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Website Content Evaluation Instrument for Adoption of Digital Publishing Innovations

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Abstract

Digital publishing is currently a major area of growth in the publishing sector of the global economy and publishers, in realization of this development, are increasingly going digital, and going digital entails adopting at least some of the innovations necessary for profitable business. To understand which innovations that are adopted by pioneer e-publishers to assess them for possible adoption, scholars and publishers, especially those based in developing economies would need reliable website evaluation instruments, but most instruments available for website analysis are not focused on publishing. This gap, therefore, needs to be filled with instruments specifically targeted at publishing sites. This study reports the development procedure for a web evaluation instrument targeting publishing-specific websites. The 34-item instrument measures five aspects of digital publishing: digital book format, e-promotion, e-commerce, e-collaboration and e-socialization. A total of 79 websites were observed and the proposed instrument was used to collect data to examine level or extent of implementation of digital publishing. The results indicate that the instrument is reliable. It is, therefore, concluded that the instrument will be useful to media scholars and publishers.

Introduction

Publishing has witnessed a technological revolution in the last twenty years and this revolution is driven by the widespread use of the Internet and the World Wide Web for information and knowledge sharing. Organizations cutting across all industries and sectors have, thus, begun to find ways of integrating web technologies into existing business models (Schacklett, 2000; Currie, 2000; Aladwani and Palvia, 2002). Some of these organizations can only communicate with their customers and stakeholders through the Internet because they may not be able to pass their non-digital products through the Internet platform. But publishers seem to occupy a unique position in the digital revolution because their books and other publications are amenable to digitization, implying that all their products can be digitized and distributed through the web. Globally, the more aware publishers become of the possible benefits and consequences of the Internet, the

more the challenge to get familiar with the sets of innovations necessary for digital publishing.

The possible benefits offered by the new medium are many and varied. For instance, using digital publishing innovations, publishers can collaborate, network and promote their e-contents as well as print products. They can market their books in digital formats, save cost and cover long distances. Frequently, publishers feel ill-equipped to determine which innovation to adopt due to the rapidity with which publishing technologies are introduced. Thus, it follows that prospective adopters would need valuable information on adoption paths and trends and such data would not be possible without appropriate instruments for the evaluation of adoption extents and patterns.

The problem

Novelty of the web is one of the reasons why there is a scarcity of reliable data collection and measurement instruments in this area. Related to this is the nature of this new medium in which media content is fragmented, mixable and, in many instances, multiple and massive. These characteristics, therefore, rule out the use of instruments developed for collection of data from traditional media such as newspapers and magazines.

Current research on website adoption seems to pay little attention to the development of constructs, instruments, measurement standards and indicators of adoption. Much effort has rather gone into the assessment of various aspects of website quality. Regier (1998) analyzed the home pages of scholarly publishing sites using a non-validated instrument. Though Aladwani and Palvia (2002) developed and validated an instrument in connection with website evaluation, it focused on the measurement of user-perceived web quality. Oyekunle (2009) examined websites of Nigerian firms to infer purposes, benefits and ascertain contents. But this was a general exploration cutting across many industries with characteristics differing from those of publishers. In essence there is need for an instrument specifically designed for publishing sites and for the evaluation of innovation adoption levels and patterns.

Objectives of the Study

The primary objective of this study is to develop an instrument for the measurement of levels, patterns and extents of adoption of digital publishing innovations. The instrument with its proposed scale of measurement will be useful to publishing and information science researchers and publishing professionals interested in adopting digital publishing innovations. The secondary objective of the study is to establish empirically the digital innovation adoption levels and trends among Nigerian publishers and use the data to ascertain the reliability of the developed instrument. This work is designed to fill this gap.

Overview of Website Content Analysis Literature

The existence of a website is a condition for a given publisher to introduce some digital innovations, products and services. Thus, the literature indicates that a website is often one of the first digital publishing innovations adopted by publishing firms in their quest to re-position for

the digital revolution. Since most other publishing innovations are enabled by or implemented through the worldwide web, a website is of special importance to publishers (Avraam, Pomportsis and Tsouvakas, 2008; Ifeduba, 2010).

Digital science and publishing literature is replete with website content analysis guidelines and recommendations revolving around the evaluation of web quality as against web practices and functions of site owners. Websites have been examined as a new medium for organizational communication among fortune 500 companies (Aikat, 2000). Given that fortune 500 organizations cut across all sectors and differ greatly in their characteristics and innovation adoption practices, only a few constructs in the instrument specifically apply to publishing. Regier (1998) focused on scholarly publishing sites with emphasis on usability and site aesthetics. Though the study also analyzed published content, developments in digital publishing since 1998 have been so monumental and rapid that a more encompassing instrument is now necessary. From the perspective of content distribution, publishing websites (newspapers) have been analyzed to investigate the implementation of multiple publishing channels (Avraam, Pomportsis and Tsouvakas, 2008).

