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"Push a badly built cart with bumpy wheels along a marshy meadow" Or: A Short Tale on the Importance of Information Science

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"Push a badly built cart with bumpy wheels along a marshy meadow"
Or: A Short Tale on the Importance of Information Science

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ABSTRACT

The poster will present a summary of the arguments and topics raised in protest and support letters against the forthcoming closure of the Department for Information Science at the University of Duesseldorf, Germany. Case study-like this will shed light on how peers and stakeholders perceive the role and relevance of information science in general as well as the contribution of the Duesseldorf Department in particular. The poster aims, however, at providing a historical description on the actions taken and the arguments made. It will rather present indicators than significant evidence about perceptions of information science. The results of the small-scale topical analyses of the support letters, tweets, and comments to an online petition reveal that typical fields like information retrieval and knowledge management as well as skills like research or assessment of information are seen as assets of information scientists. However, popularizing the benefits of and - along with it - establishing information science as main subject within the (information) society is still due.

Keywords

relevance of information science, community support, history of information science, Germany, case study

INTRODUCTION

A Brief Chronicle of the Closure of the Department

Due to the desire to foster Collaborative Research Centres (SFB, Sonderforschungsbereiche) and to apply for future funds of the excellence initiative by the German Ministry of Education and Research the Faculty of Arts and Humanities (as of early 2016: 12 institutes, 25 degree programs, 10,000 students) of the University of Duesseldorf has to displace two professorships within the faculty in favor of the SFB.

The presidency recommended cutting the professorship position at the Duesseldorf Department for Information Science (DInfoSci) with the retirement of its chairing professor Wolfgang G. Stock in 2019. Cutting one professor from DInfoSci entails the closure of the whole department, affecting four degree programs (B.A., M.A., minor subject, PhD.), more than 10 university lecturers and almost 1,000 students, as Professor Stock is the only full professor at DInfoSci. Also, DInfoSci is the only information science department at a full university in North Rhine-Westphalia (NRW), which with a population of 11 million is Germany's most populous state. Comparable degrees can only be obtained at three other full universities in Germany: Hildesheim, Regensburg, and Berlin (besides degrees from Universities of Applied Sciences at other locations). It should be noted that each of these departments has its specific focus in research and teaching, so that with the closure of DInfoSci a specialized area of information science research and education in Germany is lost. Reasons to close the DInfoSci mentioned by the faculty dean are the rare involvement of research cooperation with other faculties, the lack of external funding, and its high dependency on government funding that should be cut in near feature. According to Haycock (2010), these are three out of 16 criteria that are of major influence to the sustainability of a LIS-program in an institution.

The faculty council had to decide whether they will support the closure of DInfoSci at the end of January 2016. Although students flooded the meeting room and passionately discussed the case with Professor Stock, the dean of the Faculty of Arts and Humanities, and the faculty council, ten members voted for the closure, two against, and three members abstained from voting. At the beginning of April 2016 the final decision had to be made by the president of the University of Duesseldorf who confirmed the vote of the faculty council's majority and officially decided to close DInfoSci after Prof. Stock's retirement in 2019, leaving students with the opportunity to finish their studies by the end of the summer term 2022.

A Brief Chronicle of the Reactions of Peers and Stakeholders towards the Closure of the Department

The official process of closing DInfoSci at the University of Duesseldorf was accompanied by various initiatives from current students, alumni, and other stakeholders hoping to positively influence the university president's decision making process which started at the end of 2015. Besides several offline activities that took place, four major streams of online actions were conducted, which digital records can serve as starting point for our study.

Alumni of the department (amongst others the author IP) asked the national and international information science community for sending support letters to the faculty council and the president stating why it is important to keep DInfoSci. Two calls for support letters (January 20, 2016 for the faculty council meeting on January 26, 2016, February 15, 2016 for the meeting with the university president on March 17, 2016) were sent out via various mailing lists and personal networks which resulted in more than 70 letters sent to the dean of the Faculty of Philosophy and the University President (which the initiators know of and which they received as copy, the final number of letters may be higher). Supporters included alumni, national and international colleagues, national and international associations (e.g, Hochschulverband Informations-wissenschaft e.V. [HI; German Academic Association for Information Science], Deutsche Gesellschaft für Information & Wissen e.V. [DGI; German Association for Information & Knowledge], Association for Information Science & Technology [ASIS&T]), employers, politicians, and other stakeholders (e.g., staff at local job centers).

