DigiZeitschriften, a German-language archive of scholarly journals, was created in 1997 with funding from the German Research Foundation. Since launching as an online service in 2005, DigiZeit has implemented a sustainability model that includes a partnership of libraries contributing time and expertise, and a financial model of institutional subscriptions that has more than covered its operating costs to date. This case study will examine the decisions leading DigiZeitschriften to adopt this plan for sustainability, and will examine the benefits as well as challenges inherent in a partnership of this kind.

Introduction

In the late 1990s, as libraries faced pressure regarding space and budgets, a group of library directors at several German research universities decided to work together with the support of the German Research Foundation (Deutsche Forschungsgemeinschaft, or DFG) to undertake a large-scale digitisation of back issues of scholarly journals, something no one library would easily be able to accomplish alone. The timing for this seemed right: in the US, JSTOR had launched its service of a digital archive of scholarly journals in 1995, providing a useful example of how such a venture might function, and there was broad support to try something similar in Germany.

'The idea to create direct access to important research materials started after we learned about JSTOR,' according to Berndt Dugall, Library Director at the University of Frankfurt and one of the founding partners of DigiZeitschriften. 'We carefully checked the collections and their business model... and we saw that in JSTOR the focus was very clearly on English language materials ... and therefore we thought it could be of interest to create a similar model, but with a focus on German language research papers and materials.' So, with nine founding library partners and funding from the DFG, planning began in 1997 to find a way to both support libraries in times of ‘drastic budgetary and cost-saving measures’ while still providing access to significant scholarly content.

Sustainability model

Goals and strategy

The sustainability model for DigiZeit relies on subscription revenue, combined with a very low cost structure that is possible due to partnerships with 14 member libraries, and by being housed at the Göttingen Library. In addition, the goals for growth of the resource are modest, and determined as a function of the surplus revenue generated each year. Ongoing digitisation to accommodate new issues of the journals already in the database (the ‘moving wall’) is completely covered by the subscription fee. If there are still funds remaining once these costs have been covered, DigiZeit’s board decides what to do with the surplus. In the past, surplus funds have been used to add new journals to the database, or to make improvements to the site’s functionality. For major new digitisation work, additional outside grants can be sought.

The notion that DigiZeit should be able to cover its direct costs and fund the expansion of the service was, in fact, explicit from the project’s earliest days.

1 Unless otherwise noted, all quotations from staff members and other individuals knowledgeable or associated with DigiZeitschriften are drawn from interviews conducted as part of this case study between December 2008 and February 2009. A full list of interviewees is included in Appendix A.

initial two-year grant (feasibility study) from the DFG to finance the digitisation of back files, was that DigiZeit had to create a business model to ensure that the project would have enough revenue to continue its activities without the need for further grants. The three main types of costs included administrative costs, storage and access costs, and further digitisation activity in order to expand the collections.

In 2002, at the end of that first grant period, the partners arrived at the organisational structure still in use today. The Association for the Retrospective Digitisation of Scholarly Periodicals – DigiZeit (Verein DigiZeitschriften e.V.) – is a not-for-profit association run by its partners, which now include 14 member libraries throughout Germany. The product generates revenue through an institutional subscription strategy, based on a tiered pricing model. In addition, as new institutions subscribe, they are required to pay a one-time fee, equal to three times their annual subscription rate. The partner libraries also pay a subscription, but are exempt from this initial fee.

The 14 DigiZeit member libraries are all SSG Libraries, or special collections libraries, a special designation given to 34 German research libraries that share responsibility for development of collections in particular fields of scholarship. Library directors at these member institutions serve on the DigiZeit board, which meets once per year to vote on measures brought to them by the board’s chairman, Norbert Lossau, also the Library Director at the University of Göttingen. The member libraries serve as content selectors, using staff at their institutions to identify the most important journals in their area of expertise to add to the collection. Once the content has been selected and approved by the board, it is the responsibility of the administrative office with support of that library to negotiate any terms with the rights-holding publishers.

Costs

The initial costs for starting up DigiZeit were covered by a series of six grants from the DFG totalling €850,000, part of larger program of investment (about €4 million per year in total) in retroactive digitisation that the DFG was supporting at the time. This covered hardware and software as well as digitisation and administrative personnel.