The primary focus of web research has been web quality as perceived by users as against the extent of use of websites for core publishing functions web quality dimensions generally analysed in the literature include accuracy, relevancy, security, completeness, ease of use, organization and interactivity (Liu and Arnett, 2000). Sakaguchi, Palvia and Janz's (2000) comparison of business practices on Japanese and American websites focused on site purpose and value, with the value dimension emphasizing quality also. Attempts have also been made to classify web quality attributes into four categories (information, friendliness, responsiveness and reliability) (Wan, 2000). The ease with which users find main page and contact information, navigate the site and a sites counter as well as site colour, wording style, speed and uniqueness of functionality have also been evaluated (Misic and Johnson, 1999).

Seo (2002) analyzed the interface of website design and critical theories, noting the ongoing debate about informational and experiential approaches to interface design. Some works focus specifically on the development of assessment methods for corporate websites (Schubert and Dettling, 2002; Zhang and Von Dran, 2001; Barnes and Vidgen, 2000). Other studies have researched usability issues faced by persons with visual disabilities (Hung, 2001) and persons with other forms of physical challenge (Deng, 2001).

Some studies have been done to explore the use of websites in various economic sectors. Bomba (2005) evaluated the quality of health websites with emphasis on design resources to aid designers and help patients. E-governance was the focus of a study conducted by Henriksson, Yi, Frost and Middleton (2006) and variables investigated include, security, privacy, usability, content, services and citizen participation. Besides, attempts have been made to provide guidance and checklists for the design of e-government websites (Ciolek and Goltz, 2006),

provide direction in terms of web architecture, style and information quality (Rosenfield and Morville, 2002; Benyon, Turner and Turner, 2005 Lazar, 2006).

Thelwell (2003) observed that much attention has been given to web design of individual pages and recommended that attention should be shifted to collections of pages and entire sites. It is noted that not all the web content dimensions examined in the current study have received attention in literature. The variables frequently researched are e-commerce and e-content formats. The others (e-promotion, e-collaboration, and e-socialization) have received passing mentions in studies focusing on other variables.

An aspect of e-commerce (e-payment) was investigated by Ayo (2006) in a country-specific study. Boyd (2002) examined the measurement of customer satisfaction with e-commerce websites emphasizing customers' goals, questions, indicators and measures while Merwe and Bekker (2003) developed a framework and a methodology for evaluating e-commerce websites. These studies did not differentiate between a site's first-time buyers and regular buyers with regard to their usually differing experiences but this gap, according to Hang and Macqueen (2004) was subsequently filled in other studies.

Some studies attempted to define and explain digital format categories in terms of text-only and graphics enhanced contents (Oyekunle, 2000). Aikat, (2000) identified the formats as audio, video, animated and other multimedia contents while Avraam et al (2008) studied publishers' site under twelve content categories including PDF, RSS Feeds, blogs personal digital assistants (P.D.A) DVD/CD-ROM, webcast contents and print. The other constructs, e-promotion, e-collaboration and e-socialization were only mentioned in passing in some studies but not evaluated as dimensions of digital publishing innovations (Oyekunle, 2009).

Website contents, according to Brugger (2010) may also be examined in terms of their written elements, that is, textual elements expressed through writing such as heading or body text. The static image elements such as textual elements expressed through shapes, lines and colours which together form photographic or iconic images may constitute object of analysis. The moving image element – textual elements expressed through shapes, lines and columns which together form a moving image or animation, such as a video or animated banner advertisement-- are identified as components worth studying. Sound elements or textual elements expressed through sound, such as piece of music or voice over have also become integral parts of the web environment Brugger (2010).

Summary of review: The above review leaves us with four conclusions. First, little or no attention has been paid to digital publishing constructs; and where attention was given to them, it was either in some other context or a passing description or a definition (Aikat, 2000; Avraam et al, 2008, Oyekunle, 2009). Second, it makes obvious, the fact that past research in this area lacks the required rigour. Evidence of rigorous research seems to be emerging only in the aspect of website quality (Aladwani and Palvia, 2002). For

instance, it cannot be discerned from the reviewed works (relating to publishing) the process of developing and refining the research instruments used to collect data (Aikat 2000). To a large extent it is difficult to differentiate web design instruments from innovation adoption instruments.

Fourth, in some studies, constructs that should be treated as separate publishing formats (CD, DVD and audio formats, for instance) were lumped together as multimedia features (Avraam et al.). To address these gaps, this study, therefore, embarks on developing and validating an instrument to measure digital publishing innovation adoption level from five perspectives covering vital aspects of publishing.

