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# Supporting Research in a Digital World – Positioning the Library on Campus

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### Abstract

The digital world offers new opportunities for university libraries to support research and to position itself on campus. However, open access, open science, and further aspects of 'openness' necessitate strategic changes in order to ensure high-quality library services tailored to the customers' needs. Establishing new partnerships, and developing shared initiatives on as well as off campus enable the library to manage new projects, improve its existing services, and also offer new services. Building on a convincing record of past performances Hildesheim University Library is able to undertake new tasks, and thus to position itself on campus as an innovative and reliable partner also for researchers.

Digital library services, open access, open science, university library, change management, innovative technology, staff training, partnerships, shared initiatives

### 1. Universities in a digital world – scientific-political impulses

In the digital era, the creation and dissemination of knowledge has changed fundamentally. In research and education new digital tools are available, new methods are being applied, and new fields of research like Digital Humanities or Big Data in Life Sciences are evolving. E-learning und E-science has become the subject of research. Scientific-political impulses like the EU Research and Innovation program Horizon 2020<sup>1</sup> foster these developments. In Germany, the Federal Ministry of Education and Research launched its program "Digitale Innovation"<sup>2</sup> in order to support the use of digital technology in the classrooms and in the labs. The German Science Foundation makes funding available not only for E-science but also for the digital research (information) infrastructure.<sup>3</sup>

On a regional scale, the new government in Lower Saxony has declared digitization and digital change as major topics in their governing program in November 2017. The opportunities for digital research and education at the universities in Lower Saxony were emphasized.<sup>4</sup> Strengthening computer science, expanding E-learning and E-science as well as improving the digital information infrastructure are important elements of this program. The rectors' conference of the universities in Lower Saxony, together with the Lower Saxony Ministry of Research and Cultural Affairs published a joint statement underlining the importance of digitization for the universities and the need for digital innovation and financial investments.<sup>5</sup>

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<sup>1</sup> <https://ec.europa.eu/programmes/horizon2020/>

<sup>2</sup> Bundesministerium für Bildung und Forschung (BMBF), Digitale Innovation. Berlin. September 2017.

<sup>3</sup> [http://www.dfg.de/en/research\\_funding/programmes/infrastructure/index.html](http://www.dfg.de/en/research_funding/programmes/infrastructure/index.html)

<sup>4</sup> [https://www.niedersachsen.de/startseite/digitalisierung/digitalisierung\\_niedersachsen/digitale-wissenschaft-148603.html](https://www.niedersachsen.de/startseite/digitalisierung/digitalisierung_niedersachsen/digitale-wissenschaft-148603.html)

<sup>5</sup> <https://www.lhk-niedersachsen.de/positionen/>

Another important impulse that has changed the academic environment of German universities considerably in recent years is the so-called 'Bologna Process' – named after the place it was proposed, the University of Bologna, with the signing of the Bologna declaration by Education Ministers from 29 European countries in 1999.<sup>6</sup> It was initiated to ensure comparability in the standards of higher education qualifications. In a time and energy consuming process, the degree programs and degree requirements at German universities were re-structured. Bachelor and Master degrees were introduced in order to make the diplomas from German universities internationally comparable. Thus the 'Bologna Process' has led to fundamental and long-lasting changes in the German university system in general. In a digital world this also implies the improvement of the digital information infrastructure in order to keep German universities à jour with the improvements at universities in other countries of the EU.

## 2. Hildesheim University

Hildesheim University has seen major changes during the past two decades. It became a Foundation under Public Law in 2003 – one of the first of its kind in Lower Saxony and in Germany in general – giving the university greater autonomy and responsibility. This was especially important when it came to hiring new academic staff and with regard to facility management.<sup>7</sup> The university's faculties were re-designed, and their number increased. The degree programs changed as did the area of studies which can now be selected from the following fields: Education and Social Sciences, Cultural Studies and Aesthetic Communication, Linguistics and Information Science, Mathematics, Natural Sciences, Economics and Computer Science. Hildesheim University has been quite successful in attracting more students over the past years. Since 2003, the number of students has increased by 99%, and the number of faculty by 172%.

Hildesheim University's Mission Statement includes "the active integration of students into teaching and learning processes" and „the participation of students in the decision-making as to how student fees are used“.<sup>8</sup> A series of evaluations were organized, asking students to comment on the quality of degree programs and classes they had taken. The evaluations also covered the infrastructure on campus, such as our library's services for instance. These student feedbacks were very valuable for the library because they pointed at necessary improvements and changes. Some organizational deficits were known to us, others were the result of the increased number of students and staff. We succeeded in bringing forward service improvements on our own but it was clear that we needed support – and funding – from the presidential board of our university in order to achieve major improvements concerning the library as a learning space, extending our print and digital resources, and offering new services. Eventually, we received additional funding and managed a number of projects successfully.

## 3. Hildesheim University Library

Since the presidential board at Hildesheim University puts special emphasis on increasing the university's attraction to new students and to new staff, a user-oriented change management was the appropriate strategy for the library to support this development. The change management initiative was user-oriented in a twofold sense: first, the feedback from users was the starting point and, second, changes in the library's services were tailored to the users' needs.

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<sup>6</sup> [https://ec.europa.eu/education/policy/higher-education/bologna-process\\_en](https://ec.europa.eu/education/policy/higher-education/bologna-process_en)

<sup>7</sup> The 16 German states (Bundesländer) each have their own higher education act (Hochschulgesetz). The state ministries regulate which degree programs each university can offer, which new buildings can be built etc. In Lower Saxony six universities were transformed into foundations under public law in 2003 giving them more independence. However, these universities still are depending on state funding and have to obey the higher education act of Lower Saxony.

