ARCHIVES ONLINE FOR USERS: TOWARDS A USER-CENTERED QUALITY MODEL INCLUDING A COMPARATIVE EVALUATION FRAMEWORK FOR USER STUDIES

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Abstract

The traditional paradigm of archival mediation had to come to grips with the new web environment: if guides, inventories and indexes act as mediation tools between what is inside archives and whoever needs to access them, traditional archival finding aids are not ready to be published on the web, where users are basically free from any mediation. From the final users' point of view, archival informative mediation on the web is suffering much more than what archivists usually accept. The starting point for rethinking the archival mediation paradgim could be the principle that "output is not input", and the compliance to current archival standards is a necessary condition, but not sufficient to guarantee the usability of archives online. Rarely archival projects organize specific user studies to finalize language, interfaces and architectures of the new environments.

The paper, before proposing some first elements to guide the drawing of a new model (built to ensure quality to archives online in terms of user needs, experience and satisfaction), presents the case study of a huge archival portal based on an user-centered approach. In particular, if during the formative phase, the portal prototype has been tested adopting a user studies research, now, when the service is active, it is possible to integrate and compare those data with the web analytics results.

1. Introduction

This paper discusses the challenges of archival profession as a result of the increasing availability of archives on the web (from now on, "archives online") and refers to the few user studies applied to quality of archives online as perceived by users. Archives online are predominantly focused on access, enhancing as much as possible the amount of archival data available. More rarely it was questioned the usability degree of online archival descriptions and their use efficacy from the users' perspective. Even for the few cases when archival information quality was evaluated, users' satisfaction showed to be a minor goal. Therefore, it is not surprising that few published studies based on user involvement to test archives online quality could be found, and the persistent lack of quality reference models for these services. From this point of view archival science seems to be in delay in comparison with neighbor sectors, such as digital libraries, which already dealt with the issues of web environments and with information behaviors (Trombone, 2014), and are now at an advanced stage of development and diffusion.

To support this vision, the paper presents the methodology of a huge user study conducted in Italy evaluating the prototype of an archival portal, involving more than 80 users.

Thereafter, it concludes by suggesting key concepts and methods for the development of a user-centered quality assessment model.

2. **The traditional paradigm of archival mediation in web environment**

Archival description is traditionally conceived as the activity of producing finding aids resulting uniquely from the mediation of archivists. They have as their target a limited audience, selected through a well-established practice, and adopt a refined technique for document description, based on the descriptive traditions currently in force. This attitude leads to producing finding aids whose use often requires the reference service of archivists themselves. This paradigm of "extended mediation" implies that archives reveal themselves gradually through several stages shaped just by archivists, who produce the finding aids and guide their use.

The nature of mediated searching tools seems to be so pervasive that even the audience traditionally favored by archivists – history scholars – started to complain about the "power of archivists", conditioning historical analysis:

> [A user] has to ask [...] a catalogue usually exotic […] that […] he does not always know how to understand; for this purpose he needs the advice or guidance of the specialist: someone who mediates, being able to explain the record content and to show what we can expect from its offered description. This mediation separates researcher from the direct access to record, because archivists argue that record must be placed in its context, got ready and explained before it can be used […]. Choosing what will be part of archives [in a permanent way, and on the other hand] discarding what is not appropriate, and so destroyed, is not only the condition to mark the boundary of archival fonds, but also to privilege a certain social memory and how it will be preserved […]. Preserving certain things and describing them in a particular way strengthens some values and not others, it reinforces a certain way of understanding the past, a certain formula to display it through the archives arrangement and description (Pons 2013, p. 173, 175)[1].

This model of "extended mediation" came inevitably to grips with the massive increase of web services. The characters of traditional archival finding aids are nowadays affected by the nature of the web: interactivity (freedom to act on information), multi-sequentiality (nonlinear use of information), association (freedom to compose information), itinerary (access to information based on the navigating), process (information as a dynamic phenomenon in which there are not discontinuities), openness (nonhierarchical and distributed production of information). Traditional archival finding aids are not safe from the set of changes that the web enforce on the analog texts produced by our traditional printing culture.

The North American archival community has dealt with this issue, prompted also by several user studies results and by considering that the increased success of archives on line has not implied automatically the increase of their full accessibility. Online archival resources are currently perpetuating the deference to the tradition of "extended mediation", preserving a material-centric rather than a user-centric approach. Just the mediation of archivists seems to take care of translating users' queries into the intrinsic logic of finding aids (Alfier and Feliciati, 2013) (see figure 1).