Today, the ongoing operational costs for DigiZeit are about €120,000 per year, which according to Dugall, include ‘wages for the staff, hardware investments, software investments, storage facilities ... and then when we know we need so much money for this... We see what money is available for including additional digitisation activities. When this is possible we try to enlarge our collection by including more journals.’ In addition, each year, DigiZeit must digitise another years’ worth of issues as a result
Finally, DigiZeit must share revenue from its subscription income with the participating journal publishers holding copyright. This is done in two ways. When a journal is first digitised, DigiZeit pays a one-time 2-cent per page fee. Then, each year, DigiZeit pays a percentage of its annual revenue (3% up until 2007, and 5% starting in 2008). Both types of payments are based on agreements negotiated at the founding of DigiZeit among the German Publishers and Booksellers’ Association, the VG Wort, an author royalty collecting society, and DigiZeit. All royalty payments are made directly to the VG Wort, which in turn, distributes them to authors and publishers in an 20-80% author-publisher split for articles published in the last 10 years; and an 80-20% split for those published longer than ten years before.

Revenues

Among the original publishers to offer content for DigiZeit, publisher Georg Siebeck of Mohr Siebeck remembers ‘urging them to have a subscription to cover ongoing costs: as a means to insure income that would allow continuing development of the resource and provide a reliable revenue stream. Having 100 sponsors all over the world is a lot safer than having one sponsor. If he (goes away) the system breaks down…’

The revenue model of DigiZeit follows an institutional subscription model, combined with a one-time initial fee equal to three times the institution’s annual fee. The pricing is based on the size of the institution, as summarised in the table below. The pricing for subscribers outside of Germany is lower, since the demand for a German-language resource was seen to be less. In addition, prices for consortia are negotiated separately. As of late 2008, there are 190 institutional subscribers to DigiZeit, 65% from Germany and 35% from other countries.

These revenues, about €180,000 in 2008, along with the one-time fee paid by all new participants, more than cover the operating expenses of DigiZeit.

<table>
<thead>
<tr>
<th>Enrolment</th>
<th>Price</th>
<th>Size tier</th>
<th>Tier</th>
<th>Price</th>
<th>Enrolment</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 25,000</td>
<td>€4,500</td>
<td>Tier 1</td>
<td>€1,500</td>
<td></td>
<td>Over 15,000</td>
<td>€1,500</td>
</tr>
<tr>
<td>15,000 – 25,000</td>
<td>€2,800</td>
<td>Tier 2</td>
<td>€950</td>
<td></td>
<td>Up to 15,000</td>
<td>€600</td>
</tr>
<tr>
<td>5,000 – 15,000</td>
<td>€1,500</td>
<td>Tier 3</td>
<td>€500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 5,000</td>
<td>€600</td>
<td>Tier 4</td>
<td>€200</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3 The ‘moving wall’ concept allows publishers to determine the delay between a publication’s original date of issue and when it can first appear as part of the DigiZeit collection (an approach also used by JSTOR). In general, the ‘moving wall’ is between two to three years, though some may be as long as seven years post-publication.

4 The 1.5 FTE on DigiZeit staff are library employees, whose salaries are paid from the DigiZeit budget.
new journals to digitise in existing fields, or to expand into new disciplines.

DigiZeit’s goals for 2009 include adding 500,000 pages of new journal content, improving the functionality of the service by adding full text search, and expanding DigiZeit’s international customer base, particularly in Asia, Russia, and Poland.

Key factors influencing the success of the sustainability model

Göttingen and the Digitization Center

DigiZeit’s place within the Göttingen State and University Library is a key element of its sustainability model, allowing it to benefit from the scale of the larger institution. When digitisation work first began in 1997, it was done by commercial vendors; by 1998 the Digitization Center (DigitalisierungsZentrum or GDZ) was established at Göttingen and by 1999 digitisation was taking place on site there. According to DigiZeitschriften Chairman Norbert Lossau, who is also Library Director at Göttingen, ‘The GDZ was one of the reasons to host DigiZeit in Göttingen.’

DigiZeit is but one of six or seven digitisation projects that the library has going at any given time, and only accounts for a small part of the centre’s workload, which in 2009 will include digitising an estimated 3 million pages.

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Although DigiZeit does not contribute anything to the library or GDZ overheads, Lossau explains, ‘Our library sees the hosting of DigiZeit as part of its mission to provide the widest possible access to scholarly content resources... It’s important to understand that, although we serve primarily our university, we serve with a number of services and service developments also the national and, in some areas, also the international community. The outreach of our library is recognised (also by the University Governing Board) to go far beyond the university, which justifies some of our own resources we spend on DigiZeit.’

Governance

DigiZeit has a board of three people: two deputies and the chairman, who is traditionally the library director of the State and University Library of Göttingen, the headquarters of DigiZeit. The other 11 members constitute DigiZeit’s General Assembly, which meets at the end of each year to vote on strategy and the next year’s budget, including any plans for upcoming digitisation or changes in policy. No one, not even the chairman, is paid for this work. Lossau, now the chairman, reports that the General Assembly meetings are rarely contentious, as the members are supportive of the board and ‘are all committed to the growth of the collection and have no personal agendas in this field.’

