ELECTRONIC PUBLISHING OF ACADEMIC JOURNALS IN NIGERIA: A STUDY ON ADOPTION OF WEB CONTENT MANAGEMENT SYSTEM FOR ELECTRONIC EDITORIAL WORKFLOW

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Abstract

Editorial processing of manuscripts begins the procedure of academic journal article publishing. It is essential for achieving the registration and certification functions of journals more efficiently through electronic publishing. The study evaluated the extent of adoption of web content management system with peer review tool for effective journal article editorial processing. The level of adoption of electronic information technology for editorial processing of university-based Nigerian journals was sort from 156 editors using 15-item questionnaire. The results show that electronic editorial processing has not been significantly adopted. Majority of the online journals have web presence for download and offline reading of articles. Integration of manuscript submission, electronic manuscript review and commenting, tracking of article progress in online publishing platforms were limited as email communication among editors and authors dominated. The study, therefore, recommends that journal editors work assiduously towards maximizing the potentials of Web 2.0 technologies by adopting a more integrated electronic editorial processing to improve social cooperation and efficacy of publishing procedure, while cal and university authorities to increase funding and insist on higher publishing standards in Nigeria.

Keywords: Editorial, Workflow, Academic Journal, Electronic Publishing, Nigeria, Universities.

1.0 INTRODUCTION

The editorial workflow of academic journal is key management and communication processes which ensure that manuscripts are collected, reviewed, edited and forwarded for production and distribution. The process begins with screening of submitted manuscripts by editors, followed by peer review of generally acceptable manuscripts and those that pass this filter are then edited so that they meet the standard of the journal (Bridges 2008). The described process may last for a few weeks or a number of months, depending on the efficacy of the publishing group. The adoption of electronic journal management system by publishers to facilitate communication among editors, authors and reviewers have continued to positively affect the quality of journal service delivery. Many journal management applications are obtainable from open source software domains. This makes it easier to transit from print to electronic publishing at insignificant cost. Management of peer-review process and author correspondences are integrated into electronic publishing platforms, making communication among the various groups easier, convenient, cost effective and interactive with higher degree of social cooperation. Electronic information technology - the Internet precisely – enabled these new dimensions to the scholarly communication system. Tekerek and Kyzy (2013) recommend Web Content Management System (WCMS) with Peer Review Tool (PRT) as most appropriate for scholarly publishing system. They described it as system that can facilitate management of workflow in a collaborative environment, from a central interface that allows publishing, editing and modifying of content by non-technical system administrator, who may be supported by a web developer.

There are majorly two ways to approach the editorial process namely automated and non-automated systems. In between them, is a scenario that portrays stagnation in the transition from a non-automated system to the automated one, where partial adoption of electronic information communication process abounds. The study probed editorial processing in Nigerian academic journal publishing with a view to ascertaining the extent to which journal editors have adopted Web Content Management system for automation of editorial publishing procedure.

1.1   Approaches to Journal Editorial Processing

The automated system demands that all communication between the authors, editors and peer-reviewers are conducted seamlessly on an electronic publishing system. A standard electronic publishing system provides for uploading of articles to a database made accessible to editors who may collectively conduct an initial assessment of submissions to determine their suitability for further assessment by peers. Reviewers are documented and culled from database records, based on specialization and availability to conduct reviews. Commenting on articles and reporting to editors by reviewers are digitally executed in the

automated system. Tracking of manuscript's progress may be enabled to carry authors along. Authors are expected to read reviews and comments, effect corrections where needed and re-submit articles by digital upload. Editors assigned to articles, digitally coordinate and moderate communication between authors and reviewers to ensure compliance with standards. The automated system, which admits by registration and gives access by username and password, to stakeholders uses RSS feeds and email notifications to call attention. The advantages of an automated editorial process are enormous, they include time saving, data curation and faster connection with stakeholders. Tekerek and Kyzy (2013) state that the automated system can be of three types, namely offline processing system; online processing system; and a hybrid system, all modeled as WCMS with PRT. The automated system is practically enabled by Web 2.0 technology, which provides for social cooperation on the Internet (Bridges 2008). Scholars generally agree that integrated electronic workflow makes publishing easier, faster, more accessible and visible (Guardado & Borges 2011).

The non-automated process, synonymous with antiquated print model, requires authors to make round trips to journal management office or send surface mails, fax or electronic mail to the editorial office. Reviewers are handed hard copies of articles together with comments and verdict forms for necessary action. The author expects response to submitted manuscript either by surface mail, fax or by scanned copies via e-mail. The correspondences amongst stakeholders in the non-automated system takes longer periods, with less organized record keeping and documentation. The length of time it takes to identify suitable manuscripts and process them to finished publication has been a source of concern to authors and publishers as it often takes two to three years (Buchet, 2004). This time lag is partly attributed to use of antiquated print-based workflow, which drives up journal office expenses and postage cost. Slow editorial process of journal publishing negates the prompt attainment of the registration and certification functions of academic journals.