At the same time current students and representatives of the student council started an online petition[1] to raise awareness among peers and stakeholders as well as to provide a quick and easy way to express willingness to support DInfoSci. Signers can share their signature via Facebook and exploit their friend-of-a-friend-network for increasing the number of contributions. The online platform for the petition also allows publishing and sharing comments. As of August 2016 the petition records more than 2,100 signers and it had about 1,500 signers at the day of the faculty council.

On Twitter online activities were coordinated via the hashtag #saveIWS (for 'save InformationsWissenSchaft', the German translation of 'information science'). This hashtag was actively used to comment about the events, although there were some tweets that did not mention the hashtag. The most remarkable Twitter activity took place during the meeting of the faculty council when the Duesseldorf student radio station 'hochschulradio' reported the discussion in live-tweets.

Online activities as well as personal networks also led to appearance of DInfoSci in the more traditional media. For example local and national newspapers like Rheinische Post[2] or Frankfurter Rundschau[3] reported about the case as well as the specialized newsletter Password[4] concerned with information science and practice. Moreover, several open letters were published by peers and stakeholders via blogs or homepages (e.g., Oliver Bayer[5], Member of the Parliament of North-Rhine Westphalia, Pirate Party).

Motivation for this Study

We argue that the notification on the closure of DInfoSci gave the (German) community and related stakeholders a wake-up call that ultimately catalyzed the reversion to both traditional values of information science as well as to arguments envisioning its potential. Hence, the reaction of supporters provided via letters, comments to an online petition, and tweets revealed why information science - conceptually, in Germany, and in Duesseldorf - is important, which main concepts and applications are linked to it, and how it is perceived among colleagues, associations, alumni, employers, politicians, and other stakeholders. We will use this case study to argue that a more open discussion in politics and society about the impact, relevance, and benefits of information science in research and education is needed; especially because the government in Germany plans to increase support of information and communication technology, its use, and education for it to foster the future growth of its economy. Since similar approaches are discussed worldwide, the DInfoSci case can feed into the discussion by providing argumentative strategies applicable to Germany, Europe, and the World.

The remainder of the paper is structured as follows: We will briefly sketch the development of information science in Germany and at DInfoSci, before analysing the arguments the supporters provided.

A BRIEF OVERVIEW ON THE HISTORY OF INFORMATION SCIENCE IN GERMANY AND AT THE UNIVERSITY OF DUESSELDORF[6]

To understand the argumentation of and the topics raised in the support letters it is necessary to know about the role of information and information science as well as about their special (some might say 'problematic') situation in Germany and at the University of Duesseldorf in particular.

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[1] https://www.change.org/p/petition-zur-erhaltung-des-studienfaches-informationswissenschaft-an-der-heinrich-heine-universität-düsseldorf-saveiws

[2] http://www.rp-online.de/nrw/staedte/duesseldorf/uni-bestaetigt-informatik-studium-auf-dem-pruefstand-aid-1.5712460

[3] http://www.fr-online.de/aktivposten/aktivposten-studiengang-wird-weggespart,33064154,33676730

[4] http://www.password-online.de

[5] http://www.oliver-bayer.de/offener-brief-an-die-rektorin-prof-dr-steinbeck-der-hhu-duesseldorf

[6] This is a summary of Hauk & Stock (2012).

Institutionalization and Application of Information Science in Germany

The history of information science in Germany and at the University of Duesseldorf is strongly bound to government decisions and policy (Henrichs, 1997). The so-called Sputnik-shock in 1957 raised the awareness on the importance of tools for efficient scholarly communication, starting with the need for adequate ways of documentation of and access to scientific information in the US as well as in Europe. Hence, the development of national Information and Documentation projects accelerated, resulting in a nationally funded Information & Documentation development plan in 1962 to improve the information system infrastructure in Germany. The idea was to centralize the approaches and merge the former 650 German documentation centers into 20 specialized information centres (i.e., Fachinformationszentrum; FIZ), e.g., for medicine, and four non-topical information centers for patents, current research, environment, and technological standards. Because of an underestimation of the total costs for the program the plan was never realized as intended, only twelve information centres (Abbel, 1986) came into existence until 1986. In addition to the FIZs in 1976 the Society for Information and Documentation (Gesellschaft für Information und Dokumentation; GID) was founded to build the infrastructure for the FIZs and serve as think tank for information science.