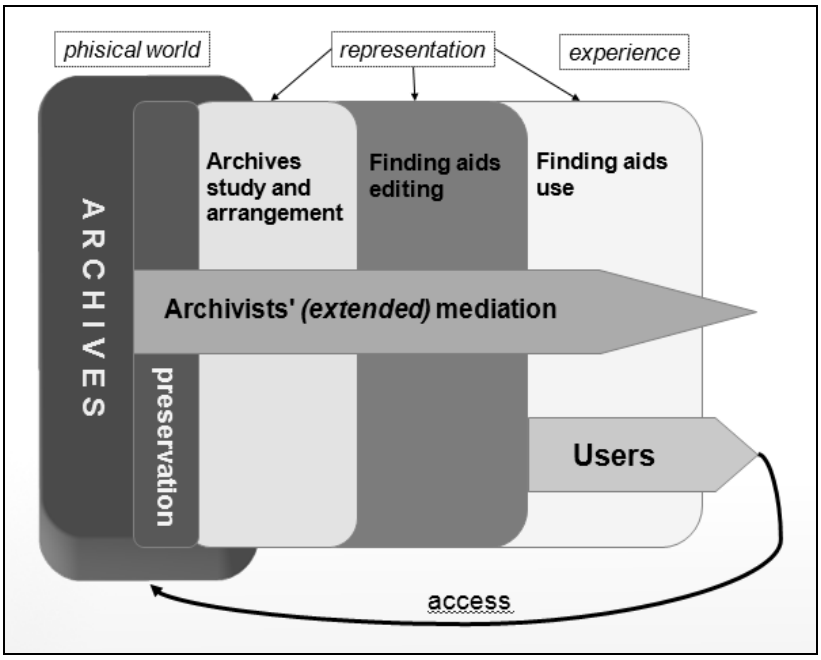

Figure 1 – The traditional extended mediation of archivists

This process is acting even though the ICA standards and guidelines[2] –ISAD (G), the *Principles of Access to Archives* and the *Guidelines for the Preparation and Presentation of Finding Aids* – have emphasized that the standardization process aims to produce self-explanatory finding aids, to be used without a pervasive mediation. In fact, it has to be noted that ICA working groups have privileged decidedly the data input, characterizing the description standards with an "output neutrality". The compliance with standards is a necessary condition, but not sufficient to guarantee the usability of archives online, under the basic principle that "output is not input" (Scheir, 2005, p. 50-51).

These issues are strengthened by the interfering action of a brand new entity, unknown in the analog world: the user agent. Users have often no direct access to online finding aids, taking advantage of automatic tools: robots, spiders, crawlers, harvesters and similr web agents (Light, 2008, Schaffner 2009). Archives online should be consequently "two-headed": the first one addresses human users and should be an easy-to-use information display, no more assiduously assisted by archivists; the second head addresses software agents and has to be built on mandatory metadata to avoid ambiguities caused by blind automatisms. This model could not cover all the requirements, anyway: the neutrality of the web – which would help the access to information – is sometimes apparent and networks theory applied to web topology shows that few nodes have many connections, but the majority of them are not very connected, with the consequence that information is widely distributed but not accessible equally: few nodes are easy to navigate, but most of them remain hidden for users (Numerico, 2010, p. 167-170).

This set of issues requires a reconsideration of the "extended mediation" model and the drawing of a new paradigm for online archival mediation (Gilliland-Swetland, 2001, Meissner, 1997, Yakel et al. 2007), in a cross-disciplinary approach, including that the self-explanatory effectiveness of online resources has to be verified empirically, by organizing usability tests and above all articulated user studies.

The activities devoted to understand needs, expectations, and perception of users (user studies[3]) are actually core to guarantee the delivery of a good web service. So, mostly in the

North American context (Chapman, 2010, Daniels and Yakel, 2010, Duff and Stoyanova, 1998, Scheir, 2005, Yakel, 2004) and recently in Europe (Dobreva et al., 2010a, Dobreva et al., 2010b, Feliciati, 2012, Agosti et al., 2014) the quality of use of online archival information has been no more presupposed, nor defined in abstract terms, but concretely tested with specific studies, measuring the effective interaction experience. The touchstone is represented by the concept of web usability, i.e.:

> every time a user does not succeed in retriving the information he needs, to accomplish an action or to make a decision based on available data, he collides with usability problems (Visciola, 2000)[4].

In this view, the web usability is a new form of rhetoric, a correct and conscious use of text structures (Fiormonte, 2003, p. 126), even if in the perspective of full quality for archives online its methods and criteria have obviously to be enlarged with the study and evaluation of usefulness, i.e. the satisfaction of users in respect to the content.

If we take into account the most relevant surveys regarding online finding aids designed according to the traditional "extended mediation" model, it is already possible to consolidate a bank of user study results, despite of the variety of measuring techniques of the audience and the different resources analyzed. We may sum up the results emerged by classifying the basic issues in the effective interaction of final users against archives online in four areas: archival terminology, hierarchical structure, searching tools and content visualization.

As regards terminology, all the studies concur that the language used within the online archival finding aids, too technical, represents a barrier for users. In particular, the most basic archival terms (starting from the noun *fonds*) are not immediately understandable and the archival jargon represents an obstacle not only for the comprehension of descriptions, but also for the use of the extended search functions, whose use is almost forbidden to novice users since they are based on complex and ambiguous labels deduced just from the archival language. Other barrier arises because archivists usually populate their descriptions with a lot of historical terms directly taken from primary sources or traditionally used for archival description, rarely supporting users with glossaries.

It has been widely noticed a sensible difficulty for users to browse the multilevel hierarchy typical of archival descriptions, even if sometimes the novices have shown an ability to learn the structured nature of archival resources. The ambiguity of the hierarchy logic leads users to prefer the search functions to retrieve information rather than browsing through the descriptive levels. This drive-back effect seems to be due to the sensibly different perspectives of final users and archivists towards archival finding aids. If the firsts are interested in what archives are related to (in the "aboutness", in content datum), archivists concentrate on what composes archives, on internal relations among descriptive items, on the structural datum, following strictly the principle that archival records are not records about an activity, but records of an activity. The issues related to hierarchical structures seem to be more evident for users with little or no direct experience of archival research. Some indications suggest that they tend to expect that archives structures are not based on foreseeable logical criteria – as they are actually – but on material characteristics of documents.

The user studies have showed some issues also in the use of the search functionalities, typically put beside hierarchy browsing. Those accustomed to OPAC tend to be convinced that the query methods are identical for archival finding aids and bibliographical catalogues. Others seem to have difficulty in choosing terms or search parameters, finding them too complex, and often prefer to adopt the default values proposed by the systems. This inability precludes any refining of results.

