APPLICATION OF ELECTRONIC SCHOLARLY PUBLISHING IN DIGITAL AGE: PROSPECTS AND CHALLENGES IN NIGERIAN UNIVERSITIES

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Abstract

The significant technological infrastructure which are now beginning to offer services to prestigious large and smaller publishers, including some of the more trade-minded university presses on online and electronic means. Scholarship Online has demonstrated to the university press community that a large aggregation of quality monograph content, optimized for online scholarly use, generates strong usage and holds sufficient appeal to librarians to support a profitable business. Therefore, this paper highlighted general introduction f electronic scholarly publishing, from digital books to digital publishing, potential benefit of electronic scholarly publishing, e-book/electronic publishing as the future of scholarly communications system, open access and electronic scholarly commutation in Nigeria, the role of library in electronic scholarly publishing, archiving and preserving of electronic scholarly publishing, important of electronic scholarly publishing, and some of the challenges of electronic scholarly publishing in Nigeria. Recommendations for functional adoption of electronic scholarly publishing in Nigeria have also been given.

Keywords: Application, Electronic, Scholarly Publishing, Digital Age, Prospects Challenges, Universities

1.0 Introduction

Scholarly publishing is characterized by a process of selection, editing, printing and distribution of an author's content by an intermediary (preferably one with some name recognition). Informal scholarly publication, by comparison, describes the dissemination of content (sometimes called "gray literature") that generally has not passed through these processes, such as working papers, lecture notes, student newsletters, etc. In the past decade, the range and importance of the latter has been dramatically expanded by

information technology, as scholars increasingly turn to preprint servers, blogs, listservs, and institutional repositories, to share their work, ideas, data, opinions, and critiques. These forms of informal publication have become pervasive in the university and college environment. As scholars increasingly rely on these channels to share and find information, the boundaries between formal and informal publication will blur. These changes in the behavior of scholars will require changes in the approaches universities take to all kinds of publishing (Brown, M. et al., 2007).

He further added that universities have traditionally participated in the formal publication of their intellectual output through a network of presses, but most publishing of this output has long taken place outside the university sector, especially in the sciences. For a variety of reasons university presses have become less integrated with the core activities and missions of their home campuses over the years — a drift that threatens to widen as information technology transforms the landscape of scholarly publishing. The responsibility for disseminating digital scholarship is migrating instead in two directions – towards large (primarily commercial) publishing platforms and towards informal channels operated by other entities on campus, mostly libraries, academic computing centers, academic departments, and cross-institutional research centers. While these entities all play a critical role in scholarly communications, university presses have developed publishing skills and experience over many years that are also very valuable in this new context and that would be costly, if not impossible, to replicate. We hope to highlight those skills in this report and suggest how they can be adapted to the digital age. Publishing in the future will look very different than it has looked in the past. Consumption patterns have already changed dramatically, as many scholars have increasingly begun to rely on electronic resources to get information that is useful to their research and teaching, transformation on the creation and scholars' work.

Publishers have made progress putting their legacy content online, especially with journals. He believe the next stage will be the creation of new formats made possible by digital technologies, ultimately allowing scholars to work in deeply integrated electronic research and publishing environments that will enable real-time dissemination, collaboration, dynamically-updated content, and usage of new media. Alongside these changes in content creation and publication, alternative distribution models (institutional repositories, pre-print servers, open access journals) have also arisen with the aim to broaden access, reduce costs, and enable open sharing of content. Different economic models will be appropriate for different types of content and different audiences. It seems critical to us that there continue to be a diverse marketplace for publishing a range of content, from fee-based to open access, from peer reviewed to self published, from single author to

collaboratively created, from simple text to rich media. This marketplace should involve commercial and not-for-profit entities, and should include collaborations among libraries, presses, and academic computing centers (Brown, M. et al., 2007).

2.0 From digital books to digital publishing

Fusaro, (2012). Found in his research 71 % of respondents agree or agree strongly that open access can coexist with the traditional scientific publication system. Emergence of new publishing models in the electronic environment Most presses already have harnessed digital technologies for back-end production, enabling shorter print runs, better inventory control, and print-on-demand. These new print production processes support changes in publishing – from cost reduction to better availability – but do not alter the nature of the products themselves. Digital technology, however, has also fostered changes in the way scholarship is created, disseminated, and consumed, and these advances are beginning to have a transformational impact on publishing models (Brown, M. et al., 2007). Therefore, first stage of this transformation is the translation of traditional print products into electronic formats– is well underway, led by journal publishers who have developed hybrid print/electronic publishing models. Most readers now prefer to access journal literature online, and as comfort levels grow with scholarship distributed electronically, demand is increasing for other content types to follow the same curve.