Methodology

To generate a list of Nigerian publishers online, a preliminary search of the web was done using firm lists provided by the Nigerian Publishers Association, NPA, The Nigerian Book Fair Trust (NBFT) and *Nigeria Galleria*, an online directory. From these, a list of 183 book publishing firms was compiled. The web presence of the 183 firms was investigated using the Google search engine and five others- Alta vista, Times pathfinder, Yahoo, Webcrawler and Metacrawler. A total of 162 were found to be listed in various online directories but only 79 had functional websites as at February, 2014. Four had sites under construction without any useful content. Thus, 79 websites were observed and coded using the instrument developed for this study.

The Measurement Process

The measurement process is presented in three stages – conceptualization, design and normalization in line with the pattern adopted by Aladwani and Palvia's (2002).

Conceptualization: At this stage attempt was made to ensure that valid contents were not left out of the instrument. Initial content categories were, therefore, developed from a list of variables adapted from previous works. Links and e-commerce were adapted from Regier (1998) advertising, promotion, service/product information were adapted from Aikat (2000) Agarwal and Venkatesh (2002). Downloadable content was adapted from Tamplin, Marchwick and Wanca (1997) digital content formats was adapted from Avraam et al (2008) e-collaboration was adapted from Dias and Reinhard (2004). The other categories, socialization and digital publishing hardware, were developed for this study.

All the constructs were modified to fit into the design of this study by either renaming or by making them second order constructs under the following six broad categories: Digital hardware innovations, digital content formats, e-promotion, e-commerce, e-collaboration and socialization. Each of these six content categories was broken down into several indicators on the basis of which a 34- indicator instrument was developed.

Using the Delphi method, three publishing and information science experts were assembled to review the items and change none publishing-specific items and repetitive items. At the end of the reviews, 28 items were retained from the initial 38 items and six additional items were

introduced to control for chance agreement (Krippendorff, 2004).

Table1: Content Categories and matching number of indicators

	Categories	**Indicators**
1	Hardware Innovations	2 indicators
2.	Digital Content Formats	7 Indicators
3.	E-Promotion	4 indicators
4.	E-Commerce	7 indicators
5.	E-Collaboration	6 indicators
6.	E- Networking	8 indicators
	Total	**34 Indicators of adoption**

Having developed these representative categories from a universal pool contained in the literature, the categories were operationally defined to ensure content validity. Definitions are restricted to the five broad categories.

Content Categories

Hardware Innovation: These are innovations such as Espresso print-on- demand printing machines and CD/DVD replicating machines. Indicators are textual, graphic or iconic statement of availability of digital publishing equipments such as print- on- demand machine and CD/DVD replicating machines.

Digital Book Format: This refers to the means or form of using content digitally. Indicators include textual, graphic or iconic statement of availability of formats such as HTML Format, E-PUB Format, PDF Format, CD/DVD Format, E-book Apps or any downloadable Content whether the format is specified or not.

E-Promotion: This refers to marketing communication messages from a publisher to potential buyers. Indicators include presence of advertisements on a site, exhibits of book covers, textual, graphic or iconic statement of availability of promotion video online and listing in online directories.

E-commerce: Internet buying and selling is referred to as e-commerce in this study. Indicators include textual, graphic or iconic statement of availability of e-store, website-facilitated export, e-pricing, e-payment, online customer account, online delivery and website facilitated bank payment for books.

E- Collaboration: Doing things together to achieve publishing objectives. Indicators include textual statements of collaboration and availability of links to partner publishers, schools, libraries, bookshops and websites as well as links for submission and to authors' websites.

E-Networking: This means working together to achieve publishing objectives. Indicators include availability of statements or icons for social networks, forums, blog spots, news update or newsletter, book club, e-library and offline library on the home page.

Unit of Analysis

The home page with its adjoining collection of web pages was analyzed for information content excluding graphic design, aesthetics and navigation elements (Avraam et al, 2008). The data indicate that the coders have perfect agreement over 19 items and minor disagreements over 15 items. The exact unit of analysis was all

publishing content and content distribution-facilitating texts, icons and links on the home page of each publisher's website.

Design and Normalization

Using the 34 items, a website content coding guide was developed as an instrument for data collection in line with the recommendations of Judd, Farrow and Tims (2006). An ordinal three - point scale representing available, (AV) soon to be available (S.A) and not available (N.A) was developed. Reliability coefficient for the instrument was computed twice, first with Holsti's (1969) formula and second with Cronbach's Alpha reliability.

