

## **Business planning for digital libraries: Case studies**

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### **1. The creation of the Digital Library of Catalonia**

The Consortium of Academic Libraries of Catalonia (CBUC) was formally set up in 1996 with the aim of creating and maintaining the collective catalogue of the universities of Catalonia (CCUC) (Anglada 1999) and soon extended its activities to related fields, such as setting up interlibrary loan in 1997, and the creation of a database of journals' tables of contents in 1998. Its first experience of joint purchasing was not of electronic information, but of barcodes for automating library loans. After that, the Consortium drew up a catalogue of the databases subscribed to by the member libraries of the CBUC in order to determine the degree of duplication in the purchases made by them with a view to negotiating discounts.

In late 1997 the CBUC presented the project of consortial purchasing of databases to the vice-presidents responsible for research, who approved it and expressed their interest in including electronic journals in the joint purchases. As an umbrella for its activities, the CBUC decided to create the Digital Library of Catalonia (BDC), which was to "provide a common core of electronic information for all users of the libraries of the CBUC". The BDC project was presented to the government of Catalonia in 1998 and funding was obtained for the period 1999 to 2001. The first licences were purchased in late 1998 and the first information resources subscribed to by the Consortium were made available in early 1999. These were local and international databases and the e-journals of Academic Press. The first products were purchased with government funding, but it was soon discovered that for further purchases the members of the CBUC would have to provide their own funding.

The initial selection criteria for determining which products could be licensed consortially were the interests of members, the conditions of access and the cost, but over the years the publishers' pricing models turned out to be the major factor. Some products that clearly met the first two conditions failed to meet the third and therefore had to be rejected.

### **2. Growth and evolution of the BDC**

Due to the technological development and the situation of the information market in 1998, the majority opinion was that the products included in the BDC would be bibliographic databases subscribed to only by members of the CBUC and installed locally on servers of the consortium. The situation evolved rapidly, however, and the period of creation and consolidation of the BDC between 1998 and 2001 showed us that the priority of joint licensing would be e-journals, that other institutions in addition to the universities of the Consortium were interested in joint licensing, and finally that the

time of local installations had ended and that at the start of the 21st century information would be accessed by remote connection to the Internet.

Nowadays a digital library means online access to full text and other sorts of digital objects, but in Catalonia in the late 1990s it meant databases on CD-ROM. Projects involving access to journals had been very limited in scope (for instance, no European library was able to participate in Elsevier's TULIP project) and the great step forward of the time was the local installation of bibliographic databases that could be accessed through a LAN or WAN network. However, the priority soon shifted towards full-text resources—mainly journals but also books.

During the first few years of the BDC the licences were only for the member institutions of the CBUC, but they soon started to include universities that were not members. These were of two types: private universities in Catalonia and public universities that were geographically close to those of the CBUC. The inclusion of these institutions in the joint licences led to the creation of a new type of member, associated members, which initially only participated in the licensing but soon started to participate in other cooperative activities. This stage of licensing all resources for all members came to an end in 2005, when some resources began to be licensed only for members who wished to subscribe to them.

To complete the overview of the evolution of the BDC, we must mention two aspects, one involving finance and one involving content. We were initially convinced that joint action by the Catalan universities would attract “central money” from the government for licensing, but this was not the case. The BDC was created thanks to grants from the Generalitat (government of Catalonia). This was used as seed capital. The amounts were never substantial, but they allowed deals to be reached. This funding now covers approximately 15% of the cost of the licenses, but is far from the 50% that we thought would be obtained in 1998. Finally, the vision of what a "digital library" is has also changed. Whereas all efforts were initially concentrated on licensing, it was soon seen that this activity had to be complemented by the electronic information resources produced in Catalonia and the creation of our own e-repositories (Anglada 2005).

### **3. Pricing models and cost sharing**

The history of consortial purchasing has been dominated by the pricing models for electronic resources. In the first few years of its history the BDC had to undertake a series of negotiations with the suppliers in order to lay the basis for an understanding and establish a pricing model that was considered acceptable by the CBUC. Until that time the pricing model of journals and databases was the unit price, and purchases were made through agents. The possibility of sharing electronic information and purchasing jointly direct from suppliers changed the rules of the game.