1.2 Attainment of Academic Journal Functions through Editorial Processing

The registration function of academic journals establishes priority and date stamping of research outcome credited to authors. Delay in publishing outcome of academic research by one author, poses a disadvantage position for the author as peers working on similar subject may establish priority on publication at an earlier date. Certification function pertains to quality stamping, majorly attained through peer review mechanism. Some of the frustrations of journal editors are finding suitable and willing reviewers and the time taken to review manuscripts. The processes leading to carrying out these functions over the years have not changed for many journal editorial offices. The academic journal publishing system, according Teytelman and Stoliartchouk (2015), is 350 years old and

has hardly changed in publishing and communication methods, despite the influence of the Internet, web and mobile technologies which have changed virtually everything, hence making science communication in dire need of innovation. Generally scholars agree that the future of publishing will be predominantly in the electronic realm.

In corroborating the foregoing, Arora, Jaramillo, Nathalia and Pyati (2005) assert that:

> as great deal of scholarly communication continues to move toward electronic formats…those in the academic communication need to take full advantage of the mediums made available for disseminating work that pushes contemporary boundaries and standard frames of knowledge into transformative realms of possibility.

There is therefore need for academic journals to transform by maximizing the potentials of online platforms; web 2.0 technologies; mobile technologies; workflows integration; and semantic technologies to advance scholarly communication. It is obvious that the economic model of print journal has become unsustainable based on rising costs, and bringing down the cost of academic communication will require re-engineering the manuscript-handling process. The recommended re-engineering involves the use of electronic production system which is capable of reducing costs and time of editorial process as well as enhancing professionalism.

2.0 METHOD

The design of the study was basically descriptive. It adopted the survey approach, to reach 156 academic journal editors who are actively publishing in both print and electronic media from Nigerian universities. The sample size of 156 was taken from a sample frame of 256 members enlisted through Internet search on Google and Nigerian universities websites. Only journals that own websites or annexed to university websites, whose address appeared on the sites, were enlisted on the sample frame. The sample size was determined using the formula recommended by Taro Yamane (Yamane, 1967). Non probability sampling approach, using convenience sampling technique was used to enlist members.

Structured questionnaire, in 5-point Likert style was used for the study. Respondents were asked to indicate their level of adoption of electronic editorial publishing innovation by ticking any of (i) Totally adopted, (ii) Often adopted, (iii) Moderately adopted, (iv) Seldom adopted and (v) Not adopted. Validation of the instrument was done by a jury of three experts in Industrial Design from Modibbo Adama University, Yola. Reliability index of 0.97 was obtained from the pre-test of the Instrument on ten potential respondents, using Cronbach Alpha technique.

The questionnaire was administered on the Internet through Google Forms, supported with WhatsApp messaging application. Email addresses and phone numbers of editorial desks were used to reach editors of sampled journals. 156 questionnaires were administered, 130 editors responded and returned 128 duly filled questionnaires, which represents 82% retrieval rate. Descriptive statistics, including mean, percentages, tables and figures derived from computations in Statistical Package for Social Sciences (SPSS) version 20, was used in the analysis.

3.0   RESULTS AND DISCUSSION

The results of the study are presented in the tables below.

Table 1: Demographics of respondents

	%
Editorial job role	
Editor-in-Chief	71.9
Associate Editor	7.8
Managing Editor	20.3
Academic rank	
Professor	74.2
Associate Professor	21.9
Senior Lecturer	3.9
Years in editorial job role	
1-5	26.6
6-10	53.1
11-15	14.8
16-20	3.9
20 and above	1.6

Table 1 presents the demographic information of respondents. The study obtained favourable demographics of subjects as majority of respondents surveyed are editors-in-chief with the highest academic rank of professorship and appreciable number of years of experience in editorial job role. It is assumed that respondents are familiar with electronic publishing innovation and changes taking place in editorial processing. Therefore, would be able to offer honest assessment of their current publishing practice.

Table 2: Mean score of respondents on adoption of electronic editorial workflow for journal management

SN	VARIABLES	TA (5)	OA (2)	MA (2)	SA (2)	NA (1)	MEAN
A.	**Pre-Review and submission Processes**						
1	Online publishing platform (Software) for journal management	89	-	18	-	21	4.06
2	Journal Website	112	10	-	2	4	4.75
3	Submission of articles by upload to Online journal management platform	60	45	-	-	23	3.92
4	Submission of articles by attachment to email to Editor	10	75	30	13	-	3.64
B.	**Review Processes**						
5	Editorial Board assesses articles before conducting peer review	25	68	-	30	5	3.60
6	Invitation of reviewers from existing journal electronic database created over time	12	32	21	-	63	2.45
7	Delivery of soft copy of articles to appointed reviewers	15	25	-	18	70	2.19
8	Use of electronic review tools to comment on article	11	5	8	28	76	1.80
9	Electronic tracking of article's publication progress	12	1	3	32	80	1.69
10	Shorter period of review (Four weeks or below)	17	-	-	44	67	1.87
11	Upload of Reviewers comments and verdict to online platform	15	7	1	33	72	1.90
B.	**Post Review Processes**						
12	Upload and confirmation of final revised copy of article by sector editor on online platform	11	10	-	41	66	1.90
13	Submission of revised copy of publishable article by email to the Editor-in-Chief	62	50	8	3	5	4.26
14	Forwarding of accepted articles to production team by digital upload on online platform	19	13	-	9	87	1.97
15	Forwarding of accepted articles to production team by email from the Editor-in-Chief	67	8	1	7	45	3.35
	Grand mean						**2.89**

