA* group).

The revolution of the tablets and their promising future is not limited by these data. Companies like *WoodWing* and, above all, *Adobe* (leader in software production), have made very significant strides. These companies have included in some of the products from the 5.5 version (*Indesign* editing tool, very especially) various resources to facilitate the construction of publications specifically thought for this media, thus demonstrating their strong commitment to them.

2. The interface concept in traditional media and new devices

In spite of the time lapsed since publication, the adaptation of Zaccagnini's theories³ about the ergonomic possibilities of computer applications and the user interface design still remain interesting in the current reality, as the devices and/or procedures that make the environment where a user interacts with a system, in the joint performance of a

³ Cfr. ZACCAGNINI, José Luis, "El diseño de la interfaz de usuario", in ZACCAGNINI, José Luis and ADARRAGA, Pablo, *Psicología e inteligencia artificial*, Trotta, Madrid, 2004, pp. 241-266.

relevant task. For Ledesma⁴, in this respect, all media likely to include information are "real interfaces that mediate between writing and reading to produce, in light of every age and every historical context, changes in the way we read". Fernandez-Coca insists in this universal variant of the term:

The interface is the tool to facilitate user interaction with the elements of its environment. It's not, therefore, a problem created with computers. It has rather been the world of computers that had to take all existing studies about user interface before its appearance, and adapt them to the specific needs that have arisen⁵.

Given, then, that the interface is not an exclusive concept to new media, but, in some way or other, it generally refers to the means of communication between transmitter and consumers (beyond the technology used), the key would consist of checking the transformation of these information environments and how it affects the reader's response.

The recent emergence of tablets in the information market, on the other hand, explains the shortage of literature and studies about them. On the current scenario, Llanos complains, in general, about the lack of sensitivity of many publications to understand the real needs of readers and to exploit the possibilities of the new software and interfaces, referring, in this case, to the *iPad Apple*: "Traditional media have *made the leap* to *iPad* without understanding the 'reader 2.0' and still today they are unable to embrace the opportunities offered by the famous Apple tablet." And, he adds, only a few seem to adapt to the virtues of these devices: "Hope is showing between the virtual pages of a new generation of magazines that replace ink with a functional and interactive mentality, with a great aesthetic sense. No more paper ideas. The new *iPad* magazines reach almost every corner of the planet"⁶.

In this respect, according to Zaccagnini, ignoring the data about the way readers process information in these new media can make them, in his words, "not to objectively respond to what was expected from them, causing unjustified rejections and underutilisation of systems"⁷, thereby it could reduce their effectiveness and appeal⁸. One of the main challenges faced by these media is to clear, or at least, replace the habit, fully rooted in many users, of the traditional paper-navigation ("turning pages") and begin a transition to new models. Given that, as Royo points out, "the purpose of an interface design (usability design plus visual design) is to obtain a successful user

⁴ LEDESMA, María, *El diseño gráfico, una voz pública (de la comunicación visual en la era del individualismo)*, Argonauta, Buenos Aires, 2003, p. 53.

⁵ FERNÁNDEZ-COCA, Antonio, *Producción y diseño gráfico para la World Wide Web*, Paidós Ibérica, Barcelona, 1998, p. 144.

⁶ LLANOS, Héctor, "iPad magazines, a la conquista del lector 2.0" [online], *Pop Etc., El País*, July 11, 2011, <http://blogs.elpais.com/pop-etc/2011/07/ipad-magazines-a-la-conquista-del-lector-20.html> [consulted: July 21, 2012].

⁷ ZACCAGNINI, José Luis, *op. cit.*, p. 243.

⁸ It seems appropriate, at this point, to cite the three axioms listed by Norman in order to ensure the viability of any technology and overcome initial doubts of the reader: simplicity (facilitate the task), versatility (allow new and creative interactions) and pleasure (design nice and pleasant products for the user). NORMAN, Donald A., *El ordenador invisible*, Paidós Ibérica, Barcelona, 200, p. 34.

experience"⁹, the question is inevitably what the options are, i.e. how the publications face new tasks of information visualisation and usability¹⁰.

