The deployment of an e-book consultation and loan service: the experience of the Open University of Catalonia Library

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Abstract
CAT: La Biblioteca de la UOC (UOC Library) ha ofert durant tres mesos (octubre-desembre 09), en fase de prova pilot, un servei de consulta i préstec de lectors de llibres electrònics (e-readers). Aquest nou desplegament s’ha desenvolupat en consonància amb l’aposta general de la Universitat en innovació en tecnologies aplicades a l’educació, i la voluntat de potenciar les col·leccions de llibres electrònics i l’ús dels dispositius de lectura de llibres electrònics com una extensió més de la tecnologia del Campus 5.0, en el suport a l’aprenentatge dels seus estudiants durant la seva formació a la Universitat. Aquest treball presenta en detall les especificacions de la prova pilot, a més de contenir una anàlisi i avaluació dels resultats obtinguts: punts forts i punts febles, relació dels aspectes a millorar i modificar, de cara a la consolidació final del servei.

ES: La Biblioteca de la UOC (UOC Library) ha ofrecido durante tres meses (octubre-diciembre 09), en fase de prueba piloto, un servicio de consulta y préstamo de lectores de libros electrónicos (e-readers). Este nuevo despliegue se ha desarrollado en consonancia con la apuesta general de la Universidad en innovación en tecnologías aplicadas a la educación, y la voluntad de potenciar las colecciones de
EN: The UOC Library piloted an e-reader consultation and loan service during October to December 2009. This project was developed in line with the UOC’s commitment to technological innovation applied to university learning and education and its intention to promote the use of e-readers and e-books as an extension to UOC 5.0 Campus Technology in support of student learning. We describe the pilot project and analyse and evaluate results in terms of strong and weak points and possible improvements.

Keywords
CAT: Llibres electrònics, dispositius de tinta electrònica, lectors de llibres electrònics, Biblioteca Universitària, Biblioteca Acadèmica, Biblioteca Virtual, Universitat Oberta de Catalunya, UOC, UOC Library, Servei de préstec
ES: Libros electrónicos, dispositivos de tinta electrónica, lectores de libros electrónicos, Biblioteca Universitaria, Biblioteca Académica, Biblioteca Virtual, Universitat Oberta de Catalunya, UOC, UOC Library, Servicio de préstamo

1. Introduction

Since 2008, but particularly 2009, we have witnessed a growing interest in technological advances in electronic readers (e-readers) in aspects such as black-and-white and colour, electronic ink, tactile screens, screen sizes, wifi connectivity, etc. There are now as many options as needs, in fact. It seems, moreover, that this technology will become widespread in the coming years. For some, this development represents a business opportunity for the information and communications technology (ICT) sector; for others it represents an opportunity to change the publishing business model.

University libraries providing access to learning and research resources are playing a key role in these technological advances. Some non-virtual libraries already loan audiovisual and portable devices, including, more recently, e-readers. Examples include the Gabriel Ferraté Library attached to the Technical University of Catalonia (UPC), the Complutense University Library in Madrid and the University of Granada Library, to just mention a few.
The Open University of Catalonia (UOC) Library offers its community a range of traditional services in an innovative way—online—from the UOC Virtual Campus, from which it also offers other services adapted to new knowledge fields and new information access and distribution modes.

As students at an online university, users of the UOC Library obviously have the necessary equipment to pursue their studies, so why the decision to provide an e-reader service? The main reason was to offer library users access to the many different kinds of learning materials available in the UOC through a single device that would facilitate student study and learning and with the important advantage that electronic ink would be read rather than a computer screen. The aim was also to enhance access to and use of the e-book collections subscribed to by the UOC Library.

The UOC Library adapts on an ongoing basis to ITC developments in an endeavour to meet the needs of its users, whether students, ex-students, teachers, researchers or management staff. In Spain, however, relatively little content is available that is suitable for electronic devices and even less for e-readers. Digital lending, moreover, is not as yet widely practiced. These circumstances are likely to slow down any large-scale deployment of e-reader consultation and lending services by university libraries. The UOC Library is in a somewhat better position, as one of the UOC premises is the development of in-house teaching materials suitable for reading and annotation in an e-reader.