Its leadership, specifically Lossau and Dugall, have been closely involved in the project from the start, Lossau as the Head of Digitization at Göttingen from 1996-2001, as the program got underway, and Dugall as one of the chief planners of the service. In preparation for the launch of the service, both travelled extensively in the US in 1997 and 1998, meeting with project teams at American universities including Michigan, Cornell, and Stanford involved in similar digitisation projects.

The long-standing relationships and streamlined nature of the management of DigiZeit help to make decision making relatively efficient. On the other hand, the project is run with no one single person in a full-time management role. Even project manager Caren Schweder wears many hats, from billing and invoicing, to library liaison to marketing, promotion, and sales.

Partnership model

The DigiZeit model derives important benefits from its member libraries in the area of content development. The partner libraries are all considered special collections libraries. The DFG’s Special Collections Program, begun in 1949 uses a decentralised subject plan to insure that at least one copy of every scholarly relevant publication is present in Germany and thus available through inter-library loan of the original or photocopies. Göttingen, for example, is the designated library for 17 special collections, including history and politics of Anglo-American cultures, theoretical mathematics, natural sciences, astronomy, and English language and literature.

Selection criteria for which journals to include in DigiZeit come from the specialists at each partner library, with the requirement that the journals digitised be ‘the core publications in various fields, those which were frequently used and were of great research value,’ and with the expectation that the publication would be included as close to the present day as the publisher would allow. The initial list of journals was compiled by subject specialists at the cooperating libraries, and was subsequently assessed by 20 well-respected scholars in the fields being considered.

The coordination of the community was critical in making DigiZeit a possibility. The initial plan for the resource was the idea of three librarians: Berndt Dugall, Elmar Mittler, former director of the Göttingen State and University Library, and Hermann Schweder (2004), p 184.

Cite SUB Göttingen website: www.sub.uni-goettingen.de/index-e.html

Page 4
Leskien of the Bavarian State Library. They devised the initial plan and then recruited six other librarians to join the project and help identify the core journals to include. Leaders of DigiZeit feel that the project’s governance by a library partnership has had an impact on its success. As Dugall said, ‘We are still part of the library community. We are not seen as being providers from outside.’

Of course, that role is complicated by the fact that DigiZeit does, indeed, count on the subscription fees from the library community. ‘We have two different types of relationships: one is partnering, and the other is that our library colleagues are our clients…which is an interesting model,’ explains Dugall with a laugh. ‘We are ourselves our clients.’ Indeed, even the partner libraries who donate their staff time to content selection and to working with publishers are required to pay the annual subscription fee for access to DigiZeit, though they are not required to pay the one-time fee that other institutional subscribers do.

**DigiZeit’s other ‘partners’: Participating publishers**

In the early days, DigiZeit’s founders promoted the service in face-to-face talks with publishers, leveraging personal contacts and making it clear to prospective publishers that all costs of digitisation would be covered for them by DigiZeit, initially through the DFG funding it had secured, and beyond that, through the revenue to come from subscriptions to the service. ‘Because everyone was insecure on the publisher side, it was all due to personal commitment,’ explains Lossau, describing the pitch for participation. ‘Give us a chance to make some revenue… and you will have no risk.’

One of the earliest publishers to support DigiZeit, Georg Siebeck of Mohr Siebeck understood the appeal of letting the libraries take the lead on the project. ‘The library is concerned with those things that have been published. As publishers we are concerned with those things that are to be published.’ In addition, many of his journals are 100+ years old, ‘and we cannot sell these old copies. It is in the interest of a publisher who still publishes a journal that it be as visible as possible.’ Besides, ‘physical preservation was an issue – digitisation would help libraries do what they had always done [make content accessible to scholars] and would in no way hinder us.’

**Intellectual Property Rights**

Having worked out terms with the authors’ and artists’ guilds, VG Wort and VG Bild-Kunst, DigiZeit could also assure publishers that authors’ rights would be protected, and the publishers would be remunerated for the content they provided. One further incentive proved very important as well. As had happened with JSTOR in the United States, DigiZeit instituted a model of the ‘moving wall’ of content, describing the period of time that would elapse between the original publication of a new journal and the time when it would first appear in DigiZeit. The appeal of the moving wall, often a period of two or three years, is to allow the publishers to protect the business models they have in place for subscriptions to the current issues of their journals.