In this line, Areso¹¹ identifies several basic options to build tablet publications, offering a precise idea of the diversity of the current context: (a) a simple PDF of the printed publication (the one with the more static nature); (b) a dynamic application run by feeds, which introduces a more careful design, made to read longer texts, but with a design that ignores the great advantages of the tablet, (3) the website of the newspaper, adapted to this new format, and (4), apps expressly built for the tablet format, with the addition of dynamic content, greater interactivity and a higher exploitation of its resources.

The current outlook, however, seems very confusing. Several factors may help explain the slow penetration of publications aimed at these new devices. As Norman suggests, some of the usual concerns about new technology are inherent to the cultural context:

Once an infrastructure gets established, it is difficult to change. Even when it is clear that new methods would provide superior results, the old ways linger on, for they are deeply embedded into the culture of a society, so deeply ingrained in the ways people have learned to live, work, play, that change can take place only very slowly, sometimes taking decades¹².

Other difficulties are related to the disorientation of content creators. According to Jeremy Leslie, "like in the early days of the web, there are many agencies that offer tools for creating apps but, in my experience, they are too complicated and are not able to understand the magazines workflow"¹³. McNulty talks about the problems of many platforms to find criteria different from their cellulose neighbours: "Many rely on variations based on the software that allows you to rotate pages, and the leap of using a mouse in this regard is a positive development, but in reality nothing more than a poor imitation of the printed element"¹⁴.

⁹ ROYO, Javier, *Diseño digital*, Paidós Ibérica, Barcelona, 2004, p. 135.

¹⁰ There are innumerable initiatives that try to provide a definition of usability. For Krug, "it just means ensuring that something works well: that a person with average skills and experience (or even below average) may be able to use something (a website, a fighter jet or a revolving door) with the desired goal and without feeling completely frustrated". KRUG, Steve, *No me hagas pensar. Una aproximación a la usabilidad en la Web*, Prentice Hall, Madrid, 2006, p. 5. In turn, the ISO 9241-11 links this concept to "the degree of the validity at the time of a certain product being used by the specific user in a specific use situation, in order to attain the specified target, efficiency, and a user's degree of satisfaction" A more thorough information about the term can be found in "International standards for HCI and usability" [online], *Usability Net*, http://www.usabilitynet.org/tools/r_international.htm#9241-1x [consulted: January 5, 2012]. The empirical exercise of this work is based on this definition to formulate the research variables.

¹¹ ARESO, Diego. "Apps de prensa, una recopilación (I)" [online], *Quinta Tinta*, December 18, 2010, <http://www.quintatinta.com/2010/12/18/apps-de-prensa-una-recopilacion-i/> [consulted: June 30, 2011].

¹² NORMAN, Donald A., *op. cit.*, p. 84.

¹³ LESLIE, Jeremy, "iPad magazines: where are we now?" [online], *Creative Review*, February 2011, <http://www.creativereview.co.uk/back-issues/creative-review/2011/june/crit-ipad> [consulted: July 10, 2011].

¹⁴ McNULTY, James, "iCame, iSaw, iConquered?" [online], *Creative Review*, June 2010, <http://www.creativereview.co.uk/back-issues/creative-review/2010/june-2010/crit-jeremy-leslie> [consulted: June 20, 2011].

The ignorance of the reader preferences is another criterion that feeds this debate; according to Tony Fasciano, head of The Digital Americana, "lifelong media are still deciding what to do with those readers who are willing to open their wallets for the digital version. [...]. This is a reader who wants to try new things, who will ultimately set the tone of what will happen in the future"¹⁵. If we also look at the (overall) sales of many tablet publications, which sales figures could be improved, the disorientation is more than evident: compared to the commercial success of devices, editorial content doesn't end up increasing. Leslie comments:

The allure of this type of application could be enough to revive the market, but, against all the technological and creative effort currently required to start developing a magazine application, the reality is that many of them just reach almost a thousand downloads¹⁶.

Among the more important roles generally assigned to information designers, therefore, the identifying needs and consumption patterns of potential users is perhaps, as Kolko said, one of the priorities for the development of more satisfying products by publishing companies:

The strongest quality a designer can possess is the ability to empathise with people and understand their needs. The first rule of good design is to understand your audience; this applies when developing a product, but it also applies when facilitating in the boardroom¹⁷.

