Managing the Scientific Literature Overload: Digital Object Identifiers and Scopus

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Abstract

JMWAIS is part of the growing expansion of digital publishing. JMWAIS is encouraging active researchers to share their scholarship widely. The Journal of the Midwest Association for Information Systems (JMWAIS) is contributing to the expansion of scholarly publication and to the scientific literature overload. JMWAIS editors also seek to participate in possible solutions to better managing, finding, and disseminating scholarly communications. To further this goal, in Fall 2017, JMWAIS editors created Digital Object Identifiers (DOI) for all previously published articles. Future JMWAIS articles will also be assigned individual DOI. Digital knowledge can be filtered and managed.

Keywords: Digital object identifiers, CrossRef, information overload

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1. Overview

Scientific literature is increasing rapidly with more than 2.5 million new articles published per year (Jinha, 2010). Also, the number of active researchers and the number of scientific journals are increasing. The Journal of the Midwest Association for Information Systems (JMWAIS) is both part of the problem and a participant in a possible solution. In Fall 2017, JMWAIS editors created Digital Object Identifiers (DOI) for all previous JMWAIS published articles.

We know that scientific publishing is experiencing digital disruption, cf., Boon, 2016. Funding agencies want to keep better track of publications resulting from sponsorship, authors want to satisfy funders and also have a permanent archive of their research. Publishers want a unique identifier for articles they publish. All of these needs influenced the decision to adopt digital object identifiers. In database parlance, a digital identifier is a unique primary key for each object of scholarly contribution.

This commentary discusses the adoption and implementation of Digital Object Identifiers (DOI) for JMWAIS and other Association for Information Systems (AIS) journals, proceedings and other digital content. Scopus (https://www.elsevier.com/solutions/scopus), an Elsevier resource, provided a web-based tool to create and record the appropriate article meta-data and assign a DOI. Scopus is the “largest abstract and citation database of peer-reviewed literature.”

2. DOI Adoption Story

In mid-August 2017, JMWAIS editors received an email query from Professor Fred Adam (8/21/17) “I am delighted with the publication of our paper in the special issue of JMWAIS which I have received yesterday. I am just wondering if there is a DOI for the journal?” We had no immediate response other than “We are investigating. Perhaps you can send information about DOI.” The acronym DOI is new to many researchers. The email reply from Professor Adam - “my funding agency only recognizes my publications if I can provide a DOI for them” - motivated serious investigation of his query. Correspondence and other online search suggested that at a minimum in the Information Systems field the European Journal of Information Systems (EJIS), Journal of Management Information Systems (JMIS), Journal of Decision Systems (JDS) and Journal of Information Technology (JIT) all assign DOI to articles.

Our initial investigation found a URL with information on DOI at https://www.doi.org/faq.html. Based upon that information, Carol Stoak Saunders, the Association for Information Systems Vice President of Publications, was contacted to see if she had “explored using a DOI system for all AIS journals.” Her reply (Saunders. 8/22/17) was positive and encouraging. “Yes, as a matter of fact I have. We have become members of Crossref. We are going to start assigning DOIs to JAIS and CAIS. I am going to start working on a DOI labeling scheme tomorrow. It costs $1.00 for each current DOI tag, $.15 for each article that is older than 2 years …”

Both need and serendipity has led us on a journey to use Digital Object Identifiers (DOI) handled through Crossref to identify JMWAIS articles. A group of 11 AIS Journal Editors and members of the AIS Publications Committee worked with Saunders to develop the DOI scheme to be used for all AIS journals. Following email discussion, the group concurred in using an intelligent identifier that conformed to DOI and Crossref (http://www.crossref.org) norms. Each AIS DOI begins with 10.17705. This prefix number was assigned by Crossref, the representative of the DOI consortium, that AIS has joined as an affiliate. The prefix is a unique number of four or more digits assigned to organizations; the suffix is assigned by the publisher. The DOI suffix for AIS journals follows a three element format -- tnnn.xxxxx. In this format, t= type (1= AIS journal (currently 6 journals); 2= AIS affiliated journals (currently 9); 3= AIS chapter journals (currently 4); 4= conference proceedings (currently 14); 5 = AIS chapter conference proceedings (currently 6). The next element nnnn = name code where JAIS is jais; ICIS is icis; AMCIS is amci; and JMWAIS is jmwa. The final element xxxxx = sequential number assigned by the journal editor starting with 00001. An example would be: 10.17705/1jais.00001.

In an email dated October 11, 2017, Carol Saunders proposed “Here’s a deal, Daniel. We will not charge you for the 2015, 2016 and 2017 articles if you will serve as our guinea pig and help walk us through the procedures. What do you think?” We agreed. JMWAIS Editor Daniel Power emailed “I’ll be a guinea and take notes for a user guide.” By October 22, 2017, all 35 JMWAIS articles had been uploaded. JMWAIS served as a test journal for the project and AIS covered
the costs to purchase the 35 DOI. Many thanks to Carol Saunders and AIS. AIS has activated a DOI field in the metadata in the AIS eLibrary. Appendix I contains a list of all the JMWAIS articles with the associated DOI.

3. Terminology and Benefits

Editors at JMWAIS are concerned about improving the dissemination, storage, and retrieval of scholarly articles. Ware and Mabe (2016) note “Journals form a core part of the process of scholarly communication and are an integral part of scientific research itself. Journals do not just disseminate information, they also provide a mechanism for the registration of the author’s precedence; maintain quality through peer review and provide a fixed archival version for future reference. They also provide an important way for scientists to navigate the ever-increasing volume of published material (p. 16).” New journals need to be especially responsive to changes in these tasks.

