

# **Finding a needle in a haystack.**

## **The BEIC Digital Library in search of its space on the Web: a case study**

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**Abstract:** The paper describes the strategies undertaken by BEIC Digital Library in order to find its identity and space on the Web. It will be of interest and value to other digital libraries facing the same challenges or in search of new strategies to promote their collections and monitor their use.

**Keywords:** identity, statistics, online exhibition, navigator, partnership, community involvement, dissemination, Beic, digital library, assessment,

Topic: Formal and methodological foundations of digital libraries, Exploitation of digital cultural heritage collections.

### **1 Setting the scene**

The Biblioteca Europea di Informazione e Cultura (BEIC) was established in Milan “with the purpose of offering the community a state-of-the-art structure which would provide universal access to information and knowledge under any form by sharing online bibliographic and documentary resources from the metropolitan area of Milan and thanks to the extensive use of digital technology”. When its mission was defined in such terms, the library project involved two components deeply interconnected: a physical section intended as a public library hosting a vast collection of items covering all fields of knowledge, both in analogue and digital format, integrated by a digital library largely built on a collection of ancient and rare material which that kind of library could not have ignored, but far too expensive to be purchased on the antiquarian market.

With this perspective in mind, in designing the collection development plan within the feasibility study, a great effort was made to identify the most appropriate bibliography in every area of knowledge - by evaluating factors such as extension, granularity, form of speech, language – in order to offer readers a service of the intended quality.

Over the years the creation of the physical library was postponed over and over again thus making the decision to count solely on the digital component quite inevitable. This has implied a radical reconsideration of the criteria underlying its design, as well as the need to change course of action in regard to the collection development plan, which has since turned into a digital collection and service plan<sup>1</sup>.

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<sup>1</sup> It was decided, before even agreeing on the infrastructure, that each digital library component should ahead conform to international and national standards to ensure interoperability and long term sustainability. Two examples are the format of the images (TIFF, Tagged Image File Format) which meets specifications making it a de facto standard and the images metadata, in which case XML file are coded based on the METS schema (Metadata Encoding and Transmission Standard), whose sections contain metadata compliant with other standards: MARC XML (XML schema based on the standard MARC, Machine Readable Cataloguing), MIX (metadata for Images in XML standard) and PREMIS (Preservation metadata: Implementation Strategies). All these standards are supported either by the World Wide Web Consortium or the Library of Congress and are used by the major digital libraries in the world. Once principles and standards were defined, the infrastructure, which is housed in one of Politecnico di Milano server farms was set up. It is divided into six modules: the Digital Collections Archive (Secure Image, Imago Libris, IBM System Storage TS3310 Tape Library); Repository (Digitool from Exlibris); Cataloguing (Koha); Structural Maps (the software is still under development); Viewer (the basic Digitool METSViewer was customized to support more advanced features, a specific player was developed and Vimeo PRO was purchased); Discovery tool (Primo from ExLibris).

Two main threats derive to the BEIC Digital Library (BeicDL) from the loss of its physical component: a weakened identity and the lack of visibility over the Internet. Because the two issues are so tightly bound, they should be considered together in designing a strategy, or even better a set of strategies, aiming at providing a renovated identity to the DL, thus making its contents more appealing and its services more efficient, and contributing to its popularity among Web users. Identity and popularity don't always mix well in DLs. On the one hand, one can hardly deny that Gallica is rich in both factors. Deeply rooted in a prestigious, centuries-old institution such as the BNF, with an incredible amount of bibliographic and multimedia resources, and a crucial role to play in the international arena, Gallica appears to benefit greatly in terms of identity and popularity. Its digital patrimony, which is constantly increased due to the format conversion of the ancient and rare book collections as well as the acquisition of the digital native current publications, bears witness to the strong identity of that Country, deriving from its literary, artistic and scientific production.

In comparison, Europeana, notwithstanding its undisputed popularity and heavy usage, appears to have a much weaker identity, as a consequence of its being the result of cumulating metadata deriving from projects quite different in nature, scope, quality and criteria. A massive intake of data and the involvement of a wider number of partners were both considered inevitable, maybe even desirable, initially. However, insufficient project coordination and a flimsy connection among its contents has produced what one would hardly perceive as a representation of the European identity. The Great War documentation project is probably the first and more significant effort towards coordination and is leading to the surfacing on that platform of a shared historical and cultural identity.