**Content selection**

Although DigiZeit’s leaders observed that commercial publishers including Wiley and Elsevier had already taken a strong position in the hard sciences, they felt there was still plenty of content to be aggregated. According to Dugall, ‘Our advantage at that time was that in Germany in the case of research materials, there was not a strong concentration in the research market. There were a lot of smaller publishers…’ So, they went to look for those journals the large publishers were not already covering, and identifying the library collections with strengths in those subject areas. In some cases, they were just too late: When Dugall approached the German Society of Chemists, for example, they had already sold all their rights to Wiley. Other German publishers, like de Gruyter, chose not to participate, instead preferring to create their own platform.

**But having the greatest volume of content is not as important to DigiZeit as having the right content for its audience of researchers and scholars.**

**Understanding users**

As of late 2008, the DigiZeit site records over 35,000 downloads of articles per month, up from 15,000 in 2006 to the 190 subscribing entities. Yet, DigiZeit considers it the primary responsibility of the libraries to respond to the needs of end users – the faculty and students at subscribing institutions.

‘Most activity for the end users is done by the libraries. We inform the library community and the research community about our … offers.’ ‘It’s part of the library’s role on campus. Scholars go to the campus library catalogue, which alerts people that the article is available here, in electronic version.’ The Electronic Journals Library (EZB) is a portal that university libraries use to allow researchers to see 12,000 digital journal titles, indicating which are available at that institution. Those institutions subscribing to DigiZeit, for example, would see the listings for DigiZeit content with an icon of a green traffic light signalling that indeed the institution has full access to that content.

DigiZeit leaders are starting to examine more closely just where its traffic is coming from, though an initial analysis suggested, according to Lossau, that ‘only a very small percentage comes from Google, with a much higher percentage coming directly to DigiZeit.’ While this sounds counterintuitive, it may be because of several restrictions that have kept DigiZeit from building more traffic from search engines. First among them is that DigiZeit is not permitted to allow search engines to crawl the full text of the first page of its articles. Publisher contracts prohibit it from allowing Google to index PDF files, display a full page, or even a full text excerpt.
According to Lossau, ‘We have discussed this with publishers, but we simply have problems with the copyright situation in Germany.’ The original publisher contracts did not account for this, and as Dugall explains, ‘Perhaps it would have been possible to include this in the contract six to seven years ago, but at that time, we had no idea ... that Google would be the dominant search engine 5 years later, [so] nobody had any idea that this question should be part of the agreement with publishers... When we mention we want to make the first page [available] in Google, I think then the fears and resentments against our activity would increase, so we have to live with the situation.’

On the other hand, not all publishers are necessarily as fearful as DigiZeit believes. Publisher Georg Siebeck of Mohr Siebeck is quite supportive of the notion of displaying the first page of an article and having Google search the text, so long as it improves the visibility of the resource. He suggested that publisher support or fear about Google was more of ‘an ideological issue.’ Almost all of his books are in Google, because he is convinced it will not harm the sales of the books. As another possible advertising idea, he suggested including advertisements in current journal issues announcing that the backfile of this particular journal is now also electronically available through DigiZeit.

Benefits and Challenges

By situating DigiZeit as one of many projects at Göttingen, the project strongly benefits from its affiliation with the Digitization Center, in terms of the expertise available in functions like metadata creation, and in the hardware in which the centre has invested, like the flatbed and robot scanners.

DigiZeit’s library partners share some of the burden of the staff time needed to accomplish important tasks of the operation, including content selection and publisher rights clearance. By having the opportunity to draw upon the volunteered efforts of content specialists in the Special Collections libraries, DigiZeit benefits from their expertise, while spreading the work and cost of content development across several institutions. In this way, the partnership operates as a kind of contributed content model.

DigiZeit’s subscription model has generated sufficient revenue to cover its operating costs while continuing to allow some degree of ongoing digitisation beyond that required by the moving wall. Its current model addresses both library mission goals regarding space and preservation issues, while providing access to these materials to the scholarly community.

And yet, while DigiZeit sees itself as serving the library community, relatively little has been undertaken to anticipate or respond to the needs of its end users: the scholars, students and other library patrons who use it. DigiZeit’s main stakeholders are its partners and other subscribing libraries, and up until now, this has been reflected in its priorities: to digitise quickly, while spending much less effort on user features such as full text searching, which lag behind where many similar services are today.

Its small core leadership team allows DigiZeit’s leaders and administrator to make everyday operational decisions quickly. But at the same time, DigiZeit’s board members are also library directors, with very demanding full time jobs, and the lead administrator is responsible for a wide variety of functions. Without adequate staffing, it will likely be difficult to grow and improve the resource. For example, while there are plans for expanding the customer base in 2009, there is currently no dedicated sales staff on hand to accomplish this.