<sup>8</sup> <https://www.uni-hildesheim.de/en/profile/leitbild/>

At our library we believe that we can make a major and visible contribution to the success of Hildesheim University: first, by listening to and understanding the needs of our users – and offering services tailored to their needs. Second, by using innovative technologies to improve our services. And third, by informing and alerting the presidential board of our university of new developments, opportunities, and risks. This is especially important in a time when new digital technologies change the creation and dissemination of knowledge fundamentally.

The evaluation of the degree programs and the university's infrastructure provided us with helpful hints as to what we should do better. Moreover, in meetings with representatives from the student body, the head of the library discussed how we could improve our services. However, a change process cannot be successfully planned, led and executed by one person alone. Therefore the communication within the library was intensified, and a collaborative form of discourse was initiated. In addition, the library staff was encouraged to look at our library's services through the eyes of our users. Equally important was and still is the development of the library staff through training because in the end, it is the staff that 'lives' by the values of the service. It was important to adjust the way part of the staff was dealing with changes in order for them to perceive the library as an organization that is always in motion, and to perceive change as a process that can happen in different areas at the same time, and that is ultimately endless.

#### 4. Digital transformations in teaching and study

In the fall of 2014, the administration of Hildesheim University's central learning management system (Moodle) was moved to the library, including additional staff. This was an important step forward because a new field of activities became part of the library's services. It was a strategic move in tune with the recent trend towards media convergence. Our databases and e-books can be directly linked with the learning management system. And the learning management system now supports the use of tablets and smartphones.

What is described here, is a nice synergetic effect because we had introduced the support of handheld devices for our local library system the year before. In a joint project with Lüneburg University Library, the center of the regional library network GBV in Northern Germany<sup>9</sup>, and a software company we developed a library app in order to improve our library's services because the number of students using tablets and smartphones had grown significantly. Meanwhile, this app is being used by several other university libraries in Lower Saxony and in other German states.

In cooperation with Braunschweig University Library, Hamburg State and University Library, Lüneburg University Library, and a software company we introduced a new resource discovery system (HilKat) which enables our library users to get better search results from our electronic library catalogue.

Together with the university's facility management, we developed plans for a separation between the noisy social interaction areas for group work and the silent study areas in the library. The library's entrance and the circulation area were modernized, and the noisy areas separated from the silent study areas by a new glass wall. In addition, the library was extended to a neighboring building, and new study areas were introduced. The library worked together with the computer center to improve internet access and WIFI within the library. When students collaborate, they can use the wireless "Teamo" application which brings the data from up to four handheld devices on a big screen. This makes it easier to work on class assignments like presentations.

#### 5. Supporting research

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<sup>9</sup> GBV is the Common Library Network of the German States Bremen, Hamburg, Mecklenburg-Vorpommern, Lower Saxony, Saxony-Anhalt, Schleswig-Holstein, Thuringia and the Foundation of Prussian Cultural Heritage.

The creation and spreading of knowledge are key elements of each university. Important ways of dissemination are the publication of journal articles or books, in print or electronic formats. In order to support researchers at our university, Hildesheim University Press has been part of our library for more than two decades. In 2015 we hired a new editorial director for print and digital publishing to improve our open access publishing services and to offer book on demand printing as a new service. The presidential board acknowledged this initiative to extend the support the researchers at our university and made extra funding available for the new position of the editorial director.

Researchers can publish their scientific publications open access online and also in print. The electronic publications are stored in our repository HilDok. For print publications we cooperate with Georg Olms publishing house which organizes the printing and distribution of the publications. Additional funding is available to support researchers who publish in open access journals and have to pay article processing charges. Within three years, the number of Hildesheim University Press publications tripled.

Recently, we introduced our new data management services which has become an important issue at German universities.<sup>10</sup> We hired a new staff member who started consultation services for the researchers at our university. This paves the way for new and even more cooperation with the researchers on campus, and for connecting with other universities and university libraries. In cooperation with other universities we also started a survey<sup>11</sup> among our researchers asking for the way they are storing their research data and for support they would need. We introduced a research data management organizer software (RDMO<sup>12</sup>), because funding agencies such as the German Research Foundation require a data management plan at the start of each funded research project. In addition, we introduced a local research data repository (HilData) so researchers can store data at our university if they do not want to store it in a national or international repository because of sensitive data and data security, for instance.

We would like to extend our library's services by offering new spaces especially designed and equipped for meeting the needs of young researchers. A space for doing research, for collaborating with other young researchers from their own and from other fields, and for communication. A place to work, to meet, to exchange new ideas and to make friends. Also a place to organize workshops and to have guest lectures. Transforming the old cafeteria into such a 'research commons' would be a good option. Our president and vice-presidents are convinced that this would be an innovative place at our university. The board of trustees gives this initiative full support.

## 6. Positioning the library on campus

Our improving the learning and teaching environment by offering better and also new services, partly developed with colleagues from other libraries, had caught the attention of our president and vice-presidents. This was the basis for receiving support in order to take over new tasks such as the administration of the university's learning management system, and to improve and extend our publishing services. In both cases we were able to hire new and additional staff. This 'past performance' has paved the way for being able to introduce new data management services (with additional staff) now, and thus the library has become a partner for researchers in a new and important field. For the presidential board, research data management is of strategic importance because it has become a requirement for acquiring additional research funding from the German Science Foundation, the Federal Ministry of Education and Research or the EU. The library can now support researchers with a new service. It contributes to the success of the researchers and the success of the university in general. This is a good and strong position to undertake new tasks in the future.

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<sup>10</sup> See Martin (2013).

<sup>11</sup> <http://uneke.de/>

<sup>12</sup> <https://rdmorganiser.github.io/>. See also Neuroth (2018).

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