Key: TA=Totally Adopted; OA=Often Adopted; MA=Moderately Adopted; SA=Seldom Adopted; NA=Not Adopted

In Table 2, the mean values of 4.06 and 4.75 of response to item 1- the adoption of Online publishing platform and item 2- journal websites respectively show that many journals have adopted an electronic management system for the day to day management of their journal publishing. The responses to questionnaire items 6, 9,10, 11, 12, and 14 with low mean values between 1.69 to 2.45 show that the adopted online platform and websites facility are limited in functions, as such not well integrated to facilitate journal editorial management process.

Questionnaire items 3 and 4, measured the mode of article submission and recorded the mean values of 3.92 and 3.64 respectively. This shows that electronic mode of transmission of manuscript has been significantly adopted. Consequently, impacting positively on the efficacy of sending and receiving manuscripts, where time lag and instances of non delivery of mail are minimized or even completely eliminated. This in-turn is an improvement in the achievement of the registration/acceleration function of journal publishing. Some journals include the dates of receiving manuscript and date of final recording of the definitive versions of the article as a competitive advantage in their publishing system where the time is considerable reduced.

Item 5, which questions the role of editorial board members in assessment of articles prior to review, certifies that consideration to pass an article to review stage is often given, evident in the mean value of 3.64. This process in academic journal publishing is necessary for saving cost by not forwarding and paying for articles that are not publishable for review, which consequently, increases the chances of attending to publishable articles on review queue faster. Advanced manuscript processing platforms provide editors' forum, where preliminary assessment is digitally assigned and evaluation reported by electronic review facility. The low rating of in item 8 (1.8) further confirms that electronic manuscript handling is not significantly adopted in academic journal publishing in Nigerian universities.

Items 6, 7, 8, 10, 11 and 12 with mean values 2.45, 2.19, 1.80, 1.87, 1.90 and 1.90 respectively reveal a non significant adoption of electronic review mechanism that will guarantee accelerated processing of articles for publication. In the prevalent conditions, reviewers make comments on hard copies of articles and return evaluation forms in hard copies. Electronic record of reviewers, with their disciplinary specialization, is not kept in an electronic database, which makes it harder to locate and invite a reviewer over time. The integrated system assures that a new entrant to a journal management team will find it easier to locate and use records.

Responses in item numbers 4, 13 and 15 with mean values of 3.64, 4.26 and 3.35 respectively show that email exchange is the major communication link between authors, reviewers, editors and production. Nonetheless, this is an improvement on the use of surface mail and fax. However, Boing in Campbell et-al (2012) recommends an integrated

workflow based on the deployment of XML (Extended Mark-up Language) as a fundamental tool for electronic content management even beyond editorial procedures. This in turn will quicken the editorial process and lead to the attainment of Hann (2001) acceleration function of journals and Mabe (2012) function of date stamping or priority via registration. Furthermore, the time lag between the identification of suitable manuscript and publishing it, which according to Buchet (2004) often takes two to three years, will be drastically reduced by adopting an integrated system.

Summarily, the Grand mean of 2.89, being lower than 3.0 which accounts for moderate adoption of technology, implies that electronic editorial workflow for academic journal publishing has not been significantly adopted by university-based Nigerian academic journals.

4.0   CONCLUSION

Editorial processing in most journals is stagnated at mere adoption of electronic platform in the form of journal websites for display of articles. Digital editorial content management processes for manuscript handling were not significantly adopted. That is to say that being online for most Nigerian academic journals means that you can download and read contents on the Internet. This implies that much of the editorial processing of manuscript in editorial offices remains non-automated. Authors are still expected to approach editorial desks to pick up papers with hand written comments or receive them via post or email. The prevailing situation limits the ability of Nigerian university-based academic journals to maximise the potentials of Internet technology and integrated communication systems to improve editorial processing, and promptly attain the registration and certification functions of academic journal publishing.

5.0 Recommendations

1. Editors are to ensure that adoption of electronic channel for journal publishing is not limited to acquiring online presence, by mere display of articles on the Internet. Editorial processes of digital manuscript submission, electronic review and commenting and tracking of manuscripts among other integrated workflow techniques should be enabled to maximize the potentials of Web 2.0 technology.

2. There is need for Editors to reduce dependence on personal email communication and entrench a more integrated editorial workflow emanating from database and networked environment, where records are received, stored, retrieved and updated easily using Web Content Management System.

3. Funding and regulatory agencies, such as university authorities, Tertiary Education Trust Fund (TETFund) and others not mentioned, must ensure that funded journal publishers in Nigerian universities upgrade to platforms that meet global best

practice and standard. Nonetheless, more funds should be made available to increase the number of funded titles, reduce article processing charges paid by academics and encourage the proliferation of quality journals.

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