In 2008, the UOC’s Department of Educational Technology, in active cooperation with the UOC Library, launched a project called ‘TRIA! El llibre electrònic a la UOC’ (TRIA). The project was aimed at further facilitating learning by offering UOC-developed learning materials and resources in multiple formats, leaving the user to choose their preferred format. Currently, around 60% of all UOC-developed materials are available as audio-books (mp3 and DAISY zip files) or video-books (text and mp4) or in formats such as mobipocket (a text format for portable devices, e-books and computers), ePub (an e-book format) and PDF (A6).

It is against this background that the UOC Library developed a pilot project to implement an e-reader consultation and lending service, encompassing both content and device (that is, electronic collections and an e-reader) in a single package.
The main aim of the e-book consultation and lending project was to support learning, teaching and research by the UOC community by facilitating access to and use of UOC-developed learning materials, the UOC’s collection of e-books and the information sources subscribed to by the UOC. The service was piloted between October and December 2009, in a way designed to permit the UOC Library to make an in-depth analysis of the results, with the aim being to ultimately roll out a full-scale service adapted to user needs.

Below we describe the piloted project in detail. We also analyse and evaluate results in terms of strong and weak points and aspects to be maintained, improved or modified, with a view to definitively rolling out the service.

2. The e-book consultation and lending service: management, resources, users and diffusion

2.1. Background

The design of the new e-reader consultation and lending service was guided by the virtual nature of the UOC Library. The aim, from the outset, was to enhance the loan service and provide improved access to UOC-developed content and other resources. Even though the UOC Library itself is virtual, it was decided to also offer an in-situ consultation service through the UOC’s network of support centres.

The e-reader loan service plan was to offer users the use of an e-reader for a specific period of time so that they could fully avail of the UOC Library resources. The consultation service, meanwhile, was aimed at offering users the possibility of accessing the entire digital collection of UOC learning materials in situ in UOC’s network of support centres.

An e-reader service of this kind facilitates access to materials, reduces the cost of acquiring hard-copy materials and publications and ultimately contributes to achieving paperless content production. In terms of UOC management, it reduces the cost of collection maintenance and upkeep and frees up space in support centres where, to date, UOC-developed teaching materials have been made available in hard-copy format.

2.2. Users
With a view to responding to new information access needs, the UOC Library piloted a consultation and lending service based on making e-readers available to students, teachers, researchers and management staff. It was decided to offer the service to all UOC users, irrespective of the sub-community they belonged to, rather than use a sample from a single profile of UOC users.

For reasons of logistics, it was not possible to offer home delivery of the e-readers (as happens with UOC materials). Access to the service was limited, therefore, to users who could collect and return the e-readers personally to the support centres.

2.3. E-readers

The pilot was implemented using the iRex Digital Series 1000S for the consultation service and the iLiad Book Edition for the lending service. A total of 15 devices were loaned and two devices were made available in each support centre.
Table 1. Specifications for the two e-reader models used by the UOC Library.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRex Digital Series 1000S</td>
<td></td>
</tr>
<tr>
<td>E-ink</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>535g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>217 x 268 x 11.9 mm</td>
</tr>
<tr>
<td>Screen size</td>
<td>10.2 inches</td>
</tr>
<tr>
<td>Resolution</td>
<td>1024x1280</td>
</tr>
<tr>
<td>Tactile</td>
<td>yes</td>
</tr>
<tr>
<td>Grey scale</td>
<td>16</td>
</tr>
<tr>
<td>Memory card</td>
<td>SD, SDHC</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Wifi, USB 2.0</td>
</tr>
<tr>
<td>Memory</td>
<td>128MB</td>
</tr>
<tr>
<td>Battery life</td>
<td>8000 pages</td>
</tr>
<tr>
<td>Formats</td>
<td>Mobipocket, HTML, TXT, PDF, JPEG, PNG, GIF, TIFF and BMP</td>
</tr>
</tbody>
</table>

These models were selected mainly because they received the highest scores from UOC students in an analysis carried out under the TRIA project. They also had features that were considered essential for our purposes: they were easy to use and navigate (tactile screen), they allowed interaction with content (underlining and note-making), they had connectivity (wifi) and they supported the main formats used for UOC-developed materials (ePub, mobipocket and PDF).