Coding and Inter coder Reliability

Website contents were coded by two independent coders trained for the task in line with the recommendations of Bernard and Ryan (2010). Two coders independently observed and coded the website contents in the last week of March, 2014. The first inter-coder reliability test of the instrument was calculated as follows, using Holsti's formula:

$$R = \frac{2M}{N1_a + N1_b}$$

2M = Total items agreed upon

N1a = coding scores from first coding

N1b = coding score from second coding

Reliability coefficients of the scores were computed for each item and presented in table 2:

Table 2: Summary of Scores for Two Coders with Reliability Coefficients

Innovations	AV	SA	NA	AV	SA	NA	**Reliability coefficient**		
	First coding scores			**Second coding scores**			AV	SA	NA
Hardware Innovations									
Print on Demand machine	0	0	79	0	0	79			
CD/DVD Replicating machines	0	0	79	0	0	79			
Reliability coefficient	**0**	**0**	**158**	**0**	**0**	**158**	**1**	**1**	**1**
Digital Book Contents									

HTML Format	16	3	60	16	3	60			
E-PUB Format	0	3	76	0	3	70			
PDF Format	11	0	68	12	0	66			
CD/DVD Format	5	0	74	5	0	74			
Unspecified Format	8	5	66	8	5	60			
E-book Apps	4	3	72	4	3	72			
Downloadable Content	33	3	0	30	3	0			
Reliability coefficient	**77**	**17**	**416**	**75**	**17**	**402**	**.986**	**1**	**.982**
E-Promotion									
Own advert on site	10	1	68	10	1	68			
Cover exhibits	54	0	25	55	0	24			
Promo video	1	0	78	1	0	78			
Listing in online Directories	121	0	10	119	0	10			
Reliability coefficient	**186**	**1**	**181**	**185**	**1**	**180**	**.997**	**1**	**.997**
E-commerce									
E-store	8	2	68	8	2	69			
Website-facilitated export	4	0	73	4	0	73			
E-Pricing	23	0	56	23	0	56			
E-payment Instrument	15	2	62	18	2	62			
Online Customer	30	9	40	30	9	44			

Account									
Online Delivery	4	3	72	4	3	72			
Website-facilitated bank transaction	8	1	70	8	1	70			
Reliability coefficient	**92**	**17**	**441**	**95**	**17**	**446**	**.983**	**1**	**.994**
E- Collaboration									
Collaboration with other publishers	11	2	66	11	2	66			
Collaboration with Schools	1	2	76	1	2	73			
Collaboration with Libraries	2	0	77	2	0	77			
Collaboration with Bookshops	11	1	67	12	1	60			
Collaboration with Authors	9	1	69	9	1	69			
Digital Rights collaboration	2	0	77	2	0	74			
Reliability coefficient	**36**	**6**	**432**	**37**	**6**	**419**	**.986**	**1**	**.984**
E-Networking									
Social networking	48	1	30	50	1	28			
Forums	5	0	74	5	0	71			
Blogs	10	2	67	10	2	67			
News/Newsletter	11	1	67	12	1	60			
Book Clubs	2	2	75	2	2	75			
E-library	0	0	79	0	0	79			
Offline-library	1	0	75	1	0	78			
Reviews	5	1	73	5	1	70			

Reliability coefficient	**82**	**7**	**540**	**85**	**7**	**528**	**.982**	**1**	**.988**

The reliability coefficients for all the items were above the .80 score recommended (Krippendorf (2004).

Table 3: Reliability coefficient for the six major content categories

	Content category	**Reliability Coefficient**		
		AV	SA	NA
1.	Hardware Innovations	1	1	1
2.	Digital Content formats	.986	1	.982
3.	E-Promotion	. 997	1	.997
4.	E-Commerce	.983	1	.994
5.	E-Collaboration	.986	1	.984
6.	E-Networking	.982	1	.988

*Categorization based on forms and functions of innovations. (1, 2 form; 3-6 functions)

Interpretation: Since high reliability coefficient between alternative measures is a sign that a measure is reliable, the reliability coefficient obtained, ranging from .982 to .997 are reliable and, thus, establish the content validity in support of the level of content validity achieved with the Delphi method.

Since concurrent and predictive validity are generally subsumed in construct validity, it follows that both concurrent and predictive validity are also established for the constructs and indicators (Straub, 1989). On the strength of this high level of reliability, the study proceeded to analyse the data collected with the instrument.

