How do we actually reach our users?

Case study on the information and communication behaviour of students and scientists at the University of Cologne

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Introduction

As digitisation progresses, both the nature and availability of information and the communication behaviour of library users are changing. Most research is now done online, as users are finding that the information they are seeking seems to be more comprehensive, more up-to-date, and more convenient there. In this context, the question arises as to which media will enable libraries to identify and address the needs of their customers, not only via websites and newsletters but also via social media channels. Library as a place is very popular, as reading rooms are full of students, but there remain many students and scientists who don’t avail themselves of all the library resources available to them. Within the framework of two studies, the information and communication behaviour of students and scientists at the University Library of Cologne (USB) at the Institute for Information Science of the TH Köln was examined. This article provides information on the objectives, research design, and results of the two related subprojects. The results show that a systematic process of introducing library services to clients, of establishing ongoing, permanent communication, and developing a more intensive marketing for new and, above all, digital services and products are needed.

Concept and Objectives

Two empirical studies examined the information and communication behaviour of students and scientists at the University Library of Cologne (USB). The first study, conducted by two students working towards their bachelor of library science degrees, dealt with a target group of students of the University of Cologne. The second study, conducted by students pursuing master’s degrees, was a project of several months duration for the Market and Media Research course and examined a target group of scientists. Both surveys analyzed information and communication behaviour, along with information needs of both target groups, to derive corresponding recommendations for action to optimize USB customer communications. The key questions were as follows:

- Which communication channels do students and scientists use, and how do they seek information about USB?
- What is the best way for the library to reach students and scientists on the university campus?
- How can the library reach students and scientists in general?

Further sub-questions derived from these key questions:

- What are the requirements of the scientists?
- How do students and scientists use USB and its information and communication channels?
- What do students and scientists want to be informed about and how do they like to communicate with USB?
- What (additional) services should USB offer to students and scientists?

A similar study conducted at the University Library in Göttingen in 2016 inspired our study. The 2016 study worked with the university administration to produce systemic transformation of the information and communication structures of the library for all target groups, streamlining processes and increasing efficiency (Glitsch, 2016). This project also took place in several stages and - despite major differences between the library structures – served as a partial model for our process.
Research Methods

The study group used partially-structured personal interviews to interview students at five of six faculties of the University of Cologne in October 2018. Four hundred and seventy-seven interviews were conducted at five of the six faculties. The sixth faculty is the faculty of medicine, to which the National Library of Medicine belongs, so those students were not included in the sample. Sixty-seven percent of the participating students were working towards a bachelor’s degree, 20% were master’s candidates, and 13% took a state examination.

A mixed-method approach was defined for the study on the scientists. In December 2018, guideline-based individual interviews were used to interview scientists from the Faculty of Mathematics and Natural Sciences and the Faculty of Humanities. During the same period, an online survey was conducted in the Faculties of Economics and Social Sciences, Law, and Philosophy. This was done primarily for reasons of easier acquisition (no access to central email distribution lists) and the expectation that a combination of the methods would lead to more reliable results. The aim was to understand the users and their behaviour. The interviews took about 15 to 25 minutes. The individual interviews were audio-recorded. The audio files were listened to several times to document the results and key statements were recorded in writing. These were then transferred to an Excel spreadsheet. Thus, central statements and similarities as well as differences regarding the participants could be worked out.

The online survey was active for 27 days from 5 December to 31 December 2018 (weeks 49-52). The data obtained was stored online on the Unipark tool and then exported to Excel for further processing. The online survey was based on the guidelines designed for the individual interviews, but the questions were adapted to fit the structure of an online form, which differs considerably from a personal interview. The range of topics, however, remained the same to ensure comparability.

The study involved eighty-eight scientists. Fifty-three participants took part in the online survey, and thirty-five participants were interviewed individually. Looking at the participants in the online survey, 54.9% of the respondents held mid-level academic positions. Their average age was 40-49 years, with 45 years the mean value of the group. Professors (22%) and doctoral students (23%) were distributed rather equally. As expected, there was a clear age difference between these groups: professors were on average 50-59 years old, the doctoral students 21-39 years. Research and teaching were the main components of the interviewees' work. Ninety-six percent of the interviewees stated that they were predominantly or partially active in research, while the figure for teaching was 92%.