Consortia and publishers slowly introduced a win-win system in which the exceptional increase in the information offered allowed the consortia to obtain additional funding to pay for it. This was not easy. Some of the models that reached us had been established in a North American context and were unsuitable for the situation in Catalonia. For example, there were "cost-per-campus" models which were inapplicable in central and

southern Europe, where there are practically no campuses of the type found in English-speaking countries (Anglada 2002).

It was now necessary to find a formula for cost sharing within the Consortium. As the members of the Consortium were all within the public sector, it was attempted to find an egalitarian formula. Some members of the Consortium had traditionally spent more than others on bibliographic collections, so it was attempted to reduce their expenditure and increase that of the members who had previously had fewer subscriptions. At the CBUC the *Big Deal* meant that the members who gained least in titles gained most in cost and vice versa. The cost-sharing formula has three elements: 20% is shared equally, 30% according to the size of the institution, and the remaining 50% according to past expenditure. Additionally, the funding obtained from the government is not used to reduce the cost of existing licences but to facilitate new deals. This means that the government funding is used to subsidise the cost of the universities that would have to pay extra for a licensing agreement due to the application of the formula. Those who spend most thus obtain a saving, those who spend least do not have an extra cost, and all members can obtain the desired content.

The first *Big Deal* agreements were followed by pessimistic comments on their sustainability. It was argued that once the consortial deals had been established, the publishers would raise the prices and the libraries would be too weak to do anything about it. This did not prove to be the case. Although the first agreements were difficult to establish, renewal has been fairly straightforward and the annual increases have been limited. Furthermore, the contracts have become very similar and licensing, which was a slow process for the first consortial licences, has been simplified (Anglada 2003).

In around 2005, when the BDC had reached a stage of maturity, the Consortium considered the possibility of changing the internal cost-sharing model. The reason for this was that the formula used took into account previous expenditure on journals, which over the years had become a less relevant factor in joint purchasing. However, the attempts to change the cost-sharing model failed because any change meant that some members would pay more and others less. After examining different possibilities for new formulas and rejecting the possibility of applying usage as a cost-sharing parameter, it was decided to maintain the imperfect existing formula, which offered clear benefits for all, rather than to adopt a new one that would leave some libraries unable to participate in consortial deals.

Finally, the first subscriptions were for the more interdisciplinary products that were most demanded by users, and this to some extent exhausted the capacity for purchasing based on the model of “all for all”. The initial subscriptions of the CBUC had been aimed at providing the Catalan university community with a common set of electronic information, but it was difficult to obtain a consensus for including highly specialised subscriptions in the BDC. To meet this need it was necessary to create a type of subscription catering for individual members. In these cases however, the subscriptions are not subsidised by government funding and the cost-sharing formula is not the egalitarian one used for the joint agreements.

#### **4. Consortial gains, usage and satisfaction**

Over the last few years several studies have been carried out to evaluate the performance of the Digital Library of Catalonia. In one of the first of these studies, Urbano et al. (2004) analysed the use of four electronic journal packages (Academic Press, Kluwer, MCB Emerald and Wiley) between 2000 and 2003 in order to determine the evolution in usage, the consortial gain—understood as the percentage of previously unsubscribed to titles that were available thanks to a consortial licence—and the dispersal in consumption. The results showed a great increase both in the number of journals subscribed to (from 195 to 1495) and in consumption (from 5409 to 93,367 article downloads per semester). The analysis of the consortial gain showed that 61.49% of the articles downloaded were from journals that had not been previously subscribed by the institution from which they were downloaded. Finally, it was observed that 80% of the articles downloaded were from 35% of the available journals, thus showing a greater dispersal than that observed traditionally in paper journals.