Since its implementation the Information & Documentation program has been criticized for leaving the provision and maintenance of information to a great share to the government and complicating commercial exploitation. This changed in the 1980s when the paradigm shift to market economy occurred and the government substantially decreased its involvement in the information market but left it to commercial providers. This development as well as the poor performance of the GID led to its dissolvement (although parts of it fused with the Society for Mathematics and Data Processing) in 1987. At this time Professor Norbert Henrichs from the University of Duesseldorf was the scientific executive of the GID (see next paragraph). After that, the branch of information and documentation has mainly become a privately financed enterprise.

In contrast to the Anglo-American and other European traditions it was never possible to study library science at universities in West-Germany. To become a librarian students had to pass additional training (at specialized schools and on the job) after having completed a university degree in any subject. Hence, in Germany information science did not develop from library science or computer science but from information practice and documentation - because, back then, those who taught information science were mostly trained in other (i.e. humanistic and social scientific) disciplines (Henrichs, 1997).

Information Science at the University of Duesseldorf

The development of DInfoSci at the University of Duesseldorf is strongly linked with the name of Professor Norbert Henrichs, who was assigned to the Department of Philosophy. As we have seen, Henrichs played a major role in the development of the Information & Documentation program in Germany which, of course, also influenced the organisation of information science as subject in study programmes in Duesseldorf.

Although documentation was not part of the curriculum of philosophy Henrichs was deeply engaged in the creation of the philosophy library as well as of a database enabling Boolean retrieval. In 1967 this resulted in a cooperation between Henrichs and Siemens to develop methods and tools for the intellectual indexing and electronic retrieval of articles from philosophy. Because indexing via knowledge organization systems was considered not sufficient, i.e. not suitable for philosophical texts dealing with a great share of specialized terms, Henrichs developed a new indexing method. The so-called text-word method does not aim at finding general concepts to group and represent texts but acknowledges the specialized language of the authors by using the original term material stemming from the text (e.g., no translation will be carried out) and utilizes it as means for exploring the content of the philosophy articles. Moreover, the text-word method is a form of syntactic indexing allowing to represent the context the words appear in and to precisely retrieve documents. Hence, time series of how concepts evolve across texts and authors can be compiled, a process nowadays commonly carried out in informetrics studies. Later, Henrichs (together with 3M Company) built and ran a database with philosophical articles which served as use case for the text-word method and which included full-texts stored on microfilm.

Besides Henrichs' personal and methodological contribution to the field he was in charge of the development of an information science curriculum for the University of Duesseldorf since, at first, information science topics could only be studied by students enrolled in philosophy. In 1974 information science became sort of a minor subject which was first called 'applied philosophy' due to the roots in philosophy documentation and because it could only be studied as part of philosophy degree programs. It took until 1989 that information science became a minor subject on its own which also provided the opportunity to undertake doctorate studies. Both developments were driven by deciders who noticed the high degree of employability knowledge and skills that information science offered to students of the Faculty of Philosophy. The major turn came in 2004 when information science became part of the Bachelor and Master degree studies "Information Science & Language Technology" which changed its status to major subject (in addition to information science as bachelor minor and PhD studies).

With this turn, information science at the Duesseldorf University has been interpreted as course of studies that deals with topics beyond those of traditional library Science as well as computer and information Science. Currently, Bachelor major and Master major studies of Information
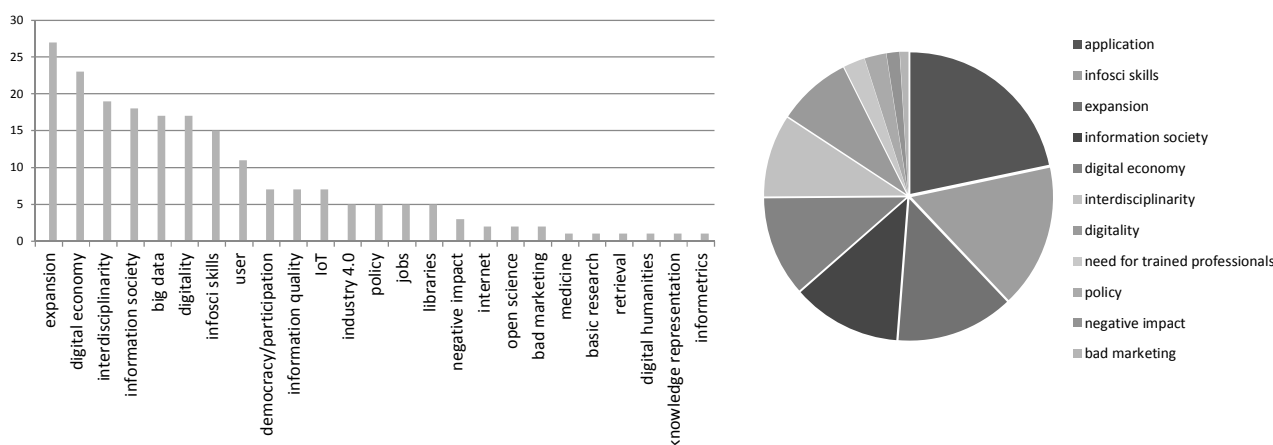
Figure 1. a) Concepts linked to information science; detailed codes (left); b) merged codes (right).