Each loaned e-reader was loaded with a collection of English literature e-books and a user guide for the device, leaving users, depending on their profile and academic needs, free to load any other electronic documents of interest to them. E-readers made available for consultation in UOC support centres could be loaded in situ with whatever content was of interest to the user.

2.4. Service management and operation

For both the consultation and lending services, regulations were drawn up that were based on the UOC Library consultation and lending service but adapted to the specific requirements of the e-reader service.

Apart from the above-mentioned exclusion of home delivery, loan was limited to 15 days for all users, irrespective of profile, and renewal was not allowed, thereby ensuring that a maximum possible number of users could
use the service during the pilot phase. Likewise, the consultation time in UOC support centres was limited to two hours.

Users were required to sign an undertaking as a way of ensuring appropriate use of the devices.

Technical details on the component parts of the devices (battery, battery charger and optical pen) were also inventoried in accordance with the regulations.

Given the cost of the devices and the exceptional nature of the service, the regulations included a section covering infringements of the terms of use and fines for changes in the system configuration or damage due to misuse and failure to return the device, sanctioned with, as the case may be, indefinite suspension of access to the service and to the UOC Library or the requirement to replace or cover the cost of replacing the device. The regulations also specified potential users and consultation and loan conditions.

In terms of document management and physical e-reader management, it was considered convenient and cost-effective to use the internal management system based on Millennium (the bibliographic cataloguing application used by the UOC Library) to manage loans, reservations, users, etc. The Cataloguing Service technically and physically managed the e-readers as if they were just another hard-copy publication, completing the records, however, in such a way as to distinguish them from other bibliographic records. Basic details on brand, model and screen size were recorded for each device in a similar manner to hard-copy publications. Users could thus request the loan of an e-reader from the catalogue or reserve it online through their personal page, just as they do for other materials.

In terms of physical handling all the component parts of the e-reader were inventoried (energy sources, USB cables, optical pens, user guides, etc) and labelled as the property of the UOC Library. The content of each e-reader was also annotated in detail in the library catalogue.

The borrowing system was very similar to that for UOC Library documents. The e-reader could be directly reserved online through the Online Public Access Catalogue (OPAC). An OPAC shortcut was included in the OUC Library home page and in the e-reader service information web page and
users could consult and manage reservation and loan through their own personal page. When an e-reader became available, an email alert was sent to the next user on the waiting list, indicating that the e-reader could be picked up from the user's indicated support centre.

Returned devices were checked to ensure that they could be re-loaned in accordance with the UOC Library regulations regarding the service. In other words, they were checked to make sure they functioned correctly, documents and content supplied by defect were re-loaded anew (to correct possible manipulations) and documents uploaded by the previous user were deleted.

To ensure the continuity of the service, two of each model of e-reader were kept in reserve to replace defective e-readers.

2.5. E-book content

A selection of 40 English literature titles, supplied with the device when purchased, was loaded by defect in the e-readers and so offered to all e-reader users. The user was also free to load documents in digital format from any of the collections subscribed to by the UOC Library, from free-access repositories and from collections of UOC-developed materials.

With a view to informing potential users on resources and access to documents in formats suitable for e-readers and explaining how to use digital collections, the UOC Library created a web page that brought all this information together in one location. As well as providing up-to-date information on the pilot, the page provided a shortcut to the widget for searching electronic resources (MetaLib e-books), information regarding the e-book collections for different disciplines subscribed to by the UOC Library that described their content, conditions of use and download and document downloading procedure. The web page also provided a shortcut to the widget for searching UOC-developed learning materials and a list of websites offering free access to e-books.