Other critical aspects arise from the presentation of search results: archivists have traditionally a non-evaluative attitude against archival documentation, tending to build up their information systems according to neutral orders for any list, for example alphabetical or chronological. Final users, on the contrary, are accustomed to general web search engines and expect the presentation of search results according to a semantic relevance rank (such as Google seems to do). The examined search behaviors include also the use of controlled dictionaries, namely subject-based queries, but the results about these tools are not fully concordant.

As regards the content access and use, the carried out studies do not provide any unequivocal position. There are some contradictory signs relating to users common preference for minimal descriptions rather than from detailed and analytical ones. Some appreciations have been noted after the use of displays presenting short narrative texts linking to more detailed information, taking full advantage of the hypertextual opportunities of the web.

The user studies on archives online are presently too few, and not yet coordinated in a common evaluation framework. They demonstrate how research on users interaction behaviors with online finding aids still needs to be deepened and broadened, sharing methodologies and results, to build out a more complete, normalized and comparative research framework. In particular, existing studies reveal some weaknesses, starting from the circumstance that each study applied its own protocol, tailored both on the specific characteristics of the resource to be evaluated and on individual research settings. This significantly hinders the possibility to compare data coming from different surveys and makes it impossible to have a historic series of data. In this regard, it would be very useful to create a classification system of the typical features of online finding aids, a base to structure on studies and to analyze on a large scale how changes on archival displays affect perceived use quality. The second issue to be noticed regards the smallness of panels involved by archival user studies, putting in discussion the relevance and reliability of the collected data. Tested panels were typically selected from population segments naturally interested on online finding aids, for example young people, persons with a high cultural background or coming from the same geographical and cultural context to which the primary sources described by finding aids were concerned. A shared classification of archives online user profiles and scenarios, based on direct studies, could help in the organization of researches and in comparing the results. Going deeper, some studies were conducted without a distinction between novice archival researchers and advanced scholars. It could be a relevant issue, because we could guess that the two groups implement very different strategies of interaction with online finding aids, and so it could be wise to organize two clearly distinct sub-panels within the same survey. In this regard it has to be verified the credibility of archival backgrounds declared by participants in demographic questionnaires, not necessarily sufficient for a classification.

3. Quality and users studies: an Italian case study

The activities devoted to understand needs, expectations, and perception of users, as underlined above, are crucial to guarantee the delivery of a good web service. Users studies should be implemented to empirically check the self explanatory degree and the usability level of archival resources.

It looks to be particularly strategic to directly involve users during the prototype phase of projects' development. To achieve this goal, the first and easiest method is to launch a survey (e.g. using on-line questionnaires), but it has to be reminded how it will be suitable only if a designed and interested community is already available. More complex and useful methods could ask the organization of moderated focus groups, trying to address the user panels who could be interested to the future web service we are working on. Finally, the expert study could involve both experts on content and functionality, to gather advanced qualitative data on performance,

usability and expected success of our project. After such prototype testing activities, it is usually possible to define an implementation policy based on obtained recommendations, and the researcher may return to previous stages of development and adopt the studies' findings, thus altering the status of the prototype.

A huge activity of testing archives on line during their formative step, in Europe, is related to the "Una città per gli archivi" portal (Antonelli, 2012, Feliciati, 2012, Feliciati and Alfier, 2013). During the prototype phase it is not possible to investigate the real users experience in using definitive contents and functionalities. Nevertheless, user studies are useful to collect precious data and produce useful recommendations in order to finalize the current release and for future developments. During this project, a multiple methodology, combining different study methods, has been adopted and a huge amount of qualitative data were collected.

The project "Una città per gli archivi" started in 2007 with the support of two bank Foundations (Fondazione del Monte di Bologna e Ravenna and Fondazione Cassa di Risparmio in Bologna). Its purpose is to valorize the most interesting archives of the modern and contemporary history of Bologna (Italy), preserving its collective memory and providing the city community with useful tools to experience this memory. The project asked the scientific advice of several experts on archival science and history research and to the active participation of State, regional and local institutions operating in the field of the conservation and the cultural promotion of archives: the Soprintendenza archivistica per l'Emilia-Romagna[5], the State Archives of Bologna[6], the Istituto per i beni ambientali culturali naturali dell'Emilia-Romagna (IBC)[7], the Gramsci foundation for Emilia-Romagna[8], the Provincia di Bologna[9], the Biblioteca comunale dell'Archiginnasio[10]. They all contributed to the development strategy of the project, selecting archives with a conservative risk profile and archives without any finding aid. Moreover, they agreed to cover also photographic, sound and audiovisual archives and collections of graphic materials, produced by different kinds of subjects: physical persons, families, corporate bodies (cultural associations, school institutes, academies, trade-union and political organizations, charitable and hospital institutions, public administrations and military bodies).

After some first interventions whose focused on the physical conservation, in 2008 the project increased the activity of description by adopting *xDams*[11], an open-source platform for documents' management provided by the Italian software house Regesta.com. Up to today, the use of the *xDams* platform has allowed to describe analytically almost 200 archives and to produce a collection of 300.000 descriptive records and authority records, thanks to the work of 82 archivists. Then, in 2010, a brand new team has been established, composed by archivists, computer scientists and communication experts, to coordinate the development of a portal for publishing on line the produced archival information.