3. Objectives and predictions: towards a model classification

According to the above statements, and as it happens in all recently implemented technology, the certainty of finding ourselves in a largely unexplored field leads to an acceleration in their research, in order to decipher the practices that ultimately end up in a better acceptance of information content by readers. Despite all the obstacles mentioned, tablet sales prospects grow and everything indicates that they can become the ideal information support. To contribute to more effective products, it is necessary, as a first step, to identify the solutions provided by the different models of current tablet publications, and an evaluation of their own characteristics.

Based on these requirements, the study is based on two main objectives:

- Identify and classify the technological, visual and structural proposals offered by the reference media, that is to say, those who have invested more effort in their tablet versions according to their dissemination, critic and sales ratios.
- From the previous typology, discover the formal qualities of the categories with best adaptation to the tablet format, in order to discover the most usual trends and usability conventions used in these devices.

¹⁵ LLANOS, Héctor, *op. cit.*

¹⁶ LESLIE, Jeremy, "Magazines reloaded" [online], *Creative Review*, June 2011, <http://www.creativereview.co.uk/back-issues/creative-review/2010/february-2010/magazines-reloaded> [consulted: July 10, 2011].

¹⁷ KOLKO, John, *Thoughts on interaction design*, Morgan Kaufmann, Burlington, 2010, p. 90.

Following these objectives, the research sets the following predictions:

-Prediction 1: It is possible to categorise informative publications on tablets from their formal qualities and their degree of usability.

The intention is to find out which methods are currently used by different publications that use tablets as the means of communication, and, in a second phase, to find those best adapted to these devices, through various objective criteria.

-Prediction 2: Within the best adapted categories to the tablet format, certain similarities can be seen in their usability attributes.

In other words, the aim is to enumerate the most relevant features (graphic resources, signalling elements, navigation systems and multimedia contributions, etc.) included in the information design of the publications which are better adapted to these devices. In this respect, it's possible to identify certain similarities in the design of these interfaces, to try to adapt to the demands of readers and their perceptual patterns.

However, the subject of this study is not to make judgments about the suitability of certain attributes in relation to usability, but indicate the mechanisms that better make use of the specificity of tablets, compared with other media (traditional web pages or printed publications, for example). It has not been proven, therefore, that these features correspond to so many benefits for the user: it is, in fact, one of the main limitations of the research. Analyse the behaviour of readers to these properties, assess their preferences (also according to their variable nature) or empirically verify the functionality of the aforesaid attributes are some of the issues that require immediate consideration in future studies to more successfully complete the analysis of usability and its effectiveness in the described categories. As Krug argues, in relation to the powers of this line of research, only the analysis of real user feedback can report reliable data: "It has to use the collective expertise, experience, creativity and common sense of the team to develop some version of it (at least a rudimentary version) and watch normal people trying to find out what it is and how it is used"¹⁸.

4. Methodology

The methodology process of the study was formed by five phases:

a. Selection of devices (tablets) used: The evaluation of the stimulus used two *iPad 2*, with 32 and 64 GB.

b. Selection of stimulus: One of the most significant obstacles of the research is the shortage of studies in this area, which, among other issues, led to the difficulty of limiting the number of items needed to consider the full spectrum of design alternatives. As a continually evolving market and given that, at the same time, it is impossible to take into account a thorough list of publications on these devices (yet quite numerous, despite being so new), it was decided, in the selection of reactivity, to simultaneously use several criteria:

-Its acceptance and volume of sales (according to the numbers of some online stores, such as the *App Store*), both of these media and the communication groups to which they belong.

¹⁸ KRUG, Steve, *op. cit.*, p. 129.

-Its scope or popularity of the application itself (according to several forums and media)¹⁹.

-The purpose of covering the widest percentage of the media scene, renouncing, in this sense, the evaluation of media with many formal similarities (for example, those belonging to the same communication group, which usually include similar strategies).

-The research is not limited to any kind of specific media and it selects, generically, informative tablet publication models. The essential need to analyse, at a first level, various design formula led to exclude other criteria that, at one point, and in a hypothetical future research studies, could be used to specify the research object (regularity of the medium, content, readers, etc.).