Data Analysis

Table4: Extent of Adoption of Digital Book Formats

S. N	**Book Contents Formats**	**Frequency (with valid percent)**			**Total**
		Available	**Soon to be available**	**Not available**	
1	HTML	16 (20.3%)	3 (3.8%)	60 (75.9%)	100 %
2	E-PUB	0 (0%)	3 (3.8%)	76 (96.2%)	100 %
3	PDF	10 (12.7%)	0 (0%)	69 (87.3%)	100 %
4	CD/DVD	5 (6.3%)	0 (0%)	74 (93.7%)	100 %
5	Unspecified	8 (10%)	5 (6.3%)	66 (83.5%)	100 %
6	E-Book App	4 (5.1%)	3 (3.8%)	71 (91.0%)	100 %
7	Downloa	33 (25.2%	3	43	100

	ds	)	(3.8%)	(71%)	%

Table 4 indicates that 16 or 20.3% of the 79 publishers who adopted website have also implemented the use of HTML as a publishing format whereas none has implemented the use of E-PUB format. Implementation of PDF publishing is second with 10 websites (12.7%) followed by compact disc publishing with five websites (6.3%) and e-book applications with four (5.1%). In some cases it was difficult to ascertain the format of published content, and all such cases occurred on eight websites (10%). About 25% or 33 of the websites had digital contents for downloads. In most cases, the contents were not published by the surveyed publishers. Many were free contents downloaded from other sites and distributed free under creative commons agreement. There were a few indications of intention to implement the adoption of digital book formats. Both HTML and E-PUB recorded such cases (3.8%) each whereas PDF and compact disc recorded no intention to adopt soon on any website. E-book apps and downloads recorded three cases (3.8%) apiece, and there were five indications of intention to implement soon for unspecified formats.

Table5: Extent of adoption of e-promotion

SN	**E-promotion**	**Frequency (with valid percent)**			**Total**
		Available	**Soon to be available**	**Not available**	
1	Own advert on site	10 (12.7%)	1 (1.3%)	68 (86.1)	100 %
2	Book cover exhibits	54 (68.4%)	0 (0%)	25 (31.6%)	100 %
3	Promo/demo video	1 (1.3%)	0 (0%)	78 (98.7%)	100 %
4	Listing	121 (92.4%)	0 (0%)	10 (7.6%)	100 %

Table 5 indicates that all the established websites (100%) are also listed as business names and services in some commercial online directories for promotional purposes. Fifty-four or 68.4% display book covers on their own websites whereas 10 (12.7%) placed some form of advertisement on their sites. Advertisements on sites included written promotional messages, images and moving texts. Promotional video was available on just one site or 1.3% of the sites. In the same vein, only one site (1.3%) had indication of intention to adopt soon. The rest had no indication of the intention to place adverts or promotion of any kind online.

Table6: Extent of adoption of e-commerce

SN	**E-Commerce**	**Frequency (with valid percent)**			**Total**
		Available	**Soon to be available**	**Not available**	

1	E-store	8 (10.3%)	2 (1.5%)	68 (87.20	100 %
2	Web-facilitated Export	4 (5.2%)	0 (0%)	73 (94.8%)	100 %
3	E-pricing	23 (29.1%)	0 (0%)	56 (70.9%)	100 %
4	E-payment instrument	15 (19%)	2 (2.5%)	62 (78.5%)	100 %
5	Online customer account	30 (38%)	9 (11.4%)	40 (50.6%)	100 %
6	Online Delivery	4 (5.1%)	3 (3.8%)	71 (91.0%)	100 %
7	Web-facilitated bank transaction	8 (9.9%)	1(1.2%)	72 (88.9%)	100 %

Seven indicators of e-commerce adoption were used to observe the websites. Table 6 indicates that 38% of the sites had evidence of use of online customer accounts, 23 or 29.1% had prices of their book products displayed in various forms on their sites whereas 15 or 19% had evidence of use of e-payment instruments for transactions. Eight or 10.3% had e-stores and bank account numbers on their sites whereas four or 5.1% indicated that they deliver contents online and leverage on their web facilities to export contents directly.

There were only a few indications of intention to adopt soon and these were in the cases of e-store 2 or 1.5%, e-payment instrument 2 or 1.5%, online customer account, 9 or 11.4%, online delivery 3 or 3.8% and web-facilitated bank transaction, one or 1.2%. In other words, the rate of non-availability ranged very high from 50.6% for customer accounts to 94.8% for web-facilitated export.

Table7: Extent of adoption of e-collaboration

SN	**E-Collaboration**	**Frequency (with valid percent)**			**Total**
		Available	**Soon to be available**	**Not available**	
1	Collaboration with publishers	11 (13.9%)	2 (2.5%)	66 (83.5 %)	100 %
2	Collaboration with schools	1 (1.3%)	2 (2.7%)	72 (96%)	100 %
3	Collaboration with libraries	2 (2.5%)	0 (0%)	77 (97.5 %)	100 %
4	Collaboration with bookshops	11 (13.9%)	1(1.3 %)	66 (84.6 %)	100 %
5	Collaboration with authors	9 (11.4%)	1(1.3 %)	69 (87.3 %)	100 %
6	Digital Rights collaboration	2 (2.5%)	0 (0%)	77 (97.5 %)	100 %

Table 7 indicates that 11 websites or 13.9% indicated that the site owners collaborate with other publishers whether locally or internationally. The same number (11) indicated that they collaborate with bookshops. Whereas 9 or 11.4% indicated that they collaborate with authors. Collaboration with schools had one indication (1.3%) collaboration with libraries 2 or 2.5% and digital rights collaboration 2 or 2.5%.