Intellectual property rights issues, as agreed to in the early DigiZeit publisher contracts, appear to have hindered the possibilities for DigiZeit to optimise its exposure on the internet via the major search engines. While there seems to be support for obtaining these rights both from DigiZeit leadership and from some publishers, this remains an obstacle.

Broader implications for other projects

Partnerships among those with common goals can help to lower costs. The partner model used by DigiZeit works well by drawing on the strengths of each special collection library to contribute to the effort. Having each partner volunteering time to accomplish the work of editorial selection and publisher solicitation also helps to keep project costs low.

Subscriptions are a worthwhile option when the content is highly valuable to customers with the ability to pay for it. DigiZschriftens provides good value to libraries, particularly those in Germany or with strong German-language collections, helping them with practical issues of storage and preservation as well as allowing them to provide their patrons with easier access to back issues of older journals.

A good fit with a host institution can be a key aspect to sustainability. By establishing DigiZeit at the Göttingen library, both the project and the institution derive benefits that each values. The library is proud to have played a critical role in the creation of an important resource in the community and at the same time, DigiZeit strongly benefits from the expertise and equipment of the Göttingen Digitization Center, as well as the content hosting, preservation and office space that the library provides.

An active feedback loop with users helps a site stay current with evolving user expectations for online academic resources. This has been a challenge for DigiZeit because it rarely interacts directly with the end users of the resource. Without a productive feedback loop or other means of gauging what researchers and scholars require of and like about DigiZeit, the service risks losing its usefulness to the community, which could hinder its chances of maintaining and expanding its customer base.

Continued growth and innovation requires committed leadership and dedicated staff. DigiZeit has ambitious goals for the year ahead, from implementing full text searching to adding new content areas and seeking additional subscribers in countries outside of Germany. With only a small part time office staff in place to accomplish this, the project may find it a challenge to meet all its goals.
Appendix A: List of Interviewees

Berndt Dugall, Board Trustee and founding member, DigiZeitschriften and Director/Librarian, University Johann Christian Senckenberg, Frankfurt, 3 December 2008

Martin Liebetruth, Digitization Manager, Göttingen State and University Library, 3 December 2008

Norbert Lossau, Chairman, DigiZeitschriften and Director, Göttingen State and University Library, 3 December 2008

Caren Schweder, Project Manager, DigiZeitschriften, 20 January 2009 and 17 February 2009

Georg Siebeck, Publisher, Mohr Siebeck, Tübingen, Germany, 19 February 2009

Appendix B: Summary of Revenues and Costs

DigiZeitschriften

<table>
<thead>
<tr>
<th>Revenue Category</th>
<th>Description</th>
<th>Approx. amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscription fees</td>
<td></td>
<td>£167,000</td>
</tr>
<tr>
<td>Total revenue</td>
<td></td>
<td>£167,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Budgeted Costs</th>
<th>In-kind/volunteer contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>FTE</td>
<td>Included in budget?</td>
</tr>
<tr>
<td>Personnel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>1 PT project manager &amp; 1 PT administrative assistant</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DZ Chairman is Library Director at Göttingen; two other trustees have FT appointments at their institutions.</td>
</tr>
<tr>
<td>Content selection &amp; production</td>
<td>0</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fourteen partner libraries contribute their time for content selection.</td>
</tr>
<tr>
<td>Sales &amp; marketing</td>
<td>0</td>
<td>yes</td>
</tr>
<tr>
<td>Technology</td>
<td>0</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Programming staff at Digitization Center develops platform &amp; tools which DZ also uses.</td>
</tr>
<tr>
<td>Total personnel costs</td>
<td>1.5</td>
<td>£77,000</td>
</tr>
<tr>
<td>Other non-personnel costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration &amp; overhead</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Office space provided by Göttingen State and University Library.</td>
</tr>
<tr>
<td>Scanning, metadata, etc.</td>
<td>Temporary scanning technicians are hired to scan new journal issues as part of the moving wall each year</td>
<td>yes</td>
</tr>
<tr>
<td>Hosting &amp; technology infrastructure</td>
<td>no</td>
<td>Supported by the Digitization Center at Göttingen.</td>
</tr>
<tr>
<td>Royalties</td>
<td>Royalties paid to author rights' society</td>
<td>yes</td>
</tr>
<tr>
<td>Other</td>
<td>Travel costs for annual partner meeting; marketing materials</td>
<td>yes</td>
</tr>
<tr>
<td>Total other non-personnel costs</td>
<td></td>
<td>£37,000</td>
</tr>
<tr>
<td>Total budgeted costs</td>
<td></td>
<td>£114,000</td>
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