The final list of selected publications is shown in each of the six groups in the next chapter.

c. Analysis of publications and development of categories: In response to the first objective, each of the selected media were individually analysed and a classification was created, grouping publications in categories according to their affinity and their specific philosophy of use.

d. Creating heuristics to evaluate the adaptation to tablet: After the individual analysis and the categories listed in the previous point, a series of criteria were set to evaluate the degree of adaptation to tablet of each of these types. These heuristics, along with a scale and organised according to their different impact, intended to reflect their accommodation ability to devices.

e. Usability study of the categories with the best adaptation to tablet: Once detected and selected, the categories of publication that showed greater suitability and optimisation for these devices, the research tried to discover, from a new list of common usability criteria, if there were formal conventions in the different media of these groups.

5. Results analysis (I): categories of tablet publications

In response to the first aim, and after an exhaustive review of the stimulus selected, it is possible to set up a first list of mechanisms currently used by different informative media in tablets:

5.1. Adaptive PDF

Description:

It entails a mere copy of the pdf publications. The digital version of the traditional or printed publications is re-sized to fit in the tablet format.

¹⁹ Some of the consulted websites were *Quinta Tinta* (<http://quintatinta.com>), *Mag Culture* (<http://magCulture.com/blog>), *Tendencias* (<http://tendencias.com>), *Antonio Riull* (<http://blog.antoniorull.com>), *Xombit* (<http://xombit.com>), *Information Architects* (<http://informationarchitects.com>).

Properties:

-The main (and almost the only) characteristic is determined by the dimensional adaptation: the page size is reduced and fully displayed on the screen of the tablet. Of course, it includes the possibility to zoom and it uses tactile properties. It also allows offline consultation.

Selected publications:

This first option is represented today by most of the media (national and international), which find in this idea the best way to offer readers screen display without excessive additional costs. Today, the acquisition or subscription of these publications usually focus on large structures or media centres, such as *Orbyt*, *Zinio*, *Kiosko* (Spain) or *Pixelmags* (USA), which offer various purchase advantages to consumers (discounts, flat rates, the opportunity to buy various publications simultaneously, etc.).

5.2. *Enriched PDF***Description:**

It is a variation of the first alternative (adapted PDF), but with some elements (usually audiovisual inputs) and links to the original website as a resource to get more details of the content.

Properties:

Visually, they take the same design possibilities of static media but with links to online content (within the same application) and some audiovisual resources (videos, mainly).

Selected publications:

Some of *Orbyt's* products, like *El Mundo* or *Marca*, offer these services. *New York Mag* and *Surface magazine* are another two headers analysed within this chapter.

5.3. *Specific RSS feeds***Description:**

These are applications specifically created by the publication itself supplied by the feeds that the latter one produces, often in its own website.

Properties:

-They show a unique, standard structure, adapted to the needs of the medium, with contents that compile information of this publication's feeds.

-They don't usually have a specific periodicity, but they offer constant and, sometimes, real-time information. They are, therefore, very popular in daily newspapers or other audiovisual media.

-The information is adapted to the structure, not the other way round. The information is arranged in sections according to the nature and needs of the medium.

-It needs an online connection to read the updated content, although some of them, like *El País*, let users previously download the content for offline reading.

Selected publications:

El País, *The New York Times*, *BBC News*, *S-Moda*, *Life*, *The Must List*.

5.4. *The newspapers' website, adapted to the tablet format*

Description:

This refers to the publication's website, automatically adapted to the tablet format.

Properties:

Usually, they don't have any special property: it's the same website reduced to fit in the device's size. However, there are increasingly more alternatives to optimise contents in these formats, with a re-distribution of the elements according to the properties of each device (solutions of the commonly known as *responsive design*).

Publications:

All media with online presence. Some of the best responsive design examples evaluated in this category are *elpais.com* or *bostonglobe.com*.

5.5. *Generic RSS feeds*

Description:

They are not strictly tablet publications but *metamedia* specifically made for this technology that allows reading from different sources by subscription. We include in this category the traditional *feed* readers and those new products that, adapted to the tablet format, are designed with hierarchical structures and try to automatically take some of the fundamental principles of editorial design.

Properties:

- They work by feed suscriptions from any media but adapted, all of them, to a fixed structure. This characteristic is the main difference compared with the third variant (specific applications).
- They need Internet connection to be fed with content. In some cases, the previous information download allows later offline reading.
- Visually, there are two main kinds: readers with a basic structure that usually organise content vertically without any type of architecture (traditional RSS feeds) and those that, even distributing content in a regular way, starting from a common layout, try to offer a more complex hierarchy of content.
- They allow simultaneous reading from various sources.