A similar picture emerges when looking at the demographic characteristics of the participants in the individual interviews. Here, too, more than half of the interviewees came from mid-level academic positions (53%). However, 33% of doctoral students were surveyed, significantly more than professors (13%). One possible reason for this is the limited availability of professors. Altogether, 71% of the participants were younger than 39, exactly 50% of the interviewees were between 30 and 39 years old. The total number of persons surveyed well-represented the distribution in four of the five faculties.

Results – Student target group

The first question for the students ("How did you hear about the University Library (USB) for the first time?") aimed at discovering the first personal contact or touch point that the students had had with their library. The answer was astonishing, as in all but one faculty, students had heard about the library from fellow students. Only in the faculty of philosophy had students learned about the library from their lecturers. The library’s website as a first source was in third place.

The second question ("When did you first visit the library?") also gave unexpected results. Only about half the students surveyed at the faculty of economic science (46.6%), the faculty of law (46.7%), and the faculty of mathematics and natural sciences (53.1%) stated that they had visited the library at the beginning of their studies. All in all, two-thirds of the students of the faculty of humanities (66.7%) have been early users and, with 71.2%, the faculty of philosophy was the leader in answering this question. All other students stated that they only got to know the library at a later stage, sometimes even towards the end of their studies when they wrote their final thesis. Of the students of the faculty of economic science, 27.7%
had not yet visited the library at the time of the survey. The result is a situation in which the initial contact with the library takes place unsystematically and rather randomly, and later, as opposed to earlier, in the course of studies.

When asked about the frequency with which students use the library's catalogue search, the following picture emerges: 56.5% of the students working towards a bachelor's degree, about 25.5% of in the master’s program, and 38.9% of state exam students never use the website for catalogue research. The figures for "once a week" vary: 22.2% for state exam students, 31.1% for master’s candidate students and 24.9% for students in the bachelor’s program. This shows that bachelor candidate students, in particular, do not know enough about the scope and quality of the catalogue or library collection. Many students in the bachelor degree program search the net freely and are satisfied with it. This is confirmed by the results of a study conducted by the University of Mainz in 2013 on the "Googleisation of information search": "The picture of the mostly rational is unrealistic since most search queries are made with little cognitive effort" [Stark et al, 2014, 9]. From the library’s point of view, use of the catalogue search should and could be significantly higher.

Of course, the library tries different ways to attract attention for its information and services among customers. The third question ("How do you assess the impact of the following media on yourself?") shows, however, that these efforts are partly successful. Fifty-four percent of participants rated flyers as less effective or without effect. Posters and information screens are rated better, with more than 40% of students saying that the information is "very effective" or "rather effective". This is especially true when moving images are visible on the screens – a finding that arose from additional comments.

The fourth question ("How often do you use the following services?") was designed to discover which social media channels the students used. Four out of five students (79%) said they did not use Twitter, but Facebook and YouTube usage was relatively high, i.e., at least once a day. Participants indicated they used Instagram (42%) and WhatsApp (89%) several times a day. When it came to accessing library services via social media, a different picture emerged: There were hardly any followers on Twitter and YouTube, the figures for the newsletter and for Facebook were all together significantly below 10%. The social media channels did poorly: WhatsApp: 8.7%, Facebook 7.8%, Instagram: 5.7% and Twitter: 0.5%. In view of these low levels of use, the library may have to rethink and restructure its commitment to social media.

Only minor demands are being made on the library’s capacity for informational services (Question 5). Seventy-five percent of participants would prefer to inform themselves independently and 16% would choose the newsletter. The information students wish to receive from the library is directed more towards practical, general information than content: eighty-seven percent want to be informed about opening hours, 75% about special events, 74% about general dates, 67% about trainings and courses, and 47% about media updates.

Recommended Actions

As fields of action and recommendations for the future, the following points are identified for the target group of students: The library should be present as a companion and guide in the student life cycle from the very beginning, i.e., from the time of enrolment. To accomplish this goal, a systematic process of getting to know each other should be developed, cooperating with student representatives (introductory weeks) as well as including faculties and lecturers as reliable and sustainable contributors with special programmes. Additionally, library services and news could be integrated into the online learning platforms of the faculties and institutes to increase visibility in just one system. The library must work on advertising and marketing its resources and reconfigure its social media presence to be attractive to students. Last, but not least, as students expressed a desire for more individual and group library workstations with sockets, these should be provided.