As observed in connection with other variables, intention to collaborate soon was not indicated for libraries and digital rights. For collaboration with publishers and schools, there were two indications or 2.7% and for bookshop and author collaboration, there was one indication (1.3%) for each. The rate of non-adoption ranged from 66 or 83.5% for inter-publisher collaboration to 77 or 97.5% for library and digital rights collaboration. The highest extent of adoption is 14.1% for publisher-bookshop collaboration.

Table 8: Extent of adoption of e-socialisation

S/N	**E-Socialisation Indicator**	**Frequency with valid percent**		
		Available	**Soon available**	**Not available**
1	Social networking	48 (60.8%)	1 (1.3%)	30 (38%)
2	Forums	5 (6.3%)	0 (0%)	74 (93.7%)
3	Blogs	10 (12.7%)	2 (2.5%)	67 (84.8%)
4	News/ Newsletter	11 (13.9%)	1 (1.3%)	67 (84.8%)
5	Book publishing	2 (2.5%)	2 (2.5%)	75(94.9 %)
6	E- library	0 (0%)	0 (0%)	79 (100%)
7	Offline library	1 (1.3%)	2 (0%)	75 (98.7%)
8	Reviews	5 (6.3%)	1 (1.3%)	73 (92.4%)

Table 8 indicates that 48 or 60.8% of the publishing websites have evidence of social networking which is categorized in this study as a socialization platform encompassing forums, blogs, news services, free e-library, free offline library, reviews and book clubs. Ten or 12.7% of the sites had blogs, 11 or 13.9% had free news services, 5 or 6.3% had forums on reviews, two (2.5%) had book clubs and one (1.3%) indicated that the publisher has an offline library service.

Indications of intention to adopt e-socialization innovations were low ranging from 0% for e-library and forums to 2 or 2.5% for book clubs, offline library and blogs. The risk (social networking, news services and reviews had one indication (1.3%) each. The rate of non-availability, again, was much higher than availability ranging from 30 or 38% for social networking to 79 or 100% for e-library. Forums were not available in 74 or 93.7% of the sites whereas blogs and news services were not available in 67 or 84.7% of the sites. Book clubs and offline libraries were not indicated on 75 or

94.9% of the sites and reviews were not indicated on 73 or 92.4 of the sites.

Extents of adoption recorded indicate that e-promotion innovations are the most extensively adopted by the publishers, followed by e-commerce innovations and e-socialization innovations. The least case of adoption was recorded under E-PUB format and e-library with zero scores. Indications of intention to adopt were generally low across the six variables investigated.

Implications and Conclusions

Previous publishing website analysis research focused on general descriptions that shed light on the characteristics of the medium, but the website content evaluation instrument developed in this study provides reasonable insight into the measurement of digital publishing innovation adoption levels. Data collected with the instrument indicated clearly the extent or level of adoption of the innovations under study: digital content formats, e-promotion, e-commerce, e-collaboration and e-socialization. This has some far reaching implications for publishing research. For instance, it presents a clear departure from the majority of works focusing on the evaluation of website as an object of study or as a medium of mass communication. It also presents a departure from the plethora of works dwelling on web quality and points the way to industry-specific instruments without which detailed data collection might be difficult to attain.

The proposed 34 indicators cover all the major areas of publishing---manuscript processing and production, promotion/marketing, sales and distribution. Though they basically indicate current extent of adoption, they also provide for future orientation, a quality which is important in the evaluation of rapidly evolving new media technologies.

The instrument is easy to modify and adapt for use in evaluating newspaper and magazine websites as well as other organizational websites in search of innovation adoption levels. As more innovations appear on websites in future, the instrument may remain useful but inadequate to accommodate new innovations without modification.

In terms of implications on the practice of book publishing, an empirically validated instrument provides a tool for assessing the level, type and variety of digital publishing innovations adopted by competitors, collaborators and partners. Data collected with the instrument may furnish publishers with valuable information needed to compete in today's turbulent publishing environment.

Recommendations

Further studies may be necessary to develop instruments for other specific aspects of publishing. For instance, different instruments for the content analysis of written elements of a website, static image elements, moving image elements and sound image elements will provide deeper insight to our understanding of publishing websites. In future, instruments may also be needed for different types of publishing sites such as university presses, open access publishing sites and other non-commercial sites. Furthermore, any of the five dimensions of digital publishing innovation examined in this study could be

investigated alone depending on the corporate needs of a publisher.

