Data driven online research. Potential specifications in relation to user needs.

Abstract

MOVING is an EU H2020 project that will enable users from all societal sectors (companies, universities, public administration) to fundamentally improve their information literacy by training how to choose, use and evaluate data mining methods in connection with their daily research tasks and to become data-savvy information professionals. In line with the idea of MOVING, we investigate specifications in relation to user needs in a data-driven online research. To this end, authors deal with the idea of online based research methodology as well as its sectoral specified usage patterns.

Research background and -question

The transition of scholarly work in research and training is triggered heavily by the upcoming of social media technologies. Recent studies demonstrate the serious influence of social media on scholarly communication. However, scientists from academia seem to be rather careful in trying new technologies (Kaiser, Köhler, Weith 2016), with most preferring private channels first (Pscheida et al., 2013). Nevertheless, science and innovation are an issue of wide relevance for both, industry and academia. Thus one may observe several trials to meet the challenges of the introducing new methodological approaches effectively. Among that the *eScience – Research Network Saxony* as well as the *Leibniz Research Alliance Science 2.0* are the earliest adaptors.

Figure 1: Screenshot of the website of the eScience – Research Network (cf. https://escience.htwk-leipzig.de/)

Where as Leibniz mainly tries to collect potentially concerned actors in the sense of a community of practice around annual conferences, the eScience – Research Network Saxony has developed a collaboration platform intending to support daily routines of scientists from various disciplines.

However: what are the routines of a contemporary scientist – and does his / her work seriously differ from what a researcher or data scientist in industry has to deal with? That question is continuously addressed by both networks in a joint activity when conducting Germany-wide surveys. Beyond the newly started H2020 project MOVING is the consequent next step in order to understand and profile the very use cases of such research activity in even more detail.

Method

While research on online learning analytics is already quite profiled and often uses SNA (Stützer et al., 2013), data about scientists' research activity is mainly adopting descriptive data only (Pscheida et al., ibid). To overcome this limitation, in a first step a series of expert discussions took place which lead to a general characterization of the research problem.

Findings

The following outcomes where reported:

1. Currently, in research growing amounts of text data need to be processed by a single (data-)scientist.

2. Problematic is that content is often not read at all (ignored) or only partially read (bias in the selection of content).

3. It seems that respective researchers do not have appropriate socio-technical working environments to handle such work efficiently.

4. Also the competency seems to be rather limited which is needed in keeping up with latest tools and technologies.

All in all these observations lead to the interpretation that there is neither a clear picture of what a scientist needs to do in order to be successful and as well how respective training should look like to prepare junior scientist or re-focus senior scientists' skills.

Outlook – next steps of the MOVING project

The authors decided to apply the concept of the use case which is rather known in computer and design sciences, but less found in the social sciences. This instrument is to be used for modelling specific conditions of using ICT as well in relation to a certain domain.

In a further step, the authors want to alleviate this situation by developing a platform (based upon previously used e-science technologies) that supports the users in organizing the information first in a field experimental design which will lead to new insight into respective routines of researchers.

As well it is planned to provide advice how to deal with large amounts of information to respective researchers. To his end, MOOCs will be used for training the users.

References

Kaiser, D. B., Köhler, T. & Weith, T. (2016) Knowledge management in sustainability research projects: Concepts, effective models, and examples in a multi-stakeholder environment. Applied Environmental Education & Communication 15, 1, 4-17.

Pscheida, D., Köhler, T. & Mohamed, B. (2013). What's your favorite online research tool? Use of and attitude towards Web 2.0 applications among scientists in different academic disciplines; In: Marsden, C. & Tassiulas, L.: Proceedings of the 1st International Conference on Internet Science; Brussels, Sigma Orionis.

Stützer, C. M., Köhler, T., Carley, K. M. & Thiem, G. (2013) „Brokering" Behavior in Collaborative Learning Systems Original; In: Procedia - Social and Behavioral Sciences 100 [OAP via http://www.sciencedirect.com/science/article/pii/S0277953613005029].

Authors: Thomas Köhler (1), Ansgar Scherp (2), Sabrina Herbst, (3), Michael Wiese (4) & Vasileios Mezaris (5)

1_TU Dresden, Faculty of Education, Germany / 2_Leibniz ZBW Hamburg, Germany / 3_TU Dresden, Media Centre, Germany / 4_Ernest & Young, Germany, / 5_CERTH ITI, Greece.

More Information: http://moving-project.eu/

DRESDEN concept Exzellenz aus Wissenschaft und Kultur