What is a Digital Object Identifier? A digital object identifier (DOI) is a unique alphanumeric string assigned by a registration agency, the International DOI Foundation, to identify content and provide a persistent link to its location on the Internet. The publisher assigns a DOI when an article is published and made available electronically. According to doi.org, “the DOI system provides a technical and social infrastructure for the registration and use of persistent interoperable identifiers, called DOIs, for use on digital networks.”

What is CrossRef? CrossRef is "a not-for-profit membership organization for scholarly publishing working to make content easy to find, cite, link, and assess. We do it in five ways: rallying the community; tagging metadata; running a shared infrastructure; playing with new technology; and making tools and services to improve research communications." The URL for CrossRef is https://www.crossref.org/.

What is the benefit of DOI for JMWAIS and MWAIS? The newer scientific social networks, like academia.edu and ResearchGate.net, and resources like Google Scholar (https://scholar.google.com/) can more easily find and index JMWAIS articles and potentially proceedings papers. Research funders are playing an increasingly important role in scholarly communication and this change meets a common requirement imposed upon authors. Even with open access people still need to find the articles and authors want a permanent link to the Version of Record (VoR) for an article. Finally, having Digital Object Identifiers (DOI) should increase the likelihood that JMWAIS articles will be found and indexed in selective databases such as Scopus and Web of Science.

According to The APA Style Guide to Electronic References, 6th edition, authors “should use the DOI format … If it is presented as the newer alpha-numeric string, use that as the DOI. … Because online materials can potentially change URLs, APA recommends providing a Digital Object Identifier (DOI), when it is available, as opposed to the URL. DOIs are an attempt to provide stable, long-lasting links for online articles.”

DOI and Scopus participation helps ensure: 1) date-stamping of an author’s authorship and ownership of a scholarly communication; and 2) improved dissemination of the scholarly work given the very large and rapidly growing volume of digitally published scholarship. The AIS eLibrary provides an archival record and the DOI links to the AIS eLibrary. Authors retain copyright of an article and may include it in other digital repositories. Authors are encouraged to include the DOI when citing the article and storing it in a repository to encourage cross referencing.

Journal of the Midwest Association for Information Systems (JMWAIS) remains a double-blind, peer-reviewed, quality focused, and open-access online journal. JMWAIS strives to ensure that original Information Systems research broadly defined from scholars linked to the Midwest United States is widely shared and disseminated. Articles that are published in JMWAIS are available from the AIS eLibrary and at http://jmwais.org/. DOI registration complements our purpose.

4. Overview of the contents of this issue

This issue of the journal includes three traditional research articles.

A. Luse and J. Burkman present a novel example of using derived simulated data based on real-world datasets in statistics classes that instructors have deeper knowledge about to better prepare students for real-world data analysis applications. Their experiment shows that there is no statistically significant difference between the objective outcomes and the subjective perceptions of the derived data and their real-world datasets counterparts.
M. Eierman and J. Iversen examine the ability of students to learn programming by comparing test-driven development and pair programming. Their study indicates that both pair programming and test-driven development are helpful. However, test-driven development is seen as more valuable.

T. J. Strader and A. Bryant look at a relatively large number of regional master’s level universities and use the motivation-ability-opportunity framework to identify the characteristics of schools that have developed data analytics programs. Their study also suggests two motivations for the development of data analytics programs.

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5. References


Appendix I. Journal of the Midwest Association for Information Systems (JMWAIS)
Article Citations with Digital Object Identifiers

*JMWAIS Volume 2015, Issue 1, January 2015 DOI: 10.17705/3jmwa.201501*
URL http://aisel.aisnet.org/jmwais/vol1/

URL http://aisel.aisnet.org/jmwais/vol1/iss1/1/

URL http://aisel.aisnet.org/jmwais/vol1/iss1/2/

URL http://aisel.aisnet.org/jmwais/vol1/iss1/3/


URL http://aisel.aisnet.org/jmwais/vol1/iss1/6/


*JMWAIS Volume 2015, Issue 2, July 2015 DOI: 10.17705/3jmwa.201502*
URL http://aisel.aisnet.org/jmwais/vol22/

URL http://aisel.aisnet.org/jmwais/vol2/iss2/1/


URL http://aisel.aisnet.org/jmwais/vol2/iss2/4/


JMWAIS Volume 2018, Issue 1, January 2018 DOI: 10.17705/3jmwa.201801 URL http://aisel.aisnet.org/jmwais/vol2018/iss1/1/

Power, Hadidi / Managing the Scientific Literature Overload

URL [http://aisel.aisnet.org/jmwais/vol2018/iss1/1/](http://aisel.aisnet.org/jmwais/vol2018/iss1/1/)

URL [http://aisel.aisnet.org/jmwais/vol2018/iss1/2/](http://aisel.aisnet.org/jmwais/vol2018/iss1/2/)

URL [http://aisel.aisnet.org/jmwais/vol2018/iss1/3/](http://aisel.aisnet.org/jmwais/vol2018/iss1/3/)
Author Biographies

Daniel J. Power is a Professor of Information Systems and Management in the College of Business Administration at the University of Northern Iowa. Power serves as the editor of the Journal of the Midwest Association for Information Systems (JMWAIS), DSSResources.com, PlanningSkills.com, and Decision Support News. His research interests include the design and development of decision support systems and how these systems impact individual and organizational decision behavior.

Rassule Hadidi is Professor and Head of the Management Information Systems Department at the College of Business and Management, University of Illinois Springfield. His current research areas of interest include online and blended teaching and learning pedagogy and its comparison with face-to-face teaching; MIS curriculum development and quality assessment; cloud computing and its applications for small and medium-sized enterprise; and quality of online information. He is the First Hanson Professional Services Faculty Scholar; served as the President as well as the At-Large Director of the Midwest Association for Information Systems and is the founding Managing Editor of the Journal of the Midwest Association for Information Systems.