Traditionally, the development and validation of scales requires replications as well as re-tests. Different re-test possibilities include a multi-coder evaluation involving more than two coders. Though content validity and reliability for this work is confirmed, other types of reliability tests might produce useful, if not different, outcomes.

References

Agarwal, R and Venkatesh, V. (2002). Assessing a firm's web presence: A heuristic Evaluation procedure for the measurement of usability. *Information systems Research* Vol. 13 No2 P. 168-186

Aikat, D. (2000). A new Medium for organizational communication: Analyzing web content characteristics of fortune 500 companies. *The Electronic Journal of communication* Vol 10 Number 1 and 2 @http://www.cios.org/Ejepublic/010/1/010111.html

Aladwani, A.M and Palvia, P.C. (2002). Developing and validating an instrument for measuring user-perceived web quality. *Information and management* 39 P.467-476

Avraam, E; Pomportsis, A & S Tsouvakas, G. (2008). Implementattion of alternative publishing channels by Greek newspapers. *First Monday* Vol. 13 Number 4-7@http://firstmonday.org/article/view/2072/1954

Ayo, C.K (2006) "The Prospects of E-commerce implementation in Nigeria" *Journal of Internet Banking and commerce* vol. 11. no 3 at www.everyday.com

Barches, S & Vidgen, R. (2002). An integrative approach to the assessment of e-commerce quality. *Journal of Electronic commerce Research.* 3(3), 14 -127

Barhes, A & Vidgen, R (2004) Interactive e-government. Evaluating the websites of Uk. Inland Revenue. *Journal of Electronic Commerce in Organisations* 2 (1), 42-46

Benyon, D; Turner, P & Turners, S (2005). *Designing interactive systems, people, activities, contexts, technologies.* Harlow, U.K Addison-Wiley

Bernard,H.R and Ryan, G.W. (2010). *Analyzing qualitative data: Systematic approaches*. Thousand raks, C.A: Sage Publications.

Bomba, D. (2005). Evaluating the Quality of Health websites: Developing a validation method and Rating instrument. In *Proceedings of the 38th Annual Hawaii systems science*, 3-6 January P. 139-148. Available at research-pubs@uow.edu.au.

Boyd, A (2002). The goals, questions, indicators, measures (GQIM) approach to the measurement of customer satisfaction with e-commerce websites. *Aslib Proceedings* Vol. 54 No 3 P. 177-187

Brügger,N (2010) Website Analysis: Elements of a conceptual architecture. Aarhus: The Centre for Internet Research

Ciolek, T.M. Goltz, I.M (2006). Information quality www.vituallibrary. Retrieved February.2006@http://www.ciolek.com/wwwvl-infoquality.html.

Cukier, W & Middleton, C (2003). Evaluating the web presence of voluntary sector organizations: An Assessment of Canadian websites. *IT & Society* Vol. 1 issue 3 P. 102-130 retrieved from http://www.ITandsociety.org

Currie, W.L (2000). The Global Information Society. Chichester: W.K. Wiley

Dias, I.M & Reinhard, N. (2004). Methodology for web presence strategy formulation: A case study. Paper presented at 17th Bled e-commerce conference e-global June 21-23, Bled, Slovenia Brazil

Eo, J.J (2002). Reading the look and feel: interface design and critical theories retrieved from http://ic.media.nut.edu/people/jseo/courses/cms800/final.paper.html

Frelon, D.G (2010). Recal: Intercoder Reliability calculations as a web service. *International Journal of internet science* 5 (1) P. 20-33 @Ejis.NET

Henriksson, A; Yi, Y; Frost, B and Middleton, M (2006). Evaluation instrument for e-government websites in proceedings of internet Research 7.0 internet convergencies, Brisbane, Queenland; Australia accused@http://eprints.gut.edu.au.

Holsti, O.R (1969). *Content analysis for the social sciences and humanities.* Reading M.A Addison Wiley

Hung, W & McQueen, R.J (2004). Developing an Evaluation instrument for e-commerce websites from the first-time Buyer's Viewpoint. *Electronic Journal of information systems Evaluation* Vol. 7 issue 1 P. 31-42

Hung. E (2001). Lind and low vision users@http://uimi.otal.umd.edu/uupractice/vision

Judd, V.C, Farrow, L.I and Tims, B.J. (2006). Evaluating public website information. A process and an instrument. *Reference services review* Vol. 34 no 1

Kane, C.M (2008). See you on myspace: self presentation in a social network website. Unpublished master's Thesis. Cleveland state University, Clevand Ohio@http://academic.usuohio.edu/neuendorf-ka/content/coding.html

Krippedorff, K (2004). Reliability in content analysis: some common misconceptions and recommendations. *Human communication Research* 30, (3) P. 411-433