Selected publications:

- Digital magazines (RSS magazines): Flipboard, Google Currents, Tweetmag, Pulse.*
- RSS feeds: Mr. Reader, Reedr, Feedder, MobileRSS, App Google Reader, etc.*

5.6. *Specific multimedia application for tablets*

Description:

They are expressly designed for tablets, usually with a regular periodicity and contents, and they include all types of additional resources (interactivity, social platforms, visual restructuring according to the device orientation, etc.) and they allow offline reading.

Properties:

- It takes some of the best attributes of the previous examples: multi-page navigation (similar to PDF), with stable contents and occasional external links.
- It allows all kinds of audiovisual and interactive elements.
- They offer the possibility of offline reading (except those elements that need online connections, such as social platforms, contact, external links, etc.).
- It must be previously downloaded for reading (normally very slow, because of the size of the file).

Publications:

Despite their recent widespread use, there are already a remarkable number of alternatives, from more static versions (*Self service, Interview*) to those which take advantage of all multimedia and interactive possibilities of tablets (*GQ, Esquire, Vanity Fair, Wired, Creative Review, The New Yorker, The Guardian., etc.*). The specific attributes of these will be analysed in depth in the next chapter.

5.7. Summary: generic attributes of the categories

Considering the description of the previous categories, we tried to measure their adjustment to the tablet format from a list of common criteria, in order to collect and analyse, in a second phase, those that better achieve this purpose. These variables are listed below arranged from the lowest to the highest impact in relation to this objective:

1. Periodicity (periodic/constant updating): Are they media with a certain regular release or is the flow of information constant?
2. Customisable design (scale 1-3): Do the pages or sections have an individual design or are they based on a generic scheme?
3. Offline reading (scale 1-3): Does the medium allow offline reading or does it need permanent Internet connection?
4. Multimedia resources (scale 1-3): Does the publication only include text and image or does it contain additional elements (video, audio, multimedia infographics, interactive galleries)?
- 5 Level of interactivity (scale 1-3): What is the reader's ability to interact with content, share information or adapt the reading to his own needs?
6. Structure suitable to tablets (scale 1-3): Is the page design specifically designed for the tablet format or, on the contrary, is it a simple adaptation from a previous format?

The properties of each category according to the mentioned criteria are listed in the following table:

Table 1. Generic properties of the main software and navigation models²⁰

	Periodicity or constant information flow	Customisable page design	It allows offline reading	Multimedia resources	Level of interactivity	Structure specifically made for tablets
a. Adapted PDF	Periodic	3	3	1	1	1
B. Enriched PDF	Periodic	3	3	2	1	1
c. Specific RSS feed	Constant flow	2	2 (previous download)	2	3	3
d. Adapted website	Constant flow	3	1	3	3	1 (except responsive)
e. Generic RSS feed	Constant flow	1	2 (previous download)	2	3	3
f. Multimedia application	Periodic	3	3	3	3	3

6. Results analysis (II): usability and visual properties of better-oriented-to-tablet publications

From the previous analysis, we concluded that the categories with best adaptation to the tablet format are the following:

- Specific *RSS feeds*.
- Multimedia applications for tablets.
- Generic *RSS feeds*.
- Websites specifically designed using the responsive design technique.

About the second aim of the work (to find out conclusions on trends and use conventions of the systems better adapted to these devices), we discarded the latter two alternatives: the generic *RSS feeds*, because they are not exactly a publication but a tool designed for reading several simultaneous sources, with very special characteristics; and the responsive websites, as these include many specific properties, with very rich autonomy that keeps them off the theoretical framework of this research. Both examples could be considered as exclusive study objects for future projects.

This research mainly focuses, therefore, on the evaluation of the defining features of the categories *C (Specific RSS feeds)* and *F (multimedia applications for tablets)*. Because of the specificities and the complex diversity of both types of publications, the study

²⁰ These are generic properties, taken from the analysis of the aforementioned stimuli, subject to possible variations (often symbolic) in specific publications arranged from the lowest to the highest adaptation to tablets.

resorted to a group of variables to systematise the results and to accurately define usability attributes:

- Page structure and navigation systems, in the reader's access to several pages or sections.
- Types of graphic signalling elements designed to guide users through the publication and facilitate navigation.
- The use of tools to share content (through social networks or other services).
- Ergonomic options (the device's rotation or the change of font size to adapt it to the reader's needs).
- Inclusion of instructions of use.
- Use of multimedia and interactive elements (video and audio, infographics, picture galleries, *tooltips* or *sliding boxes*).