The second stage of the transformation is the creation of new product types enabled by digital technologies has just begun. New publishing models are emerging in response to demand for real-time dissemination, dynamic material, more collaborative research and authoring environments, and usage of rich media. For example, MIT's Open Courseware (OCW) represents such an innovation where digital technologies enabled MIT to publish course materials for global distribution in a way that never would have been contemplated in the print era. Scholarly publishing of the future will need to support content created in new and complex ways, including everything from regularly updated reference material, multimedia projects, and large interlinked centers that add new works regularly, to resources with user generated content. Alongside these profound changes in content creation and publication, alternative distribution models have also arisen to broaden access, reduce costs, and enable open sharing of content. These alternatives – from pre-print and working paper services to library institutional repositories, open access journals, and author self-publishing and self-archiving tools – often compete with traditional publishing functions and have the potential to disrupt the selecting, credentialing, and economic models on which scholarly publishers rely.

Digital platforms can also add videos, sound, music and various degrees of interactivity and collaboration to the reading experience. These forms of publishing go by various names (Avignon Forum, 2011).

1) ***Hybrid:*** The digital era opens up books and written content to cross-breeding with other media. For instance, nonlinear reading becomes a multimedia experience. The "book," for example, adds a set of high-definition visuals to the reading experience. Scroll Motion and Sesame Street created children's e-books that enhanced the text with audio tracks (Elmo's ABC Book). Random House has also developed applications that mix text, music and narration.
2) ***Nonlinear:*** In new press services, websites such as Memorandum compile professional articles and political blogs, selected by an algorithm from among hundreds of sites from all ends of the opinion spectrum. The juxtaposition of such diverse content and sources offers a new reading experience, but also raises questions about the selection criteria and quality of the information.
3) ***Interactive:*** The reader's participation in book publishing may seem incongruous in such a supply-driven industry. After all, the creative thinking usually stems from the author. Yet some experiments suggest that new formats may succeed in attracting younger, creation-hungry generations to the world of literature. In The Amanda Project, the reader is actively involved in writing a collaborative script. Given a starting point, the Internet user is prompted to continue the tale, and the best contributions are then published in paper format, digital publishing has created a feedback mechanism, whereby authors can communicate directly with their audience, and readers can communicate with one another. Authonomy.com, operated by HarperCollins, helps hopeful authors create their own webpage and upload their manuscript for all visitors to see. The readers can then vote and comment on a manuscript that, if successful, is then published in paper format. Amazon recently acquired Shelfari.com, which brings together a community of readers who share their favourite books through a virtual library—an initiative comparable to publisher Hachette Livre's website MyBoox. (Avignon Forum, 2011)

3.0 Potential Benefit of Electronic Scholarly Publishing

Publishers are now successfully adding value online, these include the engineering search engine GlobalSpec and integrated technology media publisher TechTarget. GlobalSpec offers vertical search for the engineering, industrial and technical communities, and its website aggregates and distributes data and content. It has extensive online catalogues of products and parts, as well as services. Engineering News and over 60 different e-

newsletters provide up-to-date industry information and news about recent developments. GlobalSpec also maintains an extensive library of searchable technical articles that are available for free to registered users. CR4, its online community, offers news and discussion groups focused on technical topics, while 'Dice' is the career and job postings portion of GlobalSpec. The site offers job listings, career advice, resume writing tips, and other specific industry-related information (Fenez, and Van der Donk, 2010)**.** He further, noted that Media publisher TechTarget provides detailed content in the form of training guides, industry white papers, webinars, news and newsletters. Content is grouped by narrowly defined sub-sectors, enabling advertisers to more effectively reach the professionals they want to target.