Subscription e-books offered by the UOC Library include 1,800 technical and computer science monographs (Lecture Notes in Computer Science), 4,600 specialist e-books on economics, sociology, anthropology, political science, literature, history, education, art, philosophy, psychology, linguistics, documentation and library science (NetLibrary), 816 e-books on technical and computer subjects (Safari Tech Books Online), 2,700 e-books covering
a number of disciplines (Springer E-books) and 358 e-books on management, economics and business, computer science, geography, history, humanities, linguistics, education and the social sciences (MyiLibrary).

During the pilot, the e-book collection was augmented by a collection of over 500 reports on the Asian world (Business Insights-Access Asia), 1,768 Palgrave Macmillan and Nature Publishing Group e-books on economics, business and finance, language and linguistics, politics and international studies, Palgrave Connect e-books on social and cultural studies, Elsevier e-books on business management, tourism, computing, finance, psychology and communication, 60 Emerald e-books on business management and economics and 35 Emerald e-books on the social sciences.

2.6. Publicizing the e-book service

An information campaign regarding the pilot e-reader consultation and loan service had two main components. A web page was created to offer this differentiated service and to place all information on operation, the e-readers and access to content in a single location. In addition, the UOC Library used its normal internal and external communication channels to inform the university community of the project.

An important commitment was made to broadcast the initiative to outside media. Thus, press releases were published in the UOC portal and the UOC Walk In newsletter, news items were published in the Universia portal and in Europapress, interviews were conducted with Catalunya Radio and RAC1 Radio and news items were included in the Levante and El Mercantil Valenciano newspapers and in the Press Releases portal, among others.

The web page and the internal and external publicity campaign, which aimed to inform the maximum number of potential users of the project, raised great expectations regarding the service, the UOC Library and the UOC as an institution.

In the three months of the pilot, 14,382 visits were received and 28,845 pages were consulted through the e-reader web page, equivalent to an average of 2.01 pages viewed per visit. Visits originated in 82 different countries, mainly Spain (13,174), followed by Mexico (247), Colombia (117), the United Kingdom (80), Germany (70), Argentina (67), Andorra (67), France (49), the United States of America (45) and Venezuela (33).
3. Results analysis and evaluation

The UOC Library based its analysis and evaluation of the results and success of the pilot e-reader consultation and loan service project on the following information:

- E-reader loan and reservation data supplied by the UOC Cataloguing Service.
- The results of a user satisfaction survey that evaluated the service, e-readers and content, conducted by the UOC Library once the pilot concluded.
- Comments on the service communicated in emails to the UOC Library or through the standard UOC Library communication channels and comments made at information desks in the UOC support centres.

3.1. E-reader loan and reservation data

The 15 e-readers available for loan between October and December 2009 (92 days in total) were loaned out 37 times for 15 days at a time.

Just over half (51%) of the users were students. However, the success of the service among management staff members (35%) was notable, probably due to these being more aware of the pilot project.
As far as use was concerned, 90% of e-reader use was through the lending service.

Although the pilot concluded on 31 December 2009, the service was continued without interruption and some 300 users accumulated on the waiting list.

During the pilot, the OPAC received 4,036 visits.

3.2. User satisfaction survey

The UOC Library designed a survey to assess user satisfaction with the e-reader consultation and loan service, with questions regarding the service itself, the device and the content. Of the 37 questionnaires sent to users, 29 were completed.

3.2.1. Satisfaction with the service

The following conclusions can be drawn from the survey:

- 69% of users rated the in-situ support centre e-reader consultation service positively or very positively, compared to 3% who rated it negatively, with the remaining 28% stating that they did not know or not responding (DK/NR), probably because they only used the loan service.
- 90% of users rated the e-reader loan service positively or very positively, compared to 10% who rated it negatively or very negatively.