Science & Language Technology (IS&LT) contain courses on information science, computer science, linguistics, and computational linguistics. Since the 2000s information science as well as IS&LT have seen high interest reflected by 1,000 students on average enrolled in the programs.

METHODS

48 machine-readable support letters served as basis for the topical analyses of arguments demanding the preservation of DInfoSci[7]. The letters of this case study contain three types of information reflecting three levels of abstraction: a) arguments that stress the importance of information science in general and discuss it on a conceptual basis, b) arguments that relate to information science in Germany, and c) arguments that deal with the contribution of DInfoSci to the field of information science in Germany and worldwide. Those categories were used as basis for the coding during which also more specific topics have been identified. The letters were also categorized by source (national or international) and stakeholder group (e.g., alumni or association). To find arguments on the three levels of abstraction, the frequency of arguments per abstract level, the origin of the supporter, and type of stakeholders, the letters were manually coded by one author (IP). They will give a descriptive overview on how information science is perceived among stakeholders and will reveal tendencies about what concepts are linked to information science most often.

All tweets with the hashtag #saveIWS have been downloaded continuously between January 19-February 10, 2016 resulting in 1,645 tweets. Given that some tweets discussing the closure of DInfoSci may not have used the

hashtag this number is an underestimation of the full Twitter engagement. The tweets were analysed regarding their temporal as well as user-related distribution and their origin (i.e. location of the Twitter user according to the users profile information). The reasons why users signed the petition on the platform Change.org were downloaded via API on May 23, 2016 (n=392). The main topics mentioned on Twitter and Change.org were sorted by frequency. This adds to the understanding of what arguments were given to keep DInfoSci and the topics considered to be relevant for information science in general.
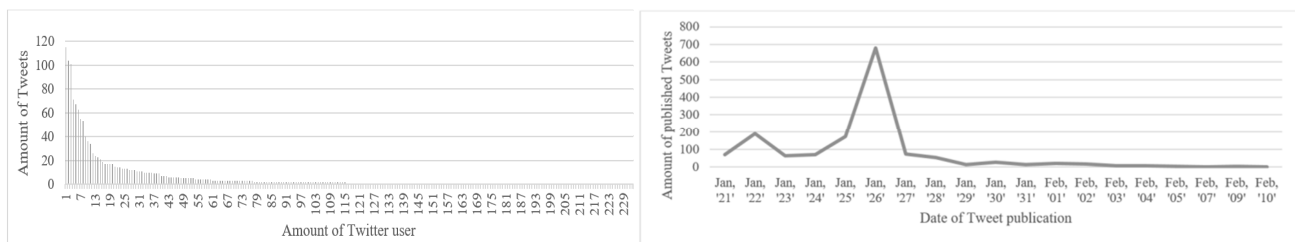
RESULTS

The protest against the closure of DInfoSci was carried out via different channels: most dominantly via social media and letters sent to the dean of the faculty and the university's president.

Analysis of Support Letters

More than two third of the letters (33) were sent from national sources, i.e. institutions, associations, or persons from Germany. The other letters came from abroad, amongst others The Netherlands, USA, Israel, and Canada. Most engaged in sending letters were colleagues (22 letters), associations (e.g., ASIS&T; 7 letters), representatives from the industry (6 letters), and alumni (6 letters). Libraries, research institutes, a politician, and the students' representation were also involved in the protest.