Lazar, J (2006). *Web Usability: A user-centred design approach*. Boston, M.A Pearson Addison Wesley

Luic, C and Arnett, K.P. (2000). Exploring the factors associated with website success in the context of electronic commerce. *Information and Management* 38 (1) P.23-33

Marisco, M.D and Levialdi, S (2004). Evaluating websites: exploiting user's expectations. *International Journal of Human-Computer studies.* (60) P. 381-416

Merwe, R & Bekler, J (2003).A framework and methodology for evaluating e-commerce websites. *Internet Research: Electronic Networking Applications and Policy* Vol. 13 No 5 P. 330-341

Misic, M.M, Johnson, K (1999). Benchmarking:A tool for website evaluation and improvement. *Internet Research* 9 (5) P. 383-392.

Oyekunle, R.A (2009). Differences in websites: The current state of Nigerian Firms. A paper presented at the second international conference on mobile e-services, Ladoke Akintola University of Technology, Ogbomosho, Nigeria

Rosenfeld, L & Morville, P (2002). Information architecture for the worldwide web. Cambridge.O'Reilly

Sakaguchi, T, Palvia, P.C and Janz, B.D (2000). Business practices on the world wide web: a comparison of Japanese and U.S websites…..

Schacklett, M. (2000). Nine ways to create a retail environment on your website. *Credit Union magazine* P.12-13

Straub, D.W (1989). Validating Instruments in MIS Research. *MIS Quarterly*, June P. 147-169

Tamplin, E; Marchwick, J and Wanca, C (1997). Diffusion of innovation: The fortune 100 and the internet. Available at http://www.mimidspring.com/etamplin/research

Thewall, M.(2003). A Layered approach for investigating the topological structure of communities in the web. *Journal of documentation* Vol. 59 No 4 P. 410-429

tsikriktsis, N, Lanzolla, G and Frohlich, M (2004). Adoption of e-processes by service firms: An empirical study of antecedents. *Production and Operations Management*. Vol. 13 No 3 P. 216-229

Wang, C.L & Ahmed, P.K (2004). The development and validation of the organizational innovativeness construct using confirmatory factor analysis. *European Journal Of Innovation Management*, 7, (4) P. 303-313

Appendix 1

The Instrument with Content categories and items indicating adoption

Innovations	Indicators of Adoption	3	2	1

		AV	SA	NA
Hardware Innovations				
Print on Demand machine	Textual statement of availability			
CD/DVD Replicating machines	Textual or iconic statement of availability			
Digital Book Content				
HTML Format	Availability of the relevant icon (e.g HTML icon) against displayed titles			
E-PUB Format	Availability of the relevant icon (e.g EPUB icon) against displayed titles			
PDF Format	Availability of the relevant icon (e.g PDF icon) against displayed titles			
CD/DVD Format	Availability of the relevant graphics against displayed titles			
Unspecified Format	Textual statement of availability of digital content without specified format			
E-book Apps	Textual statement of availability of Apps eg Android, Kindle edition.			
Number of titles on Apps				
Downloadable Content	Textual or iconic statement of availability eg Downloads, Open Access, E-resources			
E-Promotion				
Own advert on site	Presence of adverts on site			
Cover exhibits	Presence of book cover exhibits			
Promo video	Textual or graphic statement of availability			

Listing in online Directories	Textual statement of availability from search engines			
E-commerce				
E-store	Availability of e-store button on home page			
Website-facilitated export	Availability of foreign currency signs against any format			
E-Pricing	Textual indication of price for any of the formats			
E-payment	Textual or iconic presence of payment instruments			
Online Customer Account	Presence of online ordering instructions, Shopping cart and Account opening instructions			
Online Delivery	Textual indication of online delivery options			
Website-facilitated bank transaction	Availability of bank account numbers for book transaction			
E- Collaboration				
Collaboration with other publishers	Textual statement of collaboration/ availability of links to partner publisher			
Collaboration with Schools	Textual statement of collaboration/ availability of links to partner schools			
Collaboration with Libraries	Textual statement of collaboration/ availability of links to or from partner libraries eg open library			
Collaboration with Bookshops	Textual statement of collaboration/ availability of links to partner bookshops			
Collaboration with Authors	Textual statement of collaboration/ availability of links to partner authors			
Digital Rights collaboration	Textual statement of collaboration/ availability of links to partner's site			
E-Socialization				
Social	Availability of social network icons			

networking				
Forums	Availability of forum/community button on home page			
Blogging	Availability of blog button on home page			
News/Newsletter	Availability of News/Newsletter or press release button on home page			
Book Clubbing	Availability of book club button on home page			
E-library	Availability of e-library button on home page			
Offline-library	Availability of offline-library button on home page			