As for aspects of the service that required improvement, users were dissatisfied with the time limitation on the loan. They also requested an increased number of e-readers to be made available and asked for the service to be offered to all users, irrespective of their location.

3.2.2. Satisfaction with content

Of the users who responded to the survey, 52% found the UOC Library to be defective in terms of the materials available to be read on e-readers.

The content available was not fully adapted to the e-readers and, according to the respondents, this was an area where improvements could be made in terms of better adapting to their needs.
The comments revealed that although users positively rated the widget for searching UOC materials in multiple formats, they rated very negatively the fact that there was no better search option for materials, based on an index according to subjects, courses, authors, etc.

Most users commented that they used the e-reader to download PDF articles from the UOC Library databases and that they had hardly used the collections of e-books.

The users who did consult the e-books commented that they needed more books in Spanish and Catalan and also less technical and more multidisciplinary books covering a wider range of topics.

To sum up, the information gleaned from the survey indicates that the widget for searching UOC materials did not enable the user to always obtain the materials they needed. Furthermore, the electronic collections available commercially and through the UOC Library could not be loaded onto these e-reader models and so were not considered suitable for meeting the needs of university library users. In general, therefore, the offer of electronic collections that can be read using e-readers needs to be enhanced.

As for access to electronic content from the UOC Library e-book web page, 38% and 34% of the users found this to be easy or relatively easy, respectively, compared to 28% who found it difficult.
According to user profile, students (36%), compared to management staff (22%) and teaching staff (17%), had greater difficulty in accessing content. This may be due to the fact that, given the nature of the UOC, management and teaching staff are more used to working in a virtual environment.

3.2.3. Satisfaction with the e-reader

This section of the questionnaire asked users about on-screen reading comfort, resolution, formats and e-reader functions.

The data reveal that most users (72%) found it easy to load content in the e-reader for subsequent consultation.
Likewise, most users (83%) considered that on-screen reading was comfortable, with nearly all the users (92%) of the opinion that content could be read perfectly well on the e-reader.

However, a large proportion of users did not find the e-reader functions clear, with 45% of this opinion compared to 55% who indicated having no difficulty.

Nearly half the users indicated, however, a need for more usable and practical e-readers with more user-friendly functions and also for better user guides to be developed by the UOC Library.

Other observations of interest regarding functioning were the following:

- A tactile screen was preferred to one operated using an optical pen.
- E-readers should have a dictionary installed
- E-reader response to user commands was rather slow.

4. Conclusions

Given the success of the three-month e-reader pilot project, it was decided to continue offering the service after the pilot concluded on 31 December 2009 following, for the moment, the same operational guidelines established for the pilot.

The results of the pilot were studied and analysed in January 2010 with a view to implementing improvements and laying the groundwork for definitive
provision of the service and its integration with other services offered by the UOC Library.

Some of the improvements that need to be made to adapt the service better to users in its deployment phase are listed as follows:

- An e-reader that is more usable, practical and user friendly for UOC users needs to be identified.

- Demand is such that the number of e-readers available for loan needs to be increased.

- Technical processing aspects include a need to enrich the bibliography records, improve access, modify both the regulations governing the service and the e-reader user guides and digitize signature of the conditions-of-use agreement.

- In terms of content, the e-book collection needs to be augmented and thematic gaps need to be filled so as to better adapt it to user needs.

- In terms of communicating the service, the e-reader service web page needs to be modified to enhance internal and external communications regarding the service.

Once these, and any other possible improvements that may be detected before the service is fully deployed in April 2010, are implemented, it is anticipated that UOC Library users will be able to avail of an e-reader consultation and loan service that is fully adapted to their needs.

5. Acknowledgements

Implementation of the e-reader consultation and loan service was possible due to the efforts of all the UOC Library staff. We are particularly grateful to Xavier Duran and Francesc March for their technical support, Beatriz Benítez for her work on managing the e-book collection and content, Gema Santos for her work on communicating the initiative and Mònica Bonich for her work on the internal management of the service and for establishing links with UOC researchers.

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