The informations available on the web portal do not include just archival descriptions and authority records created by *xDams*, but also many image files reproducing textual, iconographic and visual documents (photos, graphic papers, posters and placards) and many digital multimedia resources providing originally analog sound and audiovisual documents. These digital objects will be supported by specific descriptive, administrative, and structural metadata. "Una città per gli archivi" has adopted the *Metadata encoding and transmission standard* (METS) scheme, maintained by the Library of Congress[12]. This choice will allow on one hand to encode metadata ensuring that digital objects are deposited and properly managed by specialized repositories created for long-term conservation; on the other hand, METS provides metadata

ready for the exchange of digital objects with other information systems, where they will be accessed, redirecting to the portal for the complete fruition of descriptions and media objects.

To face the problematic issues resulting from published user studies about archives on line, the development of "Una città per gli archivi" found some possible solutions (Alfier, 2012, Alfier and Kolletzek, 2013). Firstly, to facilitate users with terminology, the choice was not to use, as far as possible, archival jargon, both for the labels of archival descriptions and for searching tools, adopting terms of common sense and, as far as possible, universally known. To help users with the hierarchal structure, the portal provides browsing features as intuitive as possible. Moreover, some alternative tools were implemented, such as authority files of access points ("keywords") and a specific ontology dedicated to modern and contemporary history of Bologna, whose grid of instances can be browsed by users, requesting for each one the related archival descriptions. To finalize the search functions supporting an immediate approach towards documents, the information retrieval engine was based on an algorithm of natural language, allowing the management of synonymies and the ranking of results based on a their semantic relevance, taking in consideration the general search engines logics, whom most of users are used to. Last, as regards the content visualization, a double approach has been chosen. From the ICT side, it was provided the re-embedding of metadata into text strings as close as possible to natural language, with the CMS supporting automatic retrieving and extraction of metadata. From the content side of the medal, the project gave preference to structured texts, to facilitate users' decoding even in case of long contents, and excluded the use of archival abbreviations and terms. Plus, archival descriptions have been supplied with as more as possible digital reproductions: when the system will work at its full capacity, it will be populated by around 150,000 digital objects, each of ones precisely contextualized by a set of metadata composing the relevant archival description.

The web portal was inaugurated on 2013 April 11th and is available at http://www.cittadegliarchivi.it/. The published information assets are periodically increased by the editorial team and currently[13] include:

- analytical inventories of 129 fonds;
- archival descriptions of 232 creators;
- archival descriptions of 23 custodians;
- 34,443 entries that make up a keywords authority file.

On the use side, the Google Analytics service certifies that the portal has been visited for its inaugural date[14] by:

- 19,755 users, a number that includes both "new visitors" and "returning visitors"
- who viewed 87,915 pages
- during 29,726 sessions[15] (92% of them are related to Italian users and 42% to users who live in the metropolitan area of Bologna).

Coming to the user studies activities within the project[16], it was organized first of all a line of study involving all the internal staff of the project. For the quality of archival descriptions, the competence of archivists is obviously crucial, but rarely those specialized "input providers" are directly involved in the development of the output environments. The users and functionalities study of "Una città per gli archivi" portal planned a special focus group, inviting together archival staff and portal developers at the very beginning and at the end of the users study activities. This

meeting was moderated according to a special protocol, mixing the typical focus groups method with a moderated brainstorming, putting archivists versus engineers to discuss specific issues.

The core of the research was the implementation of five focus groups, with the purpose of collecting qualitative information about the potential target users needs and satisfaction against the portal prototype, of course not yet public so not known by any of the participants. They were involved more than 60 people in total, composed by 4 groups: high school students (15 people, aged 16-19), university students (16 people in total divided in two different sessions, one in Macerata and one in Bologna, aged 23-29), general public (16 people, aged 39-63, including high school teachers, administrative staff, an architect, one web master, three retired persons), and finally archivists and cultural heritage professionals (16 people, aged 29-52, including librarians and history of cinema experts).

All the focus groups were moderated using exactly the same detailed protocol, scheduling the presence of a moderator and a co-moderator, 100 minutes for each session and six different sections made of moderated discussions, written and oral questionnaires, and the individual implementation of specific tasks using the portal. The six sections were:

1. Demographic questionnaire (to gather information about participants' personal profiles - age, profession, etc. - their competence on archives and their ICT skills);
2. prototype brief presentation (a brief but complete presentation, made by the co-moderator, to give to participants a general idea of the subject of the testing);
3. First impressions and general discussion (what is the first impact of archives on line? What they look to be for? Who may be target users? etc.);
4. Individual execution of five tasks to be achieved in 30 minutes using the portal prototype, and whose results were recorded answering to some specific questions on preformatted modules;
5. Advanced impressions and discussion (are your first impressions changed? What tools of research did you prefer? Was it easy or not? etc.);
6. Final discussion (general opinion, suggestions for useful developments and the classical "would you suggest this portal to a friend?").

The huge amount of data collected after the studies will be published next winter in a book with the objective of:

- accounting for the protocol used for the users study and its possible weaknesses;
- analyzing the behavior trend lines of users involved in the research, also taking into account their demographic profiles;
- highlighting the portal deficiencies in terms of usability;
- comparing the outcomes of the portal prototype user study to the flow data of users interacting with the active portal and provided by the web analytics of Google service.

4. **Where to start from for a new model for quality of archives online?**

A possible quality assessment model to apply the new paradigm for online archival mediation has to be based on some key concepts and should draw from the models adopted in neighboring domains (Feliciati and Alfier, 2013, Kyrillidou and Giersch, 2005). Moreover, this ambitious but urgent goal has evidently to be shared within a wide community, made of archivists and digital curators but open to digital librarians, experts of web designing, user studies and information interaction experts.