Thus, from the individual analysis of the applications, some of the more important conclusions of this research in both categories are the following:

6.1. Usability in specific RSS feeds

-Identifying common elements in the structure and navigation, beyond the criteria related to the individual articles reading, is extremely difficult. In this regard, there are two fundamental options: a vertical scroll reading (information that does not have any division) or horizontal reading through separated pages.

-A special effort has been put to give this media structures sufficiently intuitive to minimise the need for guide documents for the reader. Therefore, instructions for the publication reading are not usual.

-Content sharing in several networks is normalised and the connection with the original websites is re-inforced.

-Applications universally draw on the device rotation to organise the information and structure of the page, as one of the most significant properties of this model.

-This kind of applications use standardised design systems, so they don't allow themselves too many privileges in the innovation of each page or informative block, individually. In each medium, contents are normally adapted to very strict and homogeneous structures. The positive aspect is the immediacy of information; on the negative side, the model is very rigid for the special contribution of interactive or multimedia resources.

-A drawback in the use of some of these applications is the possibility of offline content downloading and consulting (a very relevant element due to the lack of 3G connections in many devices, a feature that is not available in many media despite of its real availability today) and the improvement of their ergonomic properties which may respond to the reader's needs (beyond the changes that result from the aforementioned rotation).

6.2. Usability in multimedia applications

It is in this category where we could find the most evident conventions in the tablet information design. After a comprehensive review of the publications belonging to this category, the most widely used criteria are listed below. Compared to the last chapter, where similarities were very few, we thought it appropriate to isolate each variable to analyse their properties in depth.

6.2.1. Page structure and navigation

-Relative to pagination formulas in these publications, we can identify two main navigation systems: indivisible content whose navigation is set by a vertical scrolling ("without jumps") and individual pages that emulate (partially) the traditional reading in paper. In some cases (*Esquire*, *Vanity Fair*, *Vis-Á-Vis*, among others) both are used simultaneously.

-It's interesting, in this regard, the Time proposal of using a smooth vertical navigation and a division of individual pages when the device is in horizontal position.

-In the navigation attribute, we found the main consensus and an interesting principle of reciprocal imitation among these applications, probably with the aim of systematising the reader's consumption patterns and making it easy to perform this task. In general, there's a new reading model that keeps away from the metaphor of "turning pages".

-Applications seem to support a formula where vertical navigation lets users deepen the reading of a specific subject or article, while horizontal navigation facilitates changing news, interviews or sections.

-To ease the transition of pages, all these applications include at least one of the following systems of access (all of them available, at the reader's choice): table of contents (normally vertical), pagination (normally horizontal, at the bottom) and an interesting scheme (exclusive in tablet devices) that horizontally shows the theme repertoire and, vertically, the length of each.

-Many of the common attributes are based on the use of the same edition system (*Adobe Publishing*).

-In order to facilitate the user's navigation, there is an interesting feature, not too explored by most of the publications, which involves an insert to internal links between the pages and, above all, to provide buttons to come back to the starting point.

6.2.2. Navigation signage elements

-There is almost full awareness of the need to guide users in all those tasks that go beyond traditional reading (text and image) of information (new content on the device rotation, audiovisual elements, hidden text layers or *tooltips*, sliding boxes) by icons which appearance is adapted, in each case, to the graphic philosophy of each application.

-Besides the scroll bar shown on the right-hand side (a common element in these publications), there is often an arrow element to suggest the continuation of vertical

reading and, to a lesser extent, the inclusion of references (such as numbers or small circles) to guide the reader in the article (i.e., where he is in his reading). The horizontal arrows used in every change of section are not so essential: due to the progressive assimilation of reading systems by the user, they end up assuming other functions (*slideshows* or horizontal *sliding boxes*).

-Despite their usefulness in longer vertical articles, top-of-page buttons (which take readers to the beginning of the information) are used less.

