PaperHive – a coworking hub for researchers that aims to make reading more collaborative.

blogs.lse.ac.uk/impactofsocialsciences/2016/06/10/paperhive-the-coworking-hub-for-researchers/

Managing research material in the digital age is still a widely inefficient process. Alexander Naydenov, co-founder of PaperHive, looks at how this web platform could transform reading into a more social and active process of collaboration. Close to 1.2 million academic articles and books can currently be read and discussed with PaperHive. The platform enables contextual and structured discussions in real time. Comments are persistent, shareable and can become a part of the academic literature.



Researchers read 12-25 hours a week depending on their discipline. Yet, understanding research articles and books – some of the most complex documents in the world – is hard and inefficient in isolation. Students and inexperienced researchers waste time trying to decipher these texts alone, senior researchers dig through folders of articles irrelevant for their own work, and all at some point might repeat unknowingly others' mistakes or include these as a citation in their own paper.

There have been incredible innovations in the field of scholarly communication in the last 10 years, often inspired by technological and social trends outside academia: social networks, collaborative writing tools, and a number of field-specific instruments for increased productivity. However, reading has mostly remained an uncooperative activity.

Startups, innovators and publishers have focused on fostering social sharing and discovery assisted by recommendation algorithms. University libraries have not been inactive in their attempts to support a more diverse user base which now largely consists of digital natives, but their efforts to do more with existing content are still futile (see – Outsell Library report "2016 Library Market Size, Share, Forecast, and Trends"). While programmers have stackoverflow as a go-to place for even some of the most specific questions, research questions related to a particular academic paper often remain unanswered in the author's mailbox, or have to be answered again and again.

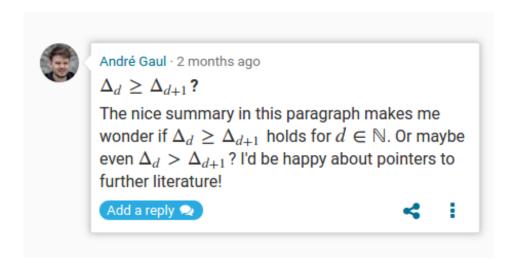
Dr. André Gaul, co-founder of PaperHive: "It is very frustrating to realise you wasted a lot of time rediscovering results, references or even mistakes that others found before – just because the relevant information is buried in a giant pile of sticky notes on someone else's desk". As a developer and an open source activist since the end 90's André started working on a solution of the problem after finishing his mathematics PhD at the Technical University of Berlin.

Collaborative reading

PaperHive is a cross-publisher layer of interaction on top of research documents that enables contextual and structured discussions in real time. The web platform transforms reading into an active process of collaboration.



Researchers and students can attach questions, opinions, formulas, and figures directly in the margin of the original text where everyone can benefit from their contributions (see an example). Experts save time, benefit from the feedback of their colleagues, discover relevant related content, get in contact with future collaborators, and increase the visibility of their own work. All public discussions are licensed under the CC-BY 4.0 licence. The annotations are made available with the data models developed in the W3C Web Annotation groups. Comments are persistent, shareable and can become a part of the academic literature.



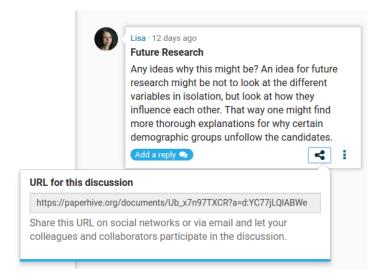
Deep links to specific passages or discussions make sharing of information with colleagues fast and easy. Readers do not need to scan through the entire document after receiving a recommendation for an important part of a document – no matter if it is a formula on page 10 in line 24, or an entire paragraph worth citing in an upcoming paper.

Our study shows that for both candidates followers with more social capital are more likely to leave. Also, the unfollowers are more likely to be female than the followers. The phenomenon is particularly pronounced for Clinton. Lastly, middle-aged individuals are more likely to leave Trump and the young are more likely to leave Clinton.

It is important to note that our study is based on the actual following and unfollowing actions of high-potential voters at a very large scale. This is akin to voting with their feet, thus is arguably more reliable than polling data.

6. REFERENCES

- C. L. Brians. Women for Women? Gender and Party Bias in Voting for Female Candidates. American Politics Research, 2005.
- [2] K. Dolan. Is There a "Gender Affinity Effect" in American Politics? Information, Affect, and Candidate Sex in U.S. House Elections. *Political Research*



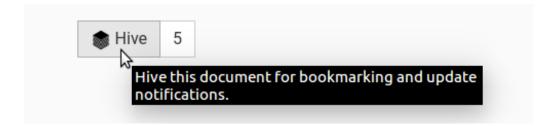
Close to 1.2 million academic articles and books can currently be read and discussed with PaperHive – including all documents on arXiv's repository and the OAPEN online library and publication platform. More than 12 million more articles from Elsevier's ScienceDirect database will be made available in the next weeks. A partnership with the global library consortium Knowledge Unlatched now also allows the interaction with all books the organisation has made open access. These include new works by leading experts in political science, anthropology, media, and history.

Publishers and repositories can easily integrate their content on PaperHive. The documents remain on the original website and by using the full power of today's browsers, the integration works seamlessly with both open access and subscription-based documents.

Papers alive

Research and innovation are chain reactions of cooperation. PaperHive's vision is in the spirit of organizations like arXiv and GitHub proving that research and creation are always a work in progress. ArXiv has truly changed the concept of a finished research document with its multiple versions of a scientific paper that once submitted is publicly accessible, (peer-)reviewed, improved, and later re-submitted. GitHub created a space where communities

can develop and improve code collaboratively. By popularizing pull requests, becoming a contributor to free software projects became as easy as pushing a single button.



PaperHive adds another element to the concept of a living document. It enables readers to stay in touch with the articles of interest beyond just saving them in a folder. By hiving a document, researchers not only manage their literature but also make sure to never miss updates, interesting questions or further literature attached to an article.

The Researcher's Companion

PaperHive's extension for Google Chrome and Firefox serves as a researcher's companion by notifying them about discussions on content they are currently reading. It also informs readers about open access versions of nonopen access articles. The function now covers all pre-prints from arXiv. For example, if a reader is off-campus and cannot open the publisher's version of an article, the PaperHive extension helps out by providing a link to the latest arXiv version (if available) which could save mathematicians, computer scientists and physicists from a lot of hassle.

Note: This article gives the views of the author, and not the position of the LSE Impact blog, nor of the London School of Economics. Please review our Comments Policy if you have any concerns on posting a comment below.

About the Author

Alexander Naydenov is co-founder and head of marketing at PaperHive. He has a M.Sc. in Business and Computer Science from Humboldt University, Berlin and a B.Sc. in Economics from the University of Mannheim. He previously coordinated one of the largest social entrepreneurship networks in Eastern Europe Where Ideas Find their Home. Alexander is passionate about behavioral economics and innovations in science communication. He tweets at @paperhive and @vremigrant.

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