A survey of lecturers of the member universities of the CBUC was also carried out (Borrego et al., 2007). The aim was to determine their degree of knowledge of the collection of journals available online, whether they preferred the electronic or print format, demographic characteristics of users and non-users of electronic journals and the satisfaction of users with the collection of titles available. The questionnaire was distributed to all the academic staff of the member universities of the CBUC, and 2682 responses representing 18% of the population were obtained. The respondents showed a high degree of knowledge of the electronic journal collection: more than 95% of the academics stated that they were aware of the electronic collection of serial publications. Of the respondents, 52% stated that they used electronic journals exclusively or mainly and 28% that they used both media to a similar extent. However, the preference for the electronic format was linked to the discipline and age of the academics. It was higher among the teaching staff of sciences (biomedicine, engineering and exact and natural sciences) and among younger academics. When the respondents were asked whether they would be prepared to stop using the print version of a journal if the electronic version were available, 76% answered yes. With regard to the perception of the future use of electronic journals, 91% of the respondents considered that it would increase in the next few years.

Another study (Borrego and Urbano, 2007) analysed the use of the journals of the American Chemical Society at the University of Barcelona. The results showed that most of the consumption was concentrated in a few IP addresses. As in earlier studies, it was found that the dispersal of consumption was higher than in paper journals and that 35% of the titles were used for 80% of the article downloads. Finally, it was determined that the number of abstracts viewed was a good predictor of the number of regular readers of a journal.

Coinciding with the tenth anniversary of the Digital Library of Catalonia in 2008, a report was drawn up on the use of the electronic information to which it had subscribed, including journals, databases and books. Though it is difficult to compare figures on the use of different resources, it was found that the consumption of most of the products increased during the first few years of the subscription and then stabilised. A slight reduction in the consumption of databases in the last few years was observed, affecting especially those with thematic specialisations. The consumption of electronic books was still very low, showing that it has not reached a high level of acceptance in our society.

Another qualitative study, carried out through an open questionnaire distributed by e-mail and personal interviews with a sample of lecturers, analysed the impact of the availability and accessibility of electronic resources on the behaviour of academics (Ollé i Borrego, 2009). The results showed that the increase in the availability of electronic journals had led to an increase in the number of articles and the diversity of journals read by teaching and research staff. However, the reading had become more superficial. The availability of electronic resources was leading to a reduction in physical visits to libraries and consequently a saving in time. Searching was a very popular option for keeping up-to-date with the new literature; Internet search engines, particularly Google and Google Scholar, were becoming the most widely used information sources. The academics stated that they encountered many problems in managing their personal scientific information.

During this period, the activity of the Digital Library of Catalonia has led to two PhD theses. Sales (2002) studied the distribution of subscription costs of the Digital Library of Catalonia. More recently, Térmens (2007, 2008) carried out a study to determine whether the different member institutions of a consortium showed significant differences in the use of the licensed resources beyond those that could be attributed to the size of each university. These differences were justified by the history of the resources available and by the level of research carried out in each institution. He analysed the use of seven Journal packages that offered COUNTER statistics: the American Chemical Society, the American Institute of Physics, Blackwell, Elsevier, Emerald, Springer and Wiley. The journals were classified into 33 thematic areas and their use was attributed to the teaching and research staff of the universities, divided into 199 areas of knowledge. The results showed that some institutions made greater use of the subscribed to journals than would be expected from their size. Differences were observed in thematic areas taking into account the number of teaching and research staff assigned to them. A relationship was also observed between the current level of use, the previous subscriptions and the level of research of each university.

## **5. Cooperation with other consortia**

Spain is divided into autonomous communities (geographic areas with competencies to regulate areas such as health and education). This model is also applied to the creation of library consortia, and there are currently five that have been formally set up (the BUCLE in Castilla-León, BUGalicia in Galicia, the CBUA in Andalusia, the CBUC in Catalonia, and Madroño in Madrid), a network of research centres that can be considered as a consortium (the CSIC), and several ad hoc *buying clubs* set up to obtain better conditions in the subscription of electronic products (in the Canary Islands and the Valencian Community, for example). Though each consortium operates separately, meetings have been held to exchange information when it has been considered necessary. Furthermore, REBIUN (the Spanish association of university libraries) and the consortia have recently increased their contacts with a view to collaborating more closely in the future.