Results - Scientists

Results of the interviews and the online survey are summarised in clusters of content, as this seemed more appropriate for the form of data collection.

Research behaviour and usage of digital services
Results of the interviews showed that research takes place almost entirely online. Eighty-six percent of respondents (30 out of 35 participants) researched exclusively on the web. The high relevance of online sources and the low importance of personal visits to the library reflect some statements from the individual interviews: "I haven't been to the library since my studies."; "In the last six years, I used the library perhaps twice and that not even by myself, but by my assistant."; "[I research] online, but the decentralized library of the faculty is also important!"

Since most library usage is online, it is important to know which digital services the scientists know about and use. The online survey revealed that some digital services were unknown to many scientists and there were no differences in status groups or faculties (Question 1). Seventy-five percent of scientists didn’t know about the Competence Centre for Research Data Management. Additionally, the majority of respondents were unaware of the Open Access portal for teacher training – Edu-Pub (72%), and service of DOI allocation (55%). E-course reserves were by far the most frequently known about and used (42%). Repositories (11%) and Digitisation services (13%) were also used, but much less frequently. Between 20% and 43% of the respondents knew about digital services without using them.

Fig. 1: Usage of USB services (Online survey) [Which USB services do you know / use? (N=53)

Individual interviews showed a similar situation. Here, too, the majority of participants were not familiar with the library’s digital services and the participants explained the reasons for the low level of awareness. This included the fact that this offering is often not perceived as library services. One user stated: "I didn't even know that you can have DOIs assigned via the USB". Another reason could be the low demand of scientists for digital services. In an interview, a user mentioned: "We don't really have to digitise anything. If we publish something, it's usually in journals." In summary, there is both little knowledge and little use of digital services by scientists.

Experience with USB information and communication channels

Both research methods showed that the participants had little experience communicating with the USB. The users perceived a low level of communication as relatively unimportant. For the USB this has two meanings: the scientists are satisfied with the current status of general communication, but they do not consider USB and its services essential to their research work.

Use of social media

1 What USB services do you know and/or use? (N=53)
To determine the relevance of social media for the participants, the first question concerned private use of social media. In the online survey, WhatsApp was the most frequently used service, with 45% of respondents using Messenger several times a day. Facebook showed a strong contrast: while 27% of respondents used the network once or several times a day, 47% said they never did. Twitter and Instagram played a subordinate role in user behaviour. YouTube is used less often, but by most participants: Only 21% of respondents said they never used the video platform.

Similar to the target group of students, scientists rarely used USB library channels in social networks. Of those who regularly used Facebook, only three subscribed to the USB channel there (corresponds to 11%). On Twitter there were also three subscribers (corresponds to 6%), while none subscribed to the YouTube channel. Limiting use of social media to private purposes was stated most frequently as the reason, with only a few interviewees mentioning a lack of interest in the resources of USB. A further reason became apparent from the individual interviews: most of the scientists knew nothing about the fact that USB is active in social media. As with the students, answers to the question point to the necessity for developing specific marketing measures and increased public relations work.

The results show that social media are relevant communication channels for USB, with the exception of Instagram, which is rarely used. Overall, young scientists are increasingly using social networks, so the potential of this communication channel could increase over time. WhatsApp offers potential for USB due to its high usage intensity, but scientists – as well as students – use this service mostly for private purposes.

**Informational needs of scientists**

While respondents in the individual interviews stated they had little interest in USB information as a reason to not actively provide themselves with information, many were quite open to information on specific topics. This indicates that USB provides an attractive option for many scientists but is not sufficiently known to them. According to information provided by the interviewees in the online survey, there is a need for information primarily in the areas of "Restrictions in operating procedures", "Changes in opening hours" and "News in the library collection". These results strongly correspond to expressed student needs.

Sixty-two percent of respondents expressed a need for services outside of the "classic" USB tasks. Here, information on copyright, open access, and new tools were the main requests. Interest in the information mentioned was above average among doctoral students. It seems almost a paradox that these requirements are often already available in the library.