Starting from the basics, archivists have to admit that the splitting between archival input and its output removes them from the final usage stage of finding aids. The operative space thus created, opens up the specific competence of designing the outputs of archives online. This thorough re-thinking calls for the contribution of archival science together with cognitive science, human-computer interaction studies, web design, knowledge representation, other application models and above all should be based on the "users' voice", heard after appropriate user studies. To overcome the traditional "sacerdotal approach" of archivists, the new "secular approach" asks for dynamic environments, where the information core is still represented by data produced by archivists, but it is open to possible enrichments resulting from relationship between users and content, as well as between users and archivists. A "shared authority" model (Duff and Harris, 2002) has to be legitimized (figure 2) even for archival descriptions, opening the evolution of finding aids into "information social phenomena" (Ribeiro, 2001), embedding replacements of human mediations such as virtual reference, recommend/reputation systems, visitor awareness services, and accepting the enrichment provided by user generated content services like social tagging, social bookmarking, folksonomies, Wikis, comments, notations (Yakel, 2003).

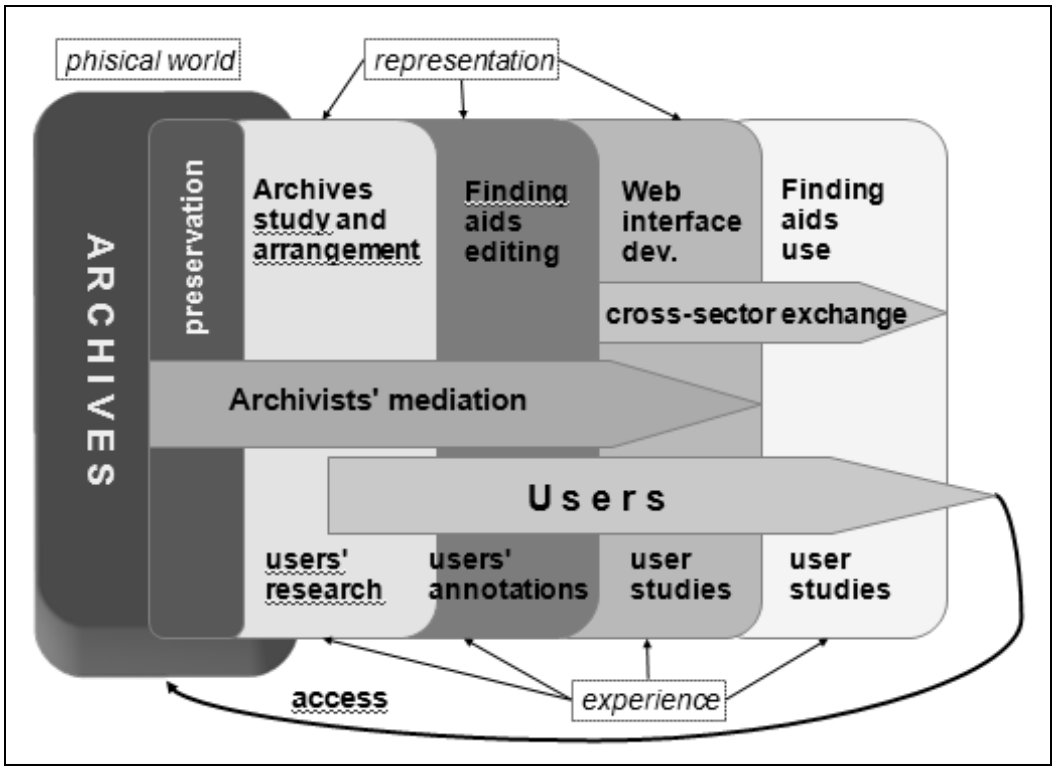

Figure 2 – A shared authority mediation model

Secondly, the development of archives online can't help considering different scenarios of use ()[17]. Archival use(r)s may be roughly classified according two profiles: the "browsing attitude", which implies the adoption of advanced search strategies (); and the "searching attitude", i.e. the interest for single units of information, without any attention to context (Feliciati, 2007). These profiles, realistic as they may be and not necessarily alternative, should not lead to privileging one over the other and should not be considered exhaustive. The iterative, shared study of

archives users should support the definition of profiles, scenarios or better *personas*[18], to support projects.

Another starting element for the building of a quality model should be a general classification of the typical issues to be faced for the development of usable archives online, founded both on published user studies and on some huge project on cultural web users (Dobreva et al., 2010b):

- *Coverage*: users could not easily perceive if what they seek is included in the archives online service they are using, if it could be somewhere else or even if doesn't exist at all on the web. Archives online should be clearly explicit about their effective covered domain, and should specify the available granularity of descriptions (reproductions? records? files? series? fonds?).
- *Structure / syntax*: archival content structures could be too multifarious and not easily rendered, and complexity could sometimes even be taken by archivists as a quality requirement. Archives online should consider accurately the development of displays.
- *Content / language*: most of the projects adopt excessively technical jargon, internal to the discipline or taken directly from the primary sources. Archival online should be aware that browse/search tools are fully usable only if the jargon is known (Dobreva et al., 2010b).

In the perspective of pasting these basic concepts and issues into a model, it has to be reminded that archives online are software products, so they fall under the definition of software quality provided by the quality model included in ISO/IEC 9126-1:200, Software engineering: the capability of the software product to enable specified users to achieve specified goals with effectiveness, productivity, safety and satisfaction in specified contexts of use.

Thus, the basic entities of a possible model are not technological innovation, content abundance or richness of functions, but they should be *users*, their *context* of use and their specified *goals*. The basic quality criteria should be *effectiveness*, *productivity*, *safety* and *satisfaction*.