6.2.3. *Solutions for sharing content*

-Like in RSS feeds (generic and specific), multimedia applications have to understand that they cannot be isolated products and that the interconnection with other social platforms can become their main strength. Facebook, Twitter and e-mail sending are the more common tools, in this sense, that usually include links to contents placed on the website of the medium.

6.2.4. *Ergonomic properties*

-Most of the evaluated media use the tablet ergonomic flexibility in the two main positions (vertical and horizontal) as a value-added element. The information architecture changes in every turn and is adapted to the device orientation.

-In the most dynamic media and the ones that best draw on this quality, *layout* is not only re-adapted to the new format but it also includes different contents in both versions.

-Ergonomic options such as the change of font size, that were quite popular in the RSS Feeds category, have little presence in this type of applications. The explanation is probably found in their closer layout designs, with more complex and dynamic structures that (as it seems) come from a deep analysis of how to optimise their properties and functionality. Other resources (such as the device rotation or the zoom on screen) diminish the relevance of these options.

6.2.5. *Instructions for use*

-Thinking about new or less skilled users, a brief, very visual and simplified explanation about the medium usage is often included (usually after the first page). This measure is expected to be no longer used as users become familiar with them and reading systems become more standardised.

6.2.6. *Interactive and multimedia elements*

-As already mentioned, one of the main benefits of tablet publications versus traditional media (paper) is its ability to enrich static content with new interactive and audiovisual

solutions, feeding activity and the main role of readers in information consumption. Video and audio services integrated into these applications, text *tooltips* (hidden layers shown at the reader's initiative, which fully show other content –like images– that let them have access to larger areas with less effort), *sliding boxes* (used to gather information in small spaces and to avoid the need to change pages), *slideshows* and interactive galleries (that show more in less space) or info-graphics, whose interactive nature adds value to content, are some of the more usual properties.

-There are interesting proposals, not too popular, as the ones consisting in including social networks tools in the applications, like the *Vanity Fair's tweetline*, that allow users real-time consulting of contributions from a specific *hashtag* (related to the main character or the subject of the article, for example).

-Moreover, advertising finds in tablets new and original alternatives to market certain products or services through the incorporation of many of the above features (audiovisual elements, interaction, links, small games, etc.).

7. Conclusions

The findings respond to the study objectives and confirmed the predictions made. In this sense, and following the proposed methodology, the most important conclusions revealed by this research may be summed up in the following points:

-In the development of a tablet publication classification today, we can enumerate six basic categories which, arranged from the most to the least used of this device, are as follows: specific applications for tablets, specific *RSS feeds*, generic *RSS feeds*, websites adapted to tablet format, enriched *PDF* and adapted *PDF*.

-Multimedia applications specifically designed for tablets and specific *RSS feeds* are the two models that best adapt to the new devices, from various criteria: navigation and layout, adaptation to the device rotation, interactivity or multimedia elements

-These are two proposals strongly conditioned by their peculiar philosophy and the information periodicity: in the first system, its timelessness leads to a richer and more customised design; in the second one, the homogeneity of the structures is directly caused by its immediate informative requirements. Both alternatives make greater efforts to adapt themselves to the particular features of new devices.

-Despite its recent introduction, there is a growing number of ideas related to these two categories that tend to enrich the information resources typical of static media (text and images) with an increasing amount of audiovisual and interactive elements that take advantage of the benefits of these devices and adapt themselves to them (video, audio, interactive infographics, *tooltips*, *sliding boxes*).

-In this respect, there's an obvious intention to improve users' participation with their contents, offering them different reading ways, continuous alternatives and various interactive solutions with other platforms (*Facebook*, *Twitter*, external websites, etc.).

-Unlike specific *RSS feeds*, where conventions are more sporadic, in specific multimedia applications for tablets, despite their being so new, there are clear conventions in the navigation strategies of several publications, related to the structure of pages and sections menus, the results of the device rotation or the navigation

signalling. These similarities are more evident in some cases by the use of common software and, in others, by many of them belonging to the same corporate group.

-While we can confirm this navigation homogeneity, each medium has a particular graphic language that makes it different from the rest. Besides, if an audiovisual or printed publication precedes the tablet version the visual properties tend to ensure cohesion with them.

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