The most frequently mentioned preferred information channel was the USB website, followed by the newsletter, notices, and Facebook. Interestingly, despite the specific information about which channel is used to make which information accessible, no overall preferred channels for certain types of information could be identified, as needs depend strongly on personal inclinations. Only postings, such as Facebook for events, are generally favoured. Individual interviews also revealed that many scientists would like a personalized selection of information. This can be done within the framework of an individual selection or adapted to their field of study. This is intended to avoid an excessive flood of information, which often leads to a widespread disregard for the information as a whole.

**Use of the website**

The online survey showed that 75% of scientists visit the USB website regularly. In individual interviews, this figure was 50%. This result also underscores the relevance of the website as a USB communication channel. The clear difference presumably results from a methodical approach or from self-selection: participants in an online survey are an internet-savvy target group.

The main purpose of website usage is to research and retrieve literature. More than half of the respondents to the individual interviews stated that they used the website for this purpose. The catalogue search item received mixed results. In addition to positive statements, there were also negative responses that described the research process as complicated and confusing.
In addition, further services, such as the use of USB licenses for research in external databases or the extension of library collection, were mentioned within the scope of the purposes of use. The search for information, for example about opening hours, also plays an important role in the use of the website.

**Use of the newsletter**

At no point in the survey did the results of the individual interviews and the online survey differ as much as in the use of the newsletter. In general, the newsletter is currently only used by a small number of scientists. In the online survey, 30% of the participants indicated that they had subscribed to the newsletter, and 94% said that they read it regularly. In the individual interviews, 15% of respondents said they had subscribed to the newsletter. All of them said they read it. Here, too, the difference in response behaviour can be traced back to the methodology: participants in the online survey had deliberately taken the time to read the email inviting them to take part in the survey. It can be assumed that this group of people has a disproportionately positive attitude towards a newsletter. On the other hand, social desirability in the individual interview could have led all subscribers to the newsletter to state that they also read it. Also, no connection to the faculty or status group was recognizable with the subscribers of the newsletter.

In the search for reasons for not subscribing to the newsletter, it became apparent in the individual interviews that many respondents were unaware of the newsletter’s existence. Others were simply not interested or found the newsletter to be too long. This is consistent with the answers concerning interviewee opinions about the newsletter. While some participants praised the clarity and informational content of the newsletter, others voiced concerns about information overload.

**If I had three wishes…**

In the final part of the investigation, the scientists had the opportunity to make three suggestions to the USB. The scientists repeatedly praised USB and the commitment of the employees. Furthermore, they provided numerous suggestions for improvement, which could be divided into different categories. The most frequently mentioned wish was an extension of the collection, which is not surprising when asked about the use of a library. This applies not only to the analogue stock, but also to digital offerings and the provision of access to databases. Many participants also expressed wishes that would benefit their students, such as a larger reference collection of textbooks.

In addition, respondents commented on the research and lending process, especially via the website. There is a need for more support in this process that some respondents described as confusing and complicated. Additionally, there were requests to order and deliver literature from other libraries. There was also a desire for more support in the publication, indexing, and archiving of publications. Regarding the USB website, some wished it were more user-friendly. For many employees, the procurement of a library card was a cumbersome process, which is why some of them decided against it altogether. One criticism was that there are different cards for the different USB libraries. Access to the library itself should be as uncomplicated as possible. In addition, there was a desire for a more comfortable atmosphere as well as more workstations and sockets.

**Personas**

A further result of the individual interviews was the creation of personas. A persona is a fictional, yet realistic, description of a typical user of a product, system, or service. The information is personal, goes into detail, and the fears, needs, preferences, and patterns of action of the persons are also broken down by questions about behaviour (Goodwin, 2008). Personas enable the development of user-centered products and services and serve to better align future planning with the wishes and needs of users. They are archetypal for certain user groups but are not directly oriented towards individuals. They are usually created in the form of a true-to-life and realistic description in which certain characteristics are briefly formulated and categorized. By using personas in the development process, the different user types can be made more tangible (Harley, 2015).
The study group developed four personas to help library staff come closer to understanding different user types among scientists.