Considering other available conceptual models to draw inspiration from, the *Digital Library Reference Model* (Candela et al., 2011) offers a persuasive representation of the multifaceted digital libraries universe, setting up six domains: Resource, Content, User, Functionality, Policy, Quality and Architecture. However, the User domain does not provide an extensive set of possible roles: testing and evaluation are not included. Moreover, besides human actors there are bots, intelligent agents and other machine actors, not clearly distinguished in the model even if they play very different roles and behaviors within the digital libraries. The Resource and the Content domains need special attention in the perspective of their application to the multilevel structure of archival descriptions. The concepts of identification, quality and format, and especially the distinction between Resource and its expression are fundamental for the archival input/output splitting. We could note that the Functionality Domain does not provide any scenario of User involvement in the view of evaluating the system, during its ongoing or in a prototype phase. The Quality domain is crucial, underlining the necessity of a clear quality of service dynamic statement, even if user studies – a basic source to assess quality – are not mentioned at all. As recently noted:

> The DLRM [Digital Library Reference Model] argues that the user is not only the focus of attention of research but, as a participant that acts in these systems, he/she can also assess the quality of the other domains. For instance, a user can express his/her opinion on the usability of a specific service within the DL [Digital Library] (Tsakonas, 2012).

Another model to be considered is the Interaction Triptych Framework: it focuses on the interaction between three entities: user, content and system. Thus “three categories of metrics are established upon the axes that are formulated by their in-between relationships” (Tsakonas and Papatheodorou, 2008). The first categories to be detailed for archives online should be usefulness, to evaluate the interaction between user and content, and usability, on the axis between user and the system. In the development and evaluation perspective, the framework has to include the design issues: information behavior models and techniques, user–system interaction, browsing/searching behaviors, and use of information (Toms, 2012).

5. **Conclusions**

Coming to a conclusion, the web environment undermines the traditional cultural mediation between archivists and users, first of all distinguishing the web output from the encoded input, to let it be easily decoded by any possible user. The XXI century archivists should start by focusing mostly on the shared characteristics and functions instead on the (existing) differences with the digital library domain, should offer a rich cultural experience to their users, building user-centric displays, matching their descriptive techniques and standards with human-computer interaction studies, checking their prototypes applying evaluation and testing activities. Users study are crucial, to finalize the publication environments and ensure a (really) good quality. The prototype stage of the project, when possible, offers a good occasion for evaluation and assessment activities based on users' involvement, with different opportunities than in the on line phase, where it is possible to check users' satisfaction and behaviors. The Italian “Una città per gli archivi” project demonstrates that user studies are not expensive, but need essentially an expert (and neutral) coordination, a good organizational staff and a network of people and institutions to be involved.

In a more general vision, user studies can open a new cultural and professional attitude, capable of increasing the “social impact” of archives and so reducing the marginal position they sometimes suffer in our contemporary societies. More than other components of cultural heritage, archives are still ruled by the old paradigm of an ideal value: the “in and of itself”. The aestheticism related to their rarity and their historical value - reduced to mere rhetoric - dooms them to a role of "positional goods"[19]. Thus, cultural heritage enjoyed with an effective advantage only by reduced groups of citizens, who adopt this enjoyment to mark their position of high social and cultural status. So the quality of archives as "merit goods"[20] - often recognized by law - is reduced to its pure negative meaning: too little demanded goods. This phenomenon is evident in the weakness of archives as object of public financial policies, even in competition with other "merit goods". In front of this extreme risk it is unrealistic to expect, from political authorities, an economic intervention directed to too little demanded commodities, because it would generate little or nothing in terms of consensus (Montella 2009). The only reasonable solution in our societies, built on democracy and complexity, is to make the archival heritage subject to a preference from a wide and deep community. This goal could be achieved by making archives really accessible, also through finding aids designed for the web and carried out around different types of users - more or less well-educated, more or less experienced about “archival things” – including those who have never dared to cross the threshold of an institution with archival holdings.