TechTarget also has several websites dedicated to vertical B2B search, providing targeted access to archived magazine and news articles, learning guides, white papers and a variety of multimedia, all helping to provide in-depth industry information. Site visitors can also request product demos and selection assistance services that function as lead generation opportunities for market alliances. Some examples of successful alliances in this area include a vacancy site for health professionals and IT executives – an alliance between a Wolters Kluwer business and Computer Profile, geared to reaching decision-makers within companies. Another website, set up by McGraw-Hill Construction, connects people, projects and products across the design and construction industries. It pulls up-to-date industry news from multiple sources, provides data on potential business opportunities searchable by geography, building type and project type and includes industry trends, career pages, feature articles, blogs and discussion forums (Fenez, and Van der Donk, 2010). They are to some benefit which electronic scholarly publishing derives to these includes:

a) Costs are shifting from a variable cost model to a fixed cost model
b) Strengthening customer relationships
c) Adopting a flexible, collaborative mindset
d) Enabling content to be monetised globally and online
e) Attracting and retaining the right talent

4.0 E-Book/Electronic publishing as the Future of Scholarly Communications System

According to Warren, (2009). The delicate balance between authors, publishers, librarians, and readers has shifted, and will continue to evolve with new technologies. While anyone scholar can publish online for free or fee-base publishing, the publisher's role if Publishers are to survive at all remains to develop, nurture, and legitimize talent. But the platform will increasingly be digital. The journal article references as the second most important factor to discoverability (after Table of Contents Alerts),

highlighting the critical importance of links (Inger and Garner, 2008). As more books become scanned and digitized, links between digital documents will strengthen their usage and legitimization, making it ever easier to follow the breadcrumbs of knowledge. The proposed settlement between Google, the Authors' Guild, and the Association of American Publishers may accelerate the links between and among books and other content, while potentially offering new revenue streams to authors and publishers.

E-books offer opportunities that are impractical for traditional print books. The DVD/ebook of I Want You!, for example, presents a treasure trove of materials for specialists, researchers, and students of military history, public administration, and government affairs to draw upon—the documents would run into thousands of pages were they to be printed. As Spector (2007) wrote, "the most important aspect of the book is the accompanying DVD containing hundreds of important official records and analytical studies relating to the volunteer Force from its inception through the Clint on and into the Bush years" Recently, Penguin Classics began to release a series of enhanced e-book classics, beginning with Pride and Prejudice. The enhanced e-book version—priced the same as the standard print edition—includes afilmography, period book reviews, recipes, and black-and-white illustrations from period magazines, a veritable must-have for Austenophiles (Milliot, 2008). E-books, of course, also present considerable challenges. The DVD/e-book of I Want You! Was not economically viable due to extremely high Development costs, but was done as part of RAND's tradition of self-initiated research. Crucially, in this case, RAND does not depend on its publishing program for its overall survival or profitability, although the publishing program does aim to recover printing, marketing, and distribution costs. A mainstream publisher would have balked at such a daunting project. On the other hand, e-books can allow a publisher to include many more illustrations and extras than a physical book, as well as audio and video files. Rights for this enhanced e-book material can also present as significan thurdleunless the extra material is already in the public domain or owned by the author or publisher. Thus, enhanced e-books offer promise where the author has an array of extra materials (early drafts, journals, photos), the publisher controls rights to an extensive, related backlist or other complimentary material, or where material can beautilized from public domain or in Creative Commons source (Warren, 2009).

Therefore, every university that produces research should have a publishing strategy, but that does not mean that it should have a "press". Much of the content produced in the future will be disseminated electronically, and a new constellation of skills (including some that currently reside in presses, as well as those from libraries and IT groups) will be required to do this most effectively, digital environment certain activities

and assets (e.g. technology development, marketing) will be consolidated onto large scale platforms. These new digital publishing activities are central to the research and teaching missions of universities, and it therefore seems critically important that the university community be able to influence strongly the development of these platforms to insure that they support long held university values, rather than allowing them to be driven primarily by commercial incentives. And third, as the environment evolves, university presses will no doubt change. Some universities will encourage and enable their presses to grow and take more of a leadership role. Other institutions may decide to open new presses. Others may close their presses or let their presses evolve into more specialized enterprises with a focus on editorial and credentialing services while depending on others for core infrastructure and marketing services. What seems clear is that to succeed presses are going to need to be a more important partner in helping their host institutions to fulfill their research and teaching mission (Brown, M. et al., 2007). Forecasts in the late1990s projected e-books would soon take over publishing, especially in academic texts, with sales of $2 billion to $3.5 billion by 2005 (Crawford, 2006). eBooks allow a user to find information much more quickly—you could spend years looking for a single name in a physical library, but seconds searching across that same library in electronic form. Additionally the physical book is an 'all or nothing' Proposition (you have to buy it all), while the eBook can be broken down much more readily to chapter level or lower, for sale in chunks or pieces. (Woodburn, 2008). In the future, e-books may evolve into a wholly new form that we cannot fully envision today. This future will arrive as publishers and authors add enhancements and interactivity, embrace new business models, and explore new methods of collaboration, and as readers engage with these new forms (Warren, 2009). Brown forecasts four attribute for the future of electronic scholarly publishing:

a) Everything must be electronic
b) Scholars will rely on deeply integrated electronic research/publishing environment
c) Multimedia and multi-format delivery will become increasingly important
d) New forms of content will enable new economic models

5.0 Open Access and Electronic Scholarly Commutation in Nigeria

The open access movement emerged in response to increasing legal and economic barriers by commercial scholarly publishers which made access to research output and information difficult especially to people in developing countries of the world. Thus the movement seeks to promote free and open access to research output devoid of any permission barriers and

unnecessary legal restraints. The open access movement therefore seeks to use the internet - a product of the 'networked information economy' to provide free access to research and scholarly output to people irrespective of their physical or geographical location, or their social and economic means. (Cetto, 2001).

According to Christian (2011) the emergence of Open Access Initiatives as well as information and communication technologies provides a veritable medium to address the problem of poor visibility of academic research information emanating from developing countries like Nigeria. The shift from the conventional print publication to the use of digital sources and internet media have provided academic and research institutions in Nigeria with an opportunity to make their grey literature and research output accessible to the outside world. However, it may be surprising to observe that academic and research institutions in the country are yet to take advantage of the benefits provided by open access institutional repositories. It is now obvious to the academic and scholarly community that the traditional model of scholarly communication via subscription-based journals serves to hinder rather than expand access to research output. In the light of emerging trends in digital scholarly communication, open access institutional repositories play an important role in the preservation and dissemination of institutional research outputs which in turn becomes a constituent part of a global research output (Ng'etich, 2004). In Nigeria, an international workshop was held in Ahmadu Bello University Zaria, in 2008 on open access repositories. There-in, Nigerian universities and research libraries were encouraged to organize their scholarly output into institutional repositories in order to make their research works available both nationally and internationally through open access (Bozimo, 2008), Supporting the call for open access through institutional repositories, Okojie (2008) endorsed open access for all journals, dissertations and Conference proceedings in the library and information science (L.I.S.) sector in Nigeria. She promised to encourage members to archive their pre – prints and post prints in open access. She believed that the paradigm would make Nigerian researchers and librarians, gain leverage, leapfrog and become part of an international community of researchers (Okojie, 2008).

According to Chan and Costa (2005) the benefits of open access particularly open access repositories in Nigerian Universities will include: improved access to institutional research output; improved citation and research impact; and cost effectiveness in information dissemination on the part of the institutions. The increased research impact of open access articles due to citations has also been acknowledged by many scholars (Harnad, 2003). In the current system of scholarly communication, developing countries may be considered to have low research impact due to limited

visibility of research output from such countries. Despite the promising potential of open access to improve scholarly communication in developing countries, the new form of scholarly communication is little exploited in such countries when compared to developed countries (Durrant, 2004). The development of open access institutional repositories requires fast and reliable internet connection as well as deployment of adequate information and communication technology infrastructure. The major point of internet access to students and staff at Nigerian universities is through internet cafés (Christian, 2011). A study of internet usage in Nigerian universities shows that 45.2 percent of the respondents access the internet through internet cafés (Jagboro, 2003). Chan and Costa (2005) noted that institutional repositories administered by universities or research institutes for members of their community, are the fastest growing form of open access archives. Institutional repository has emerged to revolutionize the methods of preservation as well as communication of research outputs in academic and research institutions.

6.0 The role of Library in electronic Scholarly publishing

One of the most successful early markets for ebooks has been the library, particularly among academic libraries. ebrary's 2007Global eBook Survey, A survey of librarians and information professionals at approximately 2,600 institutions (of which 21 percent responded to the survey), found that 85 percent ownor subscribe to e-books and 45 percent have access to more than 10,000 e-books. Yet the survey of librarians found a number of inhibitors to wider e-book usage, foremost among them "lack of awareness," followed closely by "difficult to read," "difficult-to-use platforms," and "lack of training"(ebrary, 2008). Librarians and presses each have a role to play in electronic publishing. Press directors and librarians must work together to create the intellectual products of the future which increasingly will be created and distributed in electronic media. Their efforts should be closely and intelligently connected to their campuses' academic programs and priorities in order to ensure their relevancy and institutional commitment. All two parties should work together to create a shared electronic publishing infrastructure that will save costs, build scale, leverage expertise, promote innovation, and integrate the productive resources of universities to maintain a robust, diverse and collaborative university publishing environment. Clearly this is too ambitious an agenda for institutions to pursue individually. Creating these sorts of platforms requires scale and investment of substantial capital, and commercial entities are far ahead of the university sector in investing the necessary level of resources. Each institution must determine what it can do locally, and if and when it should combine forces with other institutions. The study will draw the

community's interest in a possible collective investment in a technology platform to support innovation in university-based, mission-driven publishing. This infrastructure could serve as the foundation for new forms of university-centered academic publishing in the digital age (Brown, M. et al., 2007).

7.0 Archiving and preserving of Electronic Scholarly Publishing

Hodge, (2002) ascertain that Preservation and permanent access begin outside the purview of the archive with the producer or the creator of the electronic resource. This is where long-term archiving and preservation must begin. Information that is born digital may be lost if the producer is unaware of the importance of preservation. Practices used when electronic information is produced will impact the ease with which the information can be digitally archived and preserved. Several key practices are emerging involving the producers of electronic information. First, the archiving and preservation process is made more efficient when attention is paid to issues of consistency, format, standardization and metadata description before the material is considered for archiving. By limiting the format and layout of certain types of resources, archiving is made easier. This is, of course, easier for a small institution or a single company to enforce than for a national archive or library. In the latter cases, they are faced with a wide variety of formats that must be ingested, managed and preserved. In the case of more formally published materials, such as electronic journals, efforts are underway to determine standards that will facilitate archiving, long-term preservation and permanent access. The Andrew J. Mellon Foundation has funded a study of the electronic journal mark-up practices of several publishers. The study concluded that a single SGML document type definition (DTD) or XML schema can be developed to support the archiving of electronic journals from different subject disciplines and from different publishers with some loss of special features (Inera, Inc. 2001). Such standardization is considered key to efficient archiving and preservation of electronic journals by third-party vendors. The DTD developed by PubMed Central for deposit of biomedical journals is being considered as a generalizable model for all journals.

The Archiving and Interchange DTD Suite is based on an analysis of all the major DTDs that were being used for journal literature, regardless of the discipline. The suite is a set of XML building blocks or modules from which any number of DTDs can be created for a variety of purposes including archiving. Using the Suite, NLM created a Journal Archiving and Interchange DTD as the foundation for the PubMed Central archive. In addition, a more restrictive Journal Publishing DTD has been released which can be used by a journal to mark up its content in XML for submission to

PubMed Central. Several publishers and projects, such as JSTOR, the Public Library of Science, High Wire Press and CSIRO, are analyzing or planning to use the Journal Publishing DTD (Beck, 2003). In the case of less formally published material such as web sites, the creator may be involved in assessing the long-term value of the information. In lieu of other assessment factors, the creator's estimate of the long-term value of the information may be a good indication of the value that will be placed on it by members of its designated community or audience in the future. The Preservation Office at the National Library of Medicine has implemented a "permanence rating system" (Byrnes 2000). The rating is based on three factors: integrity, persistent location, and constancy of content. These factors have been combined into a scheme that can be applied to any electronic resource. At the present time, the ratings are being applied to NLM's internal Web sites, and guidelines have been developed to assist creators in assigning the ratings to their sites. This information will be used to manage the ongoing preservation activities and to alert users about a Web site's long-term stability.

Another aspect of the creator's involvement in preservation is the creation of metadata. The best practice is for metadata to be created prior to incorporation into the archive, i.e., at the producer stage. However, most of the metadata continues to be created "by hand" and after-the-fact. Unfortunately, metadata creation is not sufficiently incorporated into the tools for the creation of most objects to rely on the creation process alone. However, as standards groups and vendors move to incorporate XML and other architectures into software products, such as word processors, the creation of metadata should become easier and more automatic.

The Open Archival Information System Reference Model (CCSDS 2001) provides high level data and functional models and a consistent terminology for discussing preservation. The reference model was originally developed by the Consultative Committee on Space Data Systems (CCSDS) to support the archiving of data among the major space agencies. However, it has become the de facto standard for the development of digital archives. It is used by most major projects including those in Australia, the United Kingdom, the Netherlands, and the United States. The OAIS Reference Model became a formal ISO standard in June 2002.

8.0 Important of electronic Scholarly publishing

a) Supