

Impact case study (REF3)

Institution: Heriot-Watt University		
Unit of Assessment: B11 Computer Science and Informatics		
Title of case study: Making articles systematically discoverable for researchers – JournalTOCs		
Period when the underpinning research was undertaken: 2014 – Present		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Santiago Chumbe	Assistant Professor	Jun 2000 – present
Period when the claimed impact occurred: 2014 – Dec 2020		
Is this case study continued from a case study submitted in 2014? N		
<p>1. Summary of the impact</p> <p>JournalTOCs helps researchers to timely access ‘personalised’ new research by alerting them when new articles are published in their selected journals and, by providing them with full-text links when the articles are Open Access (OA). These OA links were the result of JEMO, a technology developed by JournalTOCs in 2014 to resolve the problem of OA articles published in hybrid journals being erroneously kept behind pay-walls. Since 2015, JEMO has been adopted by over 20,000 scholarly journals and publishing platforms including Atypon. This has led to JournalTOCs being used extensively worldwide by multiple research centres, libraries and multinationals. JournalTOCs also works with over 3,770 scholarly publishers and its effect reaches 78 licensed research centres in 19 countries.</p>		
<p>2. Underpinning research</p> <p>JournalTOCs is a university spin-off from research undertaken at the ICBL (Institute for Computer Based Learning) of Heriot-Watt University. JournalTOCs technology includes real-time data-mining software to discover latest content published in scholarly journals. The software first aggregates, normalises and enriches metadata and then makes it freely available for reuse. JournalTOCs uses JEMO to identify OA content in the metadata extracted from hybrid journals. To further develop JournalTOCs JEMO was the result of a project funded by the EPSRC Impact Acceleration Account (IAA) (2015). The project had twofold objectives:</p> <ol style="list-style-type: none"> (1) to help publishers make their journal metadata readily available for systematic identification of OA articles and, (2) to prevent OA articles from being labelled as non-OA across the production, discovery, and delivery chain of e-journals. <p>The JEMO project was a partnership formed by the ICBL with five publishers (Oxford University Press, Libertas Academica, Edinburgh University Press, IGI Global and Thieme), INASP (the International Network for the Availability of Scientific Publications) and a consortium of six NHS-England hospital libraries. JEMO includes a metadata schema adapted from the Dublin Core,</p>		

PRISM and Creative Commons (CC) metadata schemas. JEMO showed publishers how it was possible to make their OA content discoverable, using a cost-effective and relatively technically easy process. At that time, NISO produced its own specifications (the NISO RP-22-2015 recommendation) and disseminated its usage among publishers. However, JEMO has proved to be much more effective than the NISO RP-22-2015 metadata specification and has been widely adopted by publishers and hosting platforms. The results produced by the JEMO project was expanded with the MOOD Knowledge Transfer Project to cover online-first articles.

The application of these technologies developed by the ICBL for JournalTOCs resulted in a free service for hundreds of thousands of individual users. In addition, a Premium service, created to ensure the sustainability of the spin-off, has been licensed to more than 70 large and small research centres and libraries worldwide at very economic licence rates. Of special relevance to Open Access, and crucial to the Plan S initiative of the European Science Foundation, is the tagging of journals in the JournalTOCs database as OA or hybrid. In 2018, JournalTOCs included more selected OA journals than other services, and was unique in having identified and included individual OA articles from more than 12,000 hybrid journals. A coherent subject indexing further enhances the value of JournalTOCs.

3. References to the research

[3.1] Chumbe, S, Kelly, B & Macleod, R 2015, 'Hybrid Journals: Ensuring Systematic and Standard Discoverability of the Latest Open Access Articles', *Serials Librarian*, vol. 68, no. 1-4, pp. 143-155. <https://doi.org/10.1080/0361526X.2015.1016856>

[3.2] Chumbe, SS, MacLeod, RA & Kelly, B 2015, We should not light an Open Access lamp and then hide it under a bushel! in B Schmidt & M Dobрева (eds), *New Avenues for Electronic Publishing in the Age of Infinite Collections and Citizen Science: Scale, Openness and Trust: Proceedings of the 19th International Conference on Electronic Publishing*. IOS Press, pp. 102-112. <https://doi.org/10.3233/978-1-61499-562-3-102>

4. Details of the impact

Licensed research centres and libraries from hospitals, universities, governmental agencies, global organisations, banks as well as biotechnology and pharmaceutical companies use JournalTOCs. They use JournalTOCs to discover critical research results for their researchers. The usefulness of JournalTOCs was enhanced when the results of the JEMO (2015) and MOOD projects were integrated within JournalTOCs, enabling it to provide users with full-text links for individual OA articles. JEMO has been adopted by over 20,000 scholarly journals and publishing platforms such as Atypon, leading to JournalTOCs now working with over 3,770 scholarly publishers and its effect reaches 78 licensed research centres in 19 countries.