References

Alfier, Alessandro (2012). "Archivi on line: metafore di metafore. Il caso del portale di 'Una città per gli archivi'". Presentation for the conference "Strage di Ustica XXXII Anniversario" (Bologna, Italy, 2012 June 27th). <http://www.cittadegliarchivi.it/footer/documenti-di-progetto-1/la-progettazione-del-portale-di-una-citta-per-gli-archivi> [last accessed: 01/09/2014].
Alfier, Alessandro and Feliciati, Pierluigi (2013). "Cambio de paradigma en el próximo decenio: el desafío de la Web para los instrumentos de descripción de los archivos". *Tábula*, n. 16, p. 33-49.
Alfier, Alessandro and Kolletzek, Chiara (2013). "Una nuova porta su Bologna. Il portale del progetto 'Una città per gli archivi'". *Teca*, n. 4, p. 71-84.
Agosti, Maristella et al. (2014). "The Evaluation Approach of IPSA@CULTURA". In: Catarci, Tiziana et al. *Bridging Between Cultural Heritage Institutions, Proc. of the 9th Italian Research Conference on Digital Libraries (IRCDL 2013)*. Berlin-Heidelberg: Springer-Verlag, pp. 147-152.
Antonelli, Armando (2012). "Istantanea 'Una città per gli archivi': istituzioni, fatti, persone, tempi, modi, prospettive e storia di un progetto archivistico locale". *Archivi & Computer*, n. 2, p. 7-35.
Bawden, David (1990). *User oriented evaluation*. Aldershot: Gower.
Burton, Antoinette M. (2005). *Archive Stories: Facts, Fictions, and the Writing of History*. Durham: Duke University Press, p. 396.
Candela, Leonardo et. al. (2011). "The digital library reference model". DL.org. <https://www.coar-repositories.org/files/D3-2b-Digital-Library-Reference-Model.pdf> [last accessed: 01/09/2014].
Chapman, Joyce C. (2010). "Observing Users: an Empirical Analysis of User Interaction with Online Finding Aids". *Journal of Archival Organization,* n. 8 (1), p. 4-30.
Daniels, Morgan G and Yakel, Elizabeth (2010). "Seek and You May Find: Successful Search in Online Finding Aid Systems". *American Archivist*, n. 73 (2), p. 535-568.
Dobreva, Milena et al. (2010a). "User and Functional Testing. Final Report". *Europeana Foundation.* <http://pro.europeana.eu/c/document_library/get_file?uuid=1c25ae28-9457-4b0f-be62-654a7cf6c5b7&groupId=10602> [last accessed: 01/09/2014].
Dobreva, Milena et al. (2010b). "Digital Natives and Specialised Digital Libraries: a Study of Europeana Users". In: Kurbanoglu, Serap et al. *Technological Convergence and Social Networks in Information Management*. Berlin-Heidelberg: Springer-Verlag, p. 45-60.
Dobreva, Milena et al. 2012. *User Studies for Digital Library Development*. London: Facet.
Duff, Wendy and Harris, Verne (2002). "Stories and Names: Archival Description as Narrating Records and Constructing Meanings". *Archival Science*, n. 2 (3-4), p. 263-285.
Duff, Wendy and Stoyanova, Penka (1998). "Transforming the Crazy Quilt: Archival Displays from User's Point of View". *Archivaria*, n. 45, p. 44-79.
Exon, Andy (1978). "Getting to Know the User better". *Aslib Proceedings*, n. 30 (10-11), p. 352-364.
Featherstone, Mike (2006). "Archive". *Theory Culture Society*, n. 23 (2-3), p. 591-596.
Feliciati, Pierluigi (2007). *Dall'inventario alla descrizione degli archivi in ambiente digitale: si possono offrire agli utenti risorse efficaci?* Paper for the conference "E-laborare il sapere nell'era digitale" (Montevarchi, Italy, 2007). <http://hdl.handle.net/10760/11159> [last accessed: 01/09/2014].
Feliciati, Pierluigi (2012). "Ask the users, il valore aggiunto della valutazione dei sistemi informativi culturali on-line coinvolgendo gli utenti: il caso del progetto 'Una città per gli archivi'". *Il Capitale Culturale. Studies on the Value of Cultural Heritage*, n. 5, p. 129-144. <http://riviste.unimc.it/index.php/cap-cult/article/view/483> [last accessed: 01/09/2014].
Feliciati, Pierluigi and Alfier, Alessandro (2013). "Archives on the Web and Users Expectations: Towards a Convergence with Digital Libraries". *Review of the National Center for Digitization*, n.

22, p. 81-92. <http://elib.mi.sanu.ac.rs/files/journals/ncd/22/ncd22081.pdf> [last accessed: 01/09/2014].
Fiormonte, Domenico (2003). *Scrittura e filologia nell'era digitale*. Torino: Bollati Boringhieri, p. 343.
Gilliland-Swetland, Anne J. (2001). "Popularizing the Finding Aid: Exploiting EAD to Enhance Online Discovery and Retrieval in Archival Information Systems by Diverse User Groups". *Journal of Internet Cataloging*, n. 4 (3-4), p. 199-225.
González Teruel, Aurora (2005). *Los estudios de necesidades y usos de la información: fundamentos y perpectivas actuales*. Gijón: Trea, p. 181.
Kaner, Cem (2003). *An Introduction to Scenario Testing*. Florida Tech. <http://www.kaner.com/pdfs/ScenarioIntroVer4.pdf> [last accessed: 01/09/2014].
Kyrillidou, Martha and Giersch, Sarah (2005). *The DigiQUAL Protocol for Digital Library Evaluation*. Paper for "Joint Conference on Digital Libraries (JCDL)" (Denver, USA, 2005 June 6th-11th). <http://old.libqual.org/documents/admin/digiqual-jcdl05-v5.pdf> [last accessed: 01/09/2014].
Light, Michelle (2008). *The Endangerment of Trees.* Irvine: University of California, p. 6. <http://www.archivists.org/publications/proceedings/EAD@10/Light-EAD@10.pdf> [last accessed: 01/09/2014].
Meissner, Dannies (1997). "First Things First: Reengineering Finding Aids for Implementation of EAD". *American Archivist*, n. 60 (4), p. 372-387.
Montella, Massimo (2009). *Il capitale culturale*. Macerata: Edizioni Università Macerata.
Numerico, Teresa (2010). "Cercare e organizzare". In: Numerico, Teresa et al. *L'umanistica digitale*. Bologna: Il Mulino, p. 165-197.
Pons, Anaclet (2013). *El desorden digital. Guía para historiadores y humanistas*. Madrid: Siglo XXI de España, p. 318.
Rasmussen, Katja Guldbaek and Petersen, Gitte (2012). "Personas". In: Dobreva, Milena et al. *User Studies for Digital Library Development*. London: Facet, p. 105-114.
Ribeiro, Fernanda (2001). "Archival Science and Changes in the Paradigm". *Archival Science*, n. 1 (3), p. 295-310.
Robertson, Craig (2004). "The Archive, Disciplinarity and Governing: Cultural Studies and the Writing of History". *Cultural Studies/Critical Methodologies*, n. 4 (4), p. 450-471.
Schaffner, Jennifer (2009). *The Metadata Is the Interface: Better Description for Better Discovery of Archives and Special Collections, synthesized from User Studies*. Dublin (Ohio): OCLC Research, p. 18. <http://www.oclc.org/content/dam/research/publications/library/2009/2009-06.pdf?urlm=162923> [last accessed: 01/09/2014].
Scheir, Wendy (2005). "First Entry: Report on a Qualitative Exploratory Study of Novice User Experience with Online Finding Aids". *Journal of Archival Organization*, n. 3 (4), p. 49-85.
Toms, Elaine G. (2012). "Models that inform digital library design". In: Dobreva, Milena et al. *User Studies for Digital Library Development*. London: Facet, p. 21-32.
Trombone, Antonella (2014). "New display models of bibliographic data and resources: cataloguing/resource description and search results". *JLIS.it*, n. 5 (2), p. 19-32.
Tsakonas, Giannis (2012). "Users within the Evaluation of Digital Libraries". In: Dobreva, Milena et al. *User Studies for Digital Library Development*. London: Facet p. 51-61.
Tsakonas, Giannis and Papatheodorou, Christos (2008). "Exploring Usefulness and Usability in the Evaluation of Open Access Digital Libraries". *Information Processing & Management,* n. 44 (3), p. 1234-1250.
Visciola, Michele (2000). *Usabilità dei siti web*. Milano: Apogeo, p. 170.
Yakel, Elizabeth (2003). "Impact of Internet-Based Discovery Tools on Use and Users of Archives". *Comma,* p. 191-200.
Yakel, Elizabeth (2004). "Encoded Archival Description: Are Finding Aids Boundary Spanners or Barriers for Users?". *Journal of Archival Organization*, n. 2 (1-2), p. 63-77.