The topical analysis on the two local levels (i.e. Duesseldorf and Germany) showed following results: Duesseldorf's specific course of studies, that is unique in Germany (26 letters) and that attracted a substantial amount of students (34 letters) is seen as the main asset. Supporters pointed out the relevance of Duesseldorf's information science education for the region and regional economy (25 letters). The research strength and productivity of the Duesseldorf staff was emphasized multiple times (25 letters), especially describing how information science as whole field would be negatively affected when research at DInfoSci would have to stop.

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[7] The call for support letters informed about the structure of DInfoSci and study programs which may bias the topics mentioned in the letters (see http://tinyurl.com/saveiws). Also, supporters had only six days to draft and send letters which may also affect the wording and choice of arguments.

Figure 2. a) Twitter users listed by their number of tweets using the #saveIWS hashtag (left), b) Daily count of #saveIWS tweets (right). Both for time span: 01/21-02/10/16.

That information science in Germany is considered a 'small subject' ("Kleine Fächer") was stressed most often (27 letters), i.e. subjects and study programs that are run by only one-professor-departments or that do not occur too often across Germany and, thus, are subject to special care acknowledging their relevance and potential for interdisciplinary cooperation, issues concerning the society as a whole, and shaping a university's profile. Supporters argued that the closure of DInfoSci would lead to a substantial weakening of information science at Germany's universities (24 letters), narrowing the landscape of information science studies (15), which would ultimately negatively affect the entire German economy (11 letters).

The supporters of information science in general (Figure 1a) mostly argued that, except for Germany, most countries expand their information science programs (27 letters) since its role for the education of people for both the digital economy (23 letters) and the information society (18 letters) has been understood. They also see the potential and relevance of information science for interdisciplinary cooperation. The importance of information science was stressed by mentioning where skills and knowledge can be applied, e.g. big data, libraries, industry 4.0. In fact, when merging these classes most often information science was linked to applications or what skills it can provide (e.g., research, evaluation of information, user-centred information behavior and design) (Figure 1b).

Analysis of Tweets and Comments to Online Petition
The conversation on Twitter was led by @oomoepoo, a student from DInfoSci, @michaelklems, an entrepreneur

and information professional from Bavaria, Germany, and by @hochschulradio, the local radio station of University of Duesseldorf. Each of those twitter users has posted more than 100 tweets with the hashtag #saveIWS.

In total, the conversation on Twitter has caused a long tail of participants (Jones, 1997) - up to 234 users have posted at least one #saveIWS tweet (Figure 2a). Users that have joined the conversation around #saveIWS were mainly from Germany. Most came directly from Duesseldorf, but there were also many discussants from other cities – notably often from those cities which also host Departments of Information Science, e.g. Berlin. Furthermore, colleagues from overseas participated as well, e.g. from Canada and USA (Table 1). During the faculty council meeting (26st January 2016) many users have forwarded live-tweets out of the meeting room following the decision to close DInfoSci. Thus, this day peaked with 679 tweets. Afterwards the discussion on Twitter has more or less fallen to silence (Figure 2b). Finally, the content of #saveIWS tweets and of comments to the online petition revealed the following: In total, 616 tweets are retweets and 785 contain a link (total count of all #saveIWS tweets = 1,645). The comments to the online petition allow for more than 140 characters and mostly deal with personal statements by the signers. Figure 3a/b display word clouds (wordle.net) of the most used words on Twitter (Figure 3a) and on Change.org (Figure 3b). Due to the retweet option many users are prominent within the Twitter word cloud, e.g. the three most active users @oomoepoo, @michaelklems, and @hochschulradio. However, the majority of tweets exposes a "local" relationship with information science and the
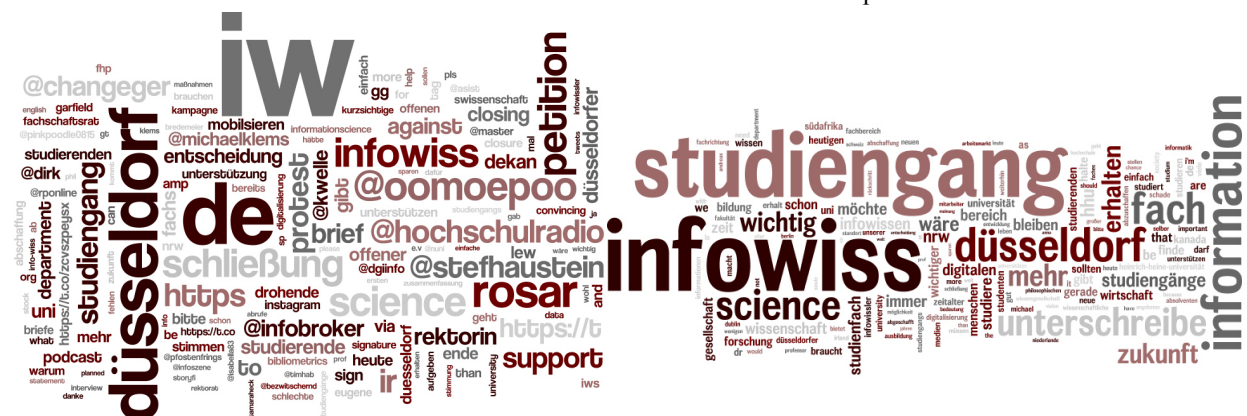
Figure 3. Word clouds from a) tweets with hashtag #saveIWS (left); b) from comments to online petition (right).