**Recommended actions – scientists**

**Focus primarily on new services**

The USB is the most important library for the scientists of the University of Cologne. It is valued for its range of literature for scientists and students and is seen as a central component of the university, but its more recent, additional offerings are used less frequently and are less well-known. They complement the library’s range of services and expand the brand core in addition to the classical range of literature. Special marketing for these new services is, therefore, extremely important. In this context, for example, an “alert search” is desired, which automatically applies a search based on predefined criteria to all new USB publications and sends corresponding notifications, if successful. Such a system already exists as an RSS feed. However, this system is hardly used and should be replaced by freely storable personal search profiles that are easy to handle.

**Expansion of digital services**

Individual interviews revealed clear preferences for digital services, particularly to accommodate exclusively online research in books and journals. In addition, digitisation is expected to lead to an ever-increasing preference for digital services (among people of the same age group), which will necessitate a shift from analogue to digital offerings.

**Advertise more actively for the newsletter / Personalize newsletter**

The newsletter achieves quite a good reach and is read by the subscribers. Apart from the newsletter, there are hardly any possibilities for reaching the scientists in a targeted and reliable way and maintaining a desirable, constant flow of information. The newsletter is necessary for providing information about new products and services apart from literature, as many scientists remain unaware of USB’s range of resources. Informing scientists all of USB services can be achieved by advertising, via the newsletter. Many scientists expressed scepticism about subscribing to the newsletter, saying that they don’t read newsletters because the information was irrelevant or that the content of the newsletter was not sufficiently tailored to individual needs. These concerns could be addressed if the contents of the newsletter were compiled according to faculties or individual specifications as a modular system and this change was communicated to them. In this way, on a small scale, USB could respond to the often-expressed desire for individualised information offers.

**Stronger participation in the selection of new literature and service offerings**
Scientists have repeatedly expressed a desire to participate in the acquisition of new literature, although this service already exists and is even offered in the event of unsuccessful searches. This participation offer is one of the few possibilities where information can be given to USB and a need for communication can be satisfied. Proactive advertising for the suggestion system or even active requests to lecturers and chair holders could lead to USB being considered as a source of literature by a larger circle of people. The entire communication process could be systematised and take place regularly.

USB website usability
Some of the scientists complained about a complicated search function or a lack of website clarity. They noted that the search function deviates from basic, standard patterns and is not intuitive. Additionally, the website is not clearly structured. Such a negative perception could quickly lead to the (complete) abandonment of a service. However, the usability of the website and other services was not the primary component of this study. Based on the feedback, a usability test should be conducted to obtain a more comprehensive and reliable result from which further recommendations for action can be derived.

Welcome package for new employees
A welcome package for new employees that explains all products and services in easily understandable, non-technical language could help bring new staff nearer and earlier to the library. The welcome package could also include an offer to subscribe to the newsletter and information on special USB services. In order to increase the attractiveness of the welcome package, cooperation with university administration (HR division) might be helpful.

Summary & Conclusions
Looking at the development of university libraries, two very different aspects become apparent. First, there is the very intensive use of the "library as a place", where students appreciate media and a learning environment as ideal conditions for learning. However, the second aspect is more problematic: the increasing difficulty of initial accessibility and the necessity for continuous communication with all target groups, who often show little interest due to many digital offerings outside the library. An early and systematic "onboarding process" for both students and scholars, clearly demonstrating the many benefits and offerings of the library, could improve this situation. The integration of library services into the faculty systems could also bring attention and increased use, since only one system would need to be used. This applies in particular to new services, such as research data management systems, the introduction of which should be made known as widely and rapidly as possible. Targeted marketing outside the library, therefore, is an important task for introduction of new, and often, digital services. Another important area to address is the personalization of services, so that information is received in a concentrated and precisely tailored manner and designed to be relevant to the topics of one's own discipline or research field (e.g., in newsletters). A review of engagement in social media networks needs to be conducted, since the expressed desire for exclusively private use of certain platforms (WhatsApp, Instagram) makes a rather reduced presence appear appropriate at this point. The results of this study are transferable in many parts to other libraries. Future studies might address implementation of additional measures to increase utilization of library resources, and, additionally, repetition of similar studies at suitable intervals could focus on implementing changes in user behaviour over time.

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