Research-driven biopharmaceutical companies such as NovoNordisk Pharma, Roche and Ferring Pharmaceuticals as well as hospitals from the NHS, The Australian Health Service [5.1] and the New Zealand Police are using JournalTOCs, thus saving considerable time and resources. The Information Resource Manager from Ferring Pharmaceuticals described how his company uses JournalTOCs, "The service is used as a one-stop-shop for signing up for TOC alerts. As knowledge workers in commercial organisations (based on R & D activities) we are in a combined situation of being extremely dependant on having exhaustive knowledge of new developments within our research field and having very little time to identify all relevant sources

of information. A service that allows you to quickly and conveniently sign up for TOCs from any journal of potential relevance is a highly valuable tool." (5.2)

The Knowledge & Information Coordinator (New Zealand Police Library) confirmed that, "Having an institutional licence to JournalTOCS over the last five years.....has enabled us to provide a one-stop-shop approach to providing table of contents alerting to all our subscribed journals. If we did not have an affordable product like JournalTOCs, it would be a logistical nightmare trying to provide a table of contents service to our customers" [5.3].

The European University Institute, Library describing the, "unified interface and the alerts' service"...as..."particularly valuable" [5.4].

Over 70 companies and organisations bought licences for JournalTOCs Premium services and thousands of researchers and librarians use the free version of the technology every day. In addition, many research organisations from the UK, USA, France, Denmark, Canada, Australia, The Netherlands, New Zealand, Italy, Norway, Germany, Brazil and Spain, are accessing information tagged with JEMO elements through JournalTOCs web services (API) to integrate new research with OA identification in their own applications. In addition, important worldwide organisations such as the Food and Agriculture Organization (FAO), the International Monetary Fund's (IMF) Library Network, the International Labour Organization (ILO), and the European Commission are Premium partners of JournalTOCs.

The largest consortium was signed with the Indian Space Research Organisation (ISRO) to provide premium access to new research, identified as Open Access or non-OA regardless of their provenance. The ISRO consortium includes 17 large aerospace research centres located in different parts of India (<https://www.isro.gov.in/about-isro/isro-centres>). The leading research centre of ISRO is the Vikram Sarabhai Space Centre (VSSC). This consortium has been running since June 2017. Since the formation of the consortium JournalTOCs has been introduced to all libraries under ISRO. Currently 17 libraries are using this service and total number of users is about 8,000. In the VSSC library there are about 2,000 users and some of them following approximately 100 journals [5.5].

In addition, JournalTOCS established a partnership with the Quality Open Access Market (QOAM) service. QOAM was created by the CWTS (Centre for Science and Technology Studies) of Leiden University from The Netherlands. QOAM is a marketplace for scientific and scholarly journals which publish articles in Open Access. JournalTOCs has become critical to QOAM operation in matching author experiences with a journal against its publishing fees [5.6].

5. Sources to corroborate the impact

[5.1] Librarian at the Library and Information Service, Women and Newborn Health Service, King Edward Memorial Hospital, Australia, will confirm the use of JournalTocs and its importance.

[5.2] The Information Resource Manager, Global Regulatory Affairs, Corporate Information Services, Ferring Pharmaceuticals, will confirm the use of JournalTocs and its importance.

[5.3] The Knowledge & Information Coordinator, New Zealand Police Library, will confirm the benefits of using JournalTOCs.

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[5.4] Letter from the European University Institute, Library confirming the use and benefits of using JournalTOCs.

[5.5] Letter from Indian Space Research Organisation confirming extensive use of JournalTOCs within the VSSC network.

[5.6] Letter from the Centre for Science and Technology Studies Leiden University, confirming the partnership with QOAM and importance of JournalTocs to QOAM operations.