#saveIWS debate since they mainly deal with "schließung" [closure], "science", "rosar" [name of the faculty dean], "petition", and "studiengang" [degree program]. The Change.org word cloud (Figure 3b) summarizes 392 comments and is dominated by the word "studiengang" [degree program], a result which is most likely affected by the name of the petition. Many of the users stated why they have signed the petition by introducing their comment with "Ich unterschreibe weil" [I sign because], a functionality provided by Change.org. Furthermore, many of the statements included the importance of information science for research and education in the future (represented through the word "zukunft" [future]).

The comments to the petition as well as the tweets were strongly related with arguments considering the local advantages and situation of DInfoSci. The support letters were a richer source for conceptual arguments discussing the properties, benefits, and relevance of information science; maybe due to the higher variation in stakeholders sending letters and a majority of students sending tweets.

Table 1. Number of tweets sorted by location.

Tweets by location by country		Tweets by location (German cities)	
Germany	1051	Duesseldorf	526
Canada	19	Sonthofen	171
USA	10	Leverkusen	67
Netherlands	7	Dortmund	55
United Kingdom	6	Köln	44
Austria	4	Berlin	23
Australia	4	Frankfurt am Main	21
Switzerland	1	Potsdam	18
Sweden	1	Hamburg	15
Ireland	1	Tuebingen	12

CONCLUSION

We documented the activities taken and the arguments made during the protest against the closure of DInfoSci. Case study-like this research is rather of descriptive than investigative nature offering tendencies, rather than evidence, on the perception of information science as a discipline. The DInfoSci Case is an example for community mobilization, return to, and reactivation of values of the discipline – even if the protest did not prevent the closure in the end. The protest has led to a high popularity of DInfoSci on diverse social media channels like Twitter, Change.org, Facebook, and Instagram. Also, support letters were sent to positively influence the decision makers. Social media played a substantial role in popularizing the closure, but - more importantly - it acted as wake-up call to the community to join forces and find arguments on the relevance and benefits of information science on a conceptual, local, and global level. Whereas a closure of DInfoSci directly affects the local education and economy the supporters especially stressed the importance of

information science via its fields of application and the skills it trains. Both sets of arguments were seen as drivers to positively influence the world's (digital) economy and the development towards an information society. However, some supporters acknowledged that the value of information science might not be too apparent (especially not in Germany) and that marketing, lobbying, and educational advertising need to be enhanced soon to not lose the connection with decision makers and other regions: "Sustainable programs will need to demonstrate: strategic importance and impact, perceptual and political capital and financial impact" (Haycock, 2010, p. 138). Hence, this case study revealed that especially with the increasing importance of research and work that is related to information and communication technology, big data, smart cities, information literacy, industry 4.0, etc. we need to keep on going the conversation with the society, with politics, and – still – with colleagues from other disciplines on the impact and relevance of information science.

Henrichs said about the early German information scientists: "They accomplished no more, but on the other hand maybe no less, than to push a badly built cart with bumpy wheels along a marshy meadow until they reached the edge of the asphalt road" (Hauk & Stock, 2012, p. 161). Having seen the vitality of the information science community being able to clearly verbalize the relevance and importance of its field we cannot agree with him – instead we witnessed the cart comfortably riding the road and with the support of the community and researchers we truly hope that we will once see it on the autobahn.

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