So far the attempts to achieve a Spanish national licence for large packages of electronic information have shown no results. But there is one exception: since 2004 all the

Spanish universities have a subscription to the ISI Web of Knowledge through the licence negotiated for them by the FECYT and paid for by the Spanish Ministry of Science and Innovation. Further contacts between the consortia and the FECYT are scheduled in order to widen the range of electronic resources for which national licences can be negotiated with publishers.

Other actors with whom the CBUC collaborates are aggregators or subscription agents. When for reasons of strategy or cost a consortial subscription to an information resource is not suitable for all members of the CBUC, aggregators can help to organise a subscription for some members of the consortium within a wider agreement including other clients. This has been the case of Science, MUSE and Annual Reviews (all through EBSCO).

The CBUC has very good relations with its neighbours in the other countries of southern Europe through the informal group SELL-Southern European Libraries Link (Giordano 2002), which has met annually since 2001. One of the results of this synergy was the creation in 2007 of the first “transnational” agreement for the joint subscription of an electronic resource, the ALJC/ALPSP package of journals, through the platform of the Swets subscription agent.

## **6. Strong points, weak points and future challenges**

Now, with 10 years of experience in consortial licensing, we can point out some strong and weak points of the BDC. The main strong points are increasing cooperation, an increasing amount of information available and limited expenditure. The main weak points are the inability to extend the BDC beyond the universities and a certain degree of saturation in its capacity for joint subscription in the last few years.

The CBUC was created before the emergence of consortial licensing and it was in the right place at the right time to extend its activities to joint purchasing. Its ability to do so has undoubtedly strengthened it. The clear benefits of the *Big Deal* have consolidated collaborative relations and allowed the CBUC to extend its activities to other areas, particularly electronic repositories.

The increase in information available has also been a clear result of the BDC. Though this is always an advantage of joint licensing, it is probably a greater one for consortia like the CBUC which contains universities which have traditionally had less purchasing power. The advantage of offering new subscriptions at an affordable extra cost has attracted money to increase library purchasing budgets from both the government and the institutions themselves. The university community of Catalonia is highly satisfied with the radical change in access to information and the increase in available resources brought about by the change from individual subscriptions to consortial purchasing.

A final positive element is the limitation of expenditure. The price of journal subscriptions has risen more than the increase in budgets based on the RPI, but the consortial action has led to two very important results: the ability to plan expenditure thanks to long-term deals, and the limitation of the annual increases in comparison with the previous individual subscriptions.

The BDC has managed to extend its licensing capacity to universities that are not members of the Consortium, but it has not managed to extend it to other types of libraries in Catalonia. Following the example set by other European consortia (such as the Finnish and Portuguese ones), since 2005 there have been attempts to include libraries of research centres, government agencies and hospitals in the BDC but they have been unsuccessful, as have the attempts to include public libraries. The reasons for this are the obvious difference between the dimensions and needs of large and interdisciplinary university libraries and the libraries of other institutions, the lack of government funding for this extension of coverage of the BDC, and the fact that the libraries are under the control of different departments of the Catalan government.

Another weakness of the BDC is the fall in the level of new joint licensing projects in the last three years. This is largely because the most relevant and common digital products for the research community have been included in the BDC. However, there are specialised resources that are only of interest to some libraries and have therefore not been included in the joint purchases. Furthermore, the attempts to reach joint licensing agreements for electronic books have been less successful than was expected.

With regard to consortial purchasing of electronic information, the CBUC faces three major challenges. Firstly, it faces economic restrictions arising from the current crisis and from the fact that an increasing number of actors are competing for the same economic resources. Secondly, it must find mechanisms for incorporating special libraries in consortial purchases. This would make it possible to add to subscription agreements specialised products that cannot be subscribed consortially unless a critical mass of institutions is attained. The egalitarian effects of cost sharing would thus be extended from universities to other institutions. Finally, the CBUC can and must build on the success of co-operation in the last few years to improve the access of the international community to Catalan scientific production through the creation and maintenance of digital repositories.

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