Yakel, Elizabeth et al. (2007). "Creating the Next Generation of Archival Finding Aids". *D-Lib Magazine*, n. 13 (5-6). <http://www.dlib.org/dlib/may07/yakel/05yakel.html> [last accessed: 01/09/2014].

Notes

[1] English translation from Spanish by the authors. The historians who attribute this mediation power to archivists ask a conceptual change, whose emphasis shifts from archives conceived as static and objective whole of records to archives as the result of a process leaded by archivists, whose finger-prints accumulate on archives, human memory and history interpretation. Therefore the focus becomes the "curatorial power" and the cultural role of archivist, and the embedded relationships between archivists and archives come to the fore. See Burton 2005, Featherstone 2006, Robertson 2004.

[2] See <http://www.ica.org/10207/standards/isadg-general-international-standard-archival-description-second-edition.html> [last accessed: 01/09/2014].

[3] Before the rise of the web, the Centre for Research on User Studies (CRUS) has defined user studies an area of multi-disciplinary knowledge whose aim is the study of information systems and services from the perspective of users behavior (Exon, 1978). In a more specific view, user studies investigate the characteristics, needs, behaviors and opinions of the information systems users (potential or actual). They have as their ultimate goal the development of information services able to respond adequately to users' requests, although for their methodologies they represent an heterogeneous set of research (Bawden, 1990). This definition has to be considered in the light of the paradigm shift of the 80s: close to the studies investigating the users of a determinate information system, a new kind of research appeared, investigating the overall system of motivations, feelings, perceptions of users in the general processes of searching for information. While the first area keeps on to be called user studies, the second one is named, at international level, information behavior or information seeking behavior (González, 2005, p. 33-35, Dobreva et al., 2012, p. 1-7).

[4] English translation from Italian by the authors.

[5] See <http://www.sa-ero.archivi.beniculturali.it/> [last accessed: 01/09/2014].

[6] See <http://www.archiviodistatobologna.it/> [last accessed: 01/09/2014].

[7] See <http://www.ibc.regione.emilia-romagna.it/> [last accessed: 01/09/2014].

[8] See <http://www.iger.org/> [last accessed: 01/09/2014].

[9] See <http://www.provincia.bologna.it/archiviostorico/Engine/RAServePG.php> [last accessed: 01/09/2014].

[10] See <http://www.archiginnasio.it/> [last accessed: 01/09/2014].

[11] See <http://www.regesta.com/cosa-e-xdams/> [last accessed: 01/09/2014]. The native XML application has been developed completely for the web and provides an input record that is fully consistent with the international archival standards. This application is characterized by a set of application profiles of EAD, corresponding to the different archives typologies: paper archives, photographic, sound and audiovisual archives and collections of graphic materials.

[12] See <http://www.loc.gov/standards/mets/> [last accessed: 01/09/2014].

[13] The data are referred to the date of 2014 September 10th.

[14] The data are referred to the period from 2013 April 11th to 2014 September 10th.

[15] *Session* means the period of time during that a user interacts with the portal.

[16] The user studies were interely coordinated by us two, with the purpose to obtain the best possible results by combining the expertise of two archivists with different roles in the project; one involved in the portal development and one entirely out of it, but expert in previous user studies.

[17] Scenarios of use can be defined as “hypothetical stories to help the tester work through a complex problem or test system” (Kaner, 2003).

[18] *Personas*, in user-experience design, were introducted by Alan Cooper in his book *The Inmates Are Running the Asylum* (1999) and could be defined as fictitious characters useful to help solve design questions. They need to be based on research and should be described in narrative form. See also Rasmussen and Petersen, 2012.

[19] For one of the first definitions of *positional goods* see the book of Fred H. Hirsch, *Social Limits To Growth* (1977).

[20]The *merit goods*, introduced as concept in economics by Richard Musgrave, are commodities that an individual should have in any case for the benefit of the entire society, without considering the citizen ability to pay. So these services and goods are provided free, by governmental actions, because they would be under-provided if left to the market forces or private enterprises. Examples include the provision of health services and education services.