## 2 BeicDL assessment

By no means has BeicDL dimensions, ambitions, scopes and resources in any way comparable to those implemented by the previous two projects. Nonetheless the management has felt obliged to assess its own perspectives and try and profit from any preexistent experience. To this purpose BeicDL was submitted to a SWOT analysis which provided the results shown in the table below.

| <b>INTERNAL ANALYSIS</b>  |  |
|---|--|
| <p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>● its quite recent history</li> <li>● knowledgeable staff engaged in key technical and bibliographic choices</li> <li>● conformity to national and international standards</li> <li>● suitable technological equipment well supported by an excellent computer centre</li> <li>● flexibility and willingness to react promptly to evolving market trends</li> <li>● low production costs</li> <li>● partnerships with authoritative institutions from the various fields</li> <li>● bibliographic and documentary material of a good quality (as regards cultural interest, typological variety and coverage of knowledge fields)</li> <li>● financial resources adequate to carry out the project for a reasonable number of years</li> </ul> | <p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>● absence of a physical component</li> <li>● need for a severe adjustment of the DL model previously designed and of the collections and services development plan</li> <li>● weakness of the brand</li> <li>● unbalanced bibliographic coverage of the knowledge fields involved</li> <li>● uncertain availability of financial resources in the medium-long run</li> <li>● understaffing even with respect to key roles</li> </ul> |
| <p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>● widespread existence of standards, protocols and models facilitating distribution, aggregation and reuse of data</li> <li>● growing attention towards the availability of cultural contents in the public domain</li> <li>● development of new promotion channels for collections and knowledge</li> <li>● subjects interested in the development of innovative services</li> <li>● growing attention on the part of state, academic and</li> </ul>  | <p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>● signs of great difficulty offered by the national economic frame state of uncertainty in the Italian governmental initiatives in support of culture</li> <li>● widespread incapacity to act as a system and to develop medium-long term planning</li> <li>● present fragility of the BeicDL in the absence of a supporting</li> </ul>   |

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|---|---|
| private subjects, both in Italy and in Europe,<br>towards the possibility of commercial exploitation<br>of cultural objects to subsidize products and<br>services in the public domain <ul style="list-style-type: none"> <li>• widespread interest towards the reuse of know-how<br/>             and technologies developed within the project</li> </ul> | physical institution <ul style="list-style-type: none"> <li>• lack of contact with the current<br/>             (contemporary) bibliographic<br/>             production</li> <li>• difficulty to predefine a specific<br/>             target</li> </ul> |
| <b>EXTERNAL ANALYSIS</b>  |   |

Fig. 1. SWOT analysis data

Data offered by the SWOT analysis enable us to make some broad reflections, before proceeding to a description of the various strategies implemented, in combination with more specific considerations.

### 3 Preliminary reflections

In the first place, the recent history of BeicDL should be taken into account. Many libraries, some Italian ones in particular, find it difficult to combine efficiently their own history, their consolidated traditions, with the perspectives opened by new services, renovated operating methods, users still to be identified to whom to target their wealth of knowledge. In several cases, this has led to the creation of digital libraries whose documents are treated as museum pieces, rather than published following criteria consistent with the digital environment within which they fall. This choice (or missed choice, if you prefer) can be explained in various ways: preference given to the text as the principal medium in transferring knowledge; difficulty in keeping separate the wealth of knowledge from the items hosting this knowledge (in regard to this, one could recall the difference between “bibliotheca”, the bibliography, and “biblioteca”, the library); granting the new search tools (Google, Wikipedia etc.) a lesser status than their printed equivalents; perceiving virtual exhibitions, educational tools and the alike, as trivial compared with the “high”, professional, service the library is bound to provide; last but not least, difficulties to implement new procedures and commitments given the hard times most libraries are currently facing, both in terms of cutbacks and falling staff turnover rates, the latter being of course a very critical issue.

BeicDL is therefore offered the opportunity of thinking in a native digital way, notwithstanding its commitment to be a library in the first place. The presence of young, strongly motivated staff, with a wide spectrum of work experience to get a feel for professional working environments and the taste for new means of expression in their background, provides BeicDL with a richness of opportunities. With their guidance, BeicDL is committed to experiment new ways, to secure alliances, to identify and implement data and service models coming from fields other than libraries and the cultural heritage whenever deemed strategical. In these cases conformity to national and international standards is obviously a basic requirement. Customizations that in the short term could be felt as shortcuts leading to taylor made products, in the case of subjects the size of BeicDL turn after a short period to be way too expensive to maintain and upgrade therefore contributing to the library’s alienation from the web community.

### 4 Swimming in a Blue Ocean

Secondly, BeicDL should give special attention to identifying ways in which it can have its own identity, notwithstanding the absence of a physical library to rely upon. This has to do with going beyond the idea of an individual library and finding, instead, its own setting, its role within the digital ecosystem. In order to explain the underlying philosophy of BeicDL’s strategic choices, inasmuch as its physical component was becoming more and more remote, we should turn to the Blue Ocean Strategy (BOS) metaphor, an economic theory proposed by W. Chan Kim and Renée Mauborgne (2005). Its most successful implementation in the field of cultural heritage is probably the Cirque du Soleil case. Created in 1984 by a small group of underground street performers, the Cirque was seen thereafter by more than thirty-five million people all around the world. Due to the existence of a big leader as Ringling Bros and Barnum & Bailey, that set the benchmark, all the small competitors were only allowed to recreate that business model on a smaller and sometimes unprofitable scale. Cirque Du Soleil’s huge achieving was that they were not competing on the same targets of the leader, but they

created a new unchallenged market space. In other words, they made competition irrelevant. The implementation of BOS consists, therefore, in identifying opportunity for growth and potential for market spaces not yet or not adequately explored. This scenario stands opposite to the one in which the excess of players leads to a ruthless competition that “will turn the ocean bloody red”.

In the case of BeicDL, the decision was not to compete on the same ground as the initiatives of Google Books or digital projects based on huge collections of large national institutions, such as BNF and BVB, but to choose as more desirable such criteria as selectivity and accuracy. Integration in the search tools offered to the users of data and services provided by the latter was also pursued.

*Per se* the decision to identify and fill a market niche is not one which would prove sufficient to define an identity and attract a good number of users. More strategic options are required in order to characterize data and services so as to make them distinguishable and attractive. In the first place comes quality, possibly the highest though bearing in mind the sustainability factor. Digital objects should be of good quality, metadata reliable and complete, descriptions of contents granular, navigational tools diverse and effective. In the second place comes the decision to put metadata and digital objects in the public domain, therefore freely harvestable and reusable in contexts even quite different. Agreements have been made with platforms and shared catalogues targeted to different users with the goal of making BeicDL data visible and active linking points. The third option was to take on editorial activities, focussing internally on virtual exhibitions, such as the Biblioteca idraulica, and externally on a set of entries in Wikipedia. Plans have been made to adopt linked open data to develop a digital reference service. In many ways this is how BeicDL reacts to Karen Calhoun’s suggestion that libraries should become digital *scriptoria*, so reevaluating a feature which is inscribed into their DNA.

The final option, in this summary recognition, is the relationship established with readers, which is not limited to the mere use of resources, but looks forward to collaborating in the creation of new contents, as well as implying the involvement of communities often quite apart from one another.

## 5 Strategies

The strategies implemented to avoid the risks and the weaknesses proceeded from the acknowledgment of the opportunities and exploitation of the strengths.

As already pointed out, the main looming challenges are the loss of identity and the lack of visibility over the Internet: it is therefore important to ensure appeal to the collections, to enhance the services and to promote awareness among the public.

Several actions, resulting from a long period of studies with the goal of maximizing the outcomes given the limited amount of resources, were taken to tackle these challenges.

Firstly partnerships with other institutions were established and metadata were released in the public domain to promote awareness among potential users. Secondly multimedia technologies (online exhibitions and resource navigators) have been developed to ensure appeal to the collections. Eventually communities such as Wikimedia Italia and Material Evidence in Incunabola (MEI) were approached and involved in shared projects in order to boost the services.

An evaluation plan was designed to monitor the achievements of these strategies and discuss future steps. Indeed data provide the essential elements to understand the components of a digital library and the relations between them. Moreover they reveal the impact and effectiveness of the services. Finally the results of the analysis guide the planning of new projects and the allocation of resources.

Data collection and analysis are not performed only at the end of specific tasks or projects, when it is crucial to identify the successful factors and compare the results with other experiences, but also when the activities are in progress, in order to track the evolvments and possibly to reassess the next steps.

In managing gradual though continuous changes to the system over time, BeicDL has adopted and tailored to its scopes the chain-linked model strategy introduced by Stephen J. Kline in 1985, and further described by Kline and Rosenberg in 1986. According to this theory, as opposed to the so-called linear model of innovation, one begins with identifying an unfilled market need, which then drives research and design, redesign and production, and finally making either the new product or the new service available, with feedback loops between all the stages. This process also implies feedback loops with current research and new developments worldwide to fill in gaps. One never knows for sure when the final goal is reached, but still needs to have some

preplanning that is focused on goals, rough overall time schedules, and budgets, and care must be taken not to make decisions that incur large costs or commitments in the early stages of the project.

BeicDL has embraced the constant users involvement model and highly value users feedback since the very first day, believing that learning why some activities work and others fail is a priority.

As recalled by Kyrillidou in his article about assessment protocols published in 2005 "the project-oriented nature of digital libraries makes it difficult to evaluate them as a whole". To overcome this threat and collect qualitative and quantitative data, BeicDL employs tools both independent (Google Analytics) and dependent from the applications in use (in particular Digitool and Primo from ExLibris). This approach, which has the advantage of setting flexible parameters, provides also more reliable results. Furthermore BeicDL follows a strict protocol based on a measurement plan and a rigid policy about data treatment drawn upon best practices and today's data analysis landscape.

The following sections briefly describe the strategies and analyze their impact on pageviews and sessions statistics, where possible. The latter is accounted as sufficiently relevant and reliable although it cannot be considered exhaustive because the evaluation process must combine quantitative and qualitative data.

## 5.1 User communities involvement

The first and most interesting strategy is the active involvement of users. BeicDL has recently partnered with one of the most influential communities on the web, wikipedians, and a small (compared to the previous one) proactive community of professionals, the incunabula specialists.

A shared programme was signed in September 2014 to establish a relationship with the Wikipedia community and make BeicDL a potential reference for editors interested in topics covered by the digital library materials. Wikimedia Italia nominated a consultant<sup>2</sup> (a "wikipedian in residence") who has since been training BEIC staff and identifying interesting matches between the digital library items and various Wiki projects (Wikipedia, Wikimedia Commons, Wikibooks and Wikidata)<sup>3</sup>. Activities are not limited to creating and editing articles. In fact organization of edithatons, donations of books to Wikisource and editors engagement is also performed<sup>4</sup>.

The impact of this project was beyond expectations, not only due to the linchpin role that Wikipedia plays in the Web, but because of the motivation and skills that staff (wikipedian and not) have put in these activities.

By January 8th 2015, 2914 changes were made to over 1100 articles written in more than 90 languages. These include 131 new encyclopedic articles, 2 Wikisource books and 55 accurately selected pictures of 55 works (by 38 authors). The images were uploaded to Wikimedia Commons and are currently in use in more than 500 entries. As a result, references based on BeicDL were also added to each corresponding article.

The edited articles, which now display BEIC contributions, have more than 400 thousands monthly "page views" (requests) according to the Wikipedia statistics<sup>5</sup>. The importance of this partnership is confirmed also by the BeicDL statistics: sessions beginning in Wiki environment generate approximately 30,5% of the traffic<sup>6</sup>.

As for MEI<sup>7</sup>, it is a database specifically designed to record and search copy specific evidence and provenance information of 15th-century printed books (i.e. incunabula). Data regarding ownership, decoration, binding, manuscript annotations, stamps, prices are formalized within a structured database linked to the Incunabula Short Title Catalogue (ISTC), provided by the British Library, thus allowing users to combine searches of bibliographical records (extracted from ISTC) with copy specific records (based on MEI data). Every element recorded is treated as a valuable clue for provenance. Ownership notes, whenever geographically localized and chronologically dated, enable tracking of the movement of books across Europe and through the centuries. Manuscript notes, equally valuable for understanding the readership of the early editions, allow for sophisticated social studies on the use of books, readership and reading.

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<sup>2</sup> The wikipedian in residence is Nemo, wikipedian since 2006.

<sup>3</sup> [http://wiki.wikimedia.it/wiki/Comunicati\\_stampa/Wikipediano\\_in\\_residenza\\_alla\\_BEIC](http://wiki.wikimedia.it/wiki/Comunicati_stampa/Wikipediano_in_residenza_alla_BEIC)

<sup>4</sup> <http://it.wikipedia.org/wiki/Progetto:GLAM/BEIC>

<sup>5</sup> <http://it.wikipedia.org/wiki/Progetto:GLAM/BEIC/2015-11>

<sup>6</sup> The percentage is calculated considering the sessions to the digital objects viewer (METSViewer) from November 1st 2014 to January 7th 2015.

<sup>7</sup> <http://www.cerl.org/resources/mei/main>

Personal and institutional names of ownership are linked to the CERL Thesaurus, where further bibliographical information can be found. This provides links to other editions identified with the specified name, clarifying whether the owner was also an author, thus merging ownership and authorship information. Over 50 editors in as many institutions (ranging from very small to very large) across Europe and North America are currently recording provenance in MEI, thereby contributing to the reconstruction of dispersed collections. This is where BeicDL comes in. Though some of the work needs a direct recognition of the original, a lot of information can be provided by integral good quality digital reproductions, such as those available in BeicDL. Scholars can use the DL in many ways: they can verify the existence of material evidence and identify its nature, use the digital reproduction as a source when recording data in MEI, handle it as a resource for identification queries. On the other hand, the links established in ISTC will direct users cross searching the two databases at CERL to copies available in digital format in BeicDL. At the BeicDL's end, MEI records will be regularly downloaded for integration into the local discovery tool and more links and cross references will then be built, which will hopefully enhance the wealth of information at the disposal of the user. Work is being currently carried out on this project; therefore we are not yet in a position to provide figures on the use of this service. However, we can already provide the number of links from ISTC back to BeicDL documents, which is in the region of 11%<sup>8</sup>.

## 5.2 Partnerships and metadata sharing

Partnerships have always been part of BeicDL priorities, in order to exploit resources, to benefit from team work and to ensure a local, national and international dimension to the digital library.

Agreements on a local basis are well represented by the cooperation with the Braidense National Library<sup>9</sup> to support and manage the Archive of the Regional legal deposit of Lombardy<sup>10</sup>.

On a national level, partnerships have been secured with several institutions such as Istituto Storico Italiano per il Medioevo (ISIME)<sup>11</sup> and Istituto Veneto di Scienze, Lettere ed Arti (IVSLA)<sup>12</sup> in order to provide a wider audience to relevant works that would have otherwise been available to a much more limited community. Additional collaborations are established to exchange materials or participate in shared programmes, such as the one with Museo Galileo – Institute and Museum of the History of Science<sup>13</sup>.

The BEIC Foundation is a member of the Consortium of European Research Libraries (CERL)<sup>14</sup> and The European Library<sup>15</sup>. The collaboration with CERL seeks to share resources and expertise to improve access to European printed heritage. The European Library partnership allows a greater exposure to the digital library resources on a global scale, through its own web portal and the one belonging to Europeana<sup>16</sup> affiliated to the former.

The traffic generated by national collaborations, which are typically based on projects, differs greatly and it is relevant especially at the beginning and at the end of the project, when the impact peaks at about 15% and settles at 2-5%<sup>17</sup>. Another 4% of the audience is guaranteed by international partnerships, in particular 0,4% is generated thanks to The European Library and 9,1% thanks to Europeana<sup>18</sup>. The latter figure is constantly changing and seems to be affected by initiatives and promotions (i.e. current events, virtual exhibitions, etc.). Data from CERL are not available as yet.

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<sup>8</sup> The percentage is calculated by counting the viewers sessions from September 1st 2014 to January 7th 2015.

<sup>9</sup> [www.braidense.it](http://www.braidense.it)

<sup>10</sup> <http://www.beic.it/en/articles/legal-deposit>

<sup>11</sup> [www.isime.it/](http://www.isime.it/)

<sup>12</sup> [www.istitutoveneto.it/](http://www.istitutoveneto.it/)

<sup>13</sup> [www.museogalileo.it/](http://www.museogalileo.it/)

<sup>14</sup> <http://www.cerl.org/>

<sup>15</sup> [www.theeuropeanlibrary.org/](http://www.theeuropeanlibrary.org/)

<sup>16</sup> <http://europeana.eu/>

<sup>17</sup> Data are based on the collaborations with IVSLA and ISIME. The percentages are calculated by counting the OPAC searches based on the institution name or redirects from the institution website from July 1st to August 31st (ISIME) and from September 1st to January 7th.

<sup>18</sup> The percentage is calculated considering the sessions to the digital objects viewer (Metsviewer) from December 1st 2014 to January 7th 2015.

As a general policy BeicDL provides descriptive metadata under the CC0 license<sup>19</sup>, which includes the waiving of all rights to the extent permitted by law; therefore it is allowed to copy, modify, distribute and use, even for commercial purposes, all the data without any limitation. This policy is in place to encourage and facilitate the reuse of the great quality BeicDL metadata. An example of reuse is visible on the the Biblioteche civiche torinesi OPAC<sup>20</sup>, where a link to the BeicDL resources is available<sup>21</sup>.

This approach provides crawlers with the chance to harvest the data and make BeicDL items available directly through main search engines such as Google and Yahoo.

It is difficult to establish a quantitative value to this figure because results will show on the long period. An estimated figure is 0,5%, although it takes (necessarily) into account only pipes that provide links back to BeicDL domains<sup>22</sup>.

### 5.3 Resource navigators and online exhibitions

As recalled by the Handbook on virtual exhibitions and virtual performances, an INDICATE project publication, the creation of multimedia tools for the exploration of materials is considered one of the most important activities of cultural institutions because it encourages and strengthens the relationship with the users. The advantages of multimedia, which does not replace the physical experience, are clear and include the possibility of browsing items following personal patterns and the chance to engage a greater number of users. This approach also encourages feedbacks and gives visitors the possibility to cooperate to the development of the exhibition itself. Furthermore, documents and valuable works can be enjoyed comfortably, without compromising their preservation.

There are many typologies of multimedia tools and infinite combinations of resources, however BeicDL decided to focus on two of the most powerful: online exhibitions and resource navigators.

An online exhibition is a hypermedia collection accessible on the web, which is made of digital objects linked accordingly to a topic in a system architecture designed to deliver engaging and user friendly experiences.

Museums such as MoMA<sup>23</sup> and Hermitage<sup>24</sup> have made successful online exhibitions for many years, and recently more libraries have ventured into this path as well, creating exhibitions like “Discovering Literature: Romantics and Victorians”<sup>25</sup> by the British Library<sup>26</sup> and “l’Art du Livre Arabe”<sup>27</sup> product of the Bibliothèque nationale de France<sup>28</sup>.

BeicDL is currently implementing a virtual exhibition, which is part of a larger project named Biblioteca Idraulica about hydraulics, in collaboration with the department of Agricultural and Environmental Sciences - Production, Landscape, Agroenergy of the University of Milan<sup>29</sup>, and funded by Cariplo Foundation<sup>30</sup>.

The project involves the digitization of 800 works, the publication of thematic monographs and the design of educational tools devised for use in high schools<sup>31</sup>. The topic was selected bearing in mind the undeniable role played in the European culture by water and to celebrate the great tradition of Italian hydraulic which is still little known; eventually the imminent Expo 2015, which will be held in Milan, with its programme “Vie d’Acqua”<sup>32</sup> has also played a role.

The goal is to attract a well-defined audience who is looking for high-level content, but is not specialized, and to provide an interpretative and appealing key to the digital collection that otherwise may have a limited public.

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<sup>19</sup> <http://creativecommons.org/publicdomain/zero/1.0/>

<sup>20</sup> <http://bct.comperio.it/>

<sup>21</sup> Qui un esempio: <http://bct.comperio.it/opac/detail/view/sbct:catalog:44869>

<sup>22</sup> The estimate takes into consideration the viewer sessions from known pipes and traceable search engines from September 1st to January 7th.

<sup>23</sup> [www.moma.org/](http://www.moma.org/)

<sup>24</sup> [www.hermitagemuseum.org/](http://www.hermitagemuseum.org/)

<sup>25</sup> [www.bl.uk/romantics-and-victorians](http://www.bl.uk/romantics-and-victorians)

<sup>26</sup> [www.bl.uk/](http://www.bl.uk/)

<sup>27</sup> [expositions.bnf.fr/livrarab/](http://expositions.bnf.fr/livrarab/)

<sup>28</sup> [www.bnf.fr/](http://www.bnf.fr/)

<sup>29</sup> [www.disaa.unimi.it/](http://www.disaa.unimi.it/)

<sup>30</sup> <http://www.fondazionecariplo.it/en/index.html>

<sup>31</sup> <http://www.beic.it/it/articoli/biblioteca-idraulica>

<sup>32</sup> <http://www.expo2015.org/it/cos-e/perche-milano-/vie-d-acqua>

The exhibition will be online on February and will be constantly upgraded with new articles to keep it stimulating, enjoyable, and up to date.

The BeicDL pageview estimate is around 4%, a fairly high impact considering the specificities of the project<sup>33</sup>. Navigators are graphical representations of data, which allow users to consult and interpret complex sets of data in a user friendly format. BeicDL metadata are descriptive and administrative and the goal is to provide new interpretative keys that allow users to combine data in different ways than those provided by the catalog.

Two installations are currently available to the public: the authors navigator and the Lombard publishers navigator.

The authors navigator<sup>34</sup>, is based on the digital library metadata and aims at compensating for one of the natural deficiencies of catalogs: the ability to combine information based on authors rather than works. The navigator lists all the authors and has filters depending on the date of birth and thematic collections.

The Lombard publishers navigator<sup>35</sup> is designed bearing in mind the specificities of the Archive, a unique reality that engages stakeholders like publishers, which usually have no contact with libraries services.

It allows users to display on a map the location of all the regional publishers and shows their annual production based on filters. Data were derived from the OPAC combined with an administrative database constantly updated by the Archive staff.

The navigator has ended up being more accurate than ISTAT data<sup>36</sup> (for instance in 2010, 535 publishers were tallied compared to the 331 notified by ISTAT).

The impact of these tools is not as high as one would have expected. The combination of the two covers the 2-2,5% (1,72% Authors, 0,34 Lombard publishers) of the website sessions, although it is not possible to calculate the use of these tools once opened<sup>37</sup>.

## 6 Final considerations

Data analysis and evaluation plans have nowadays a central role in digital libraries administration and decision making.

Analysing all gathered data, it is clear that referrals play a crucial role in the BeicDL promotion strategies and that the results are paying off. The 75,9% of digital objects access are due to them, while the 22,9% are assignable to the OPAC and the remaining are for the great majority direct links<sup>38</sup>.

The percentage of new versus returning visitors is also crucial and strategies are being developed to retain as many users as possible. Currently new visitors are 65,1% of the total<sup>39</sup>.

An often underestimated parameter to take into account when analysing the data is the number of sessions activated by crawlers. It is crucial to set filters that discern unique visitors considering that crawler sessions may add up to 45% under certain circumstances<sup>40</sup>.

Two relevant aspects that will not be discussed here, but have a growing role to play are social media and mobile technologies. In the Beic Foundation scenario 4,1% of sessions starts in social networking platforms, 10,52% of users connect via mobile and 5,5% via tablet<sup>41</sup>. These figures are growing very quickly and need to be constantly monitored as well as taken into account when working on new features and services.

Data have been calculated, unless differently stated, based on a weighted arithmetic mean between BeicDL applications, although substantial differences occur sometimes between data coming from different applications

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<sup>33</sup> The estimate is based on the current impact of the Biblioteca Idraulica collection on the OPAC (2,04%) and the Beic Foundation website (0,78%) from September 1st to January 7th.

<sup>34</sup> <http://www.beic.it/it/autori>

<sup>35</sup> <http://www.beic.it/it/content/gli-editori-lombardi>

<sup>36</sup> <http://www.istat.it/it/archivio/64919>

<sup>37</sup> Data are calculated considering the Beic Foundation website sessions from September 1st 2014 to January 7th 2015.

<sup>38</sup> The percentages are calculated considering the sessions to the digital objects viewer (Metsviewer) from September 1st 2014 to January 7th 2015.

<sup>39</sup> The percentage is calculated considering the sessions to the digital objects viewer (Metsviewer) in November; the same figure was 70,5% in September.

<sup>40</sup> The percentages are calculated considering the sessions to the digital objects viewer (Metsviewer) from September 1st 2014 to January 7th 2015.

<sup>41</sup> The percentages are calculated considering the website statistics from September 1st 2014 to January 7th 2015.



(web portal, discovery tool and the repository). For example the percentage of new visitors is quite obviously much higher in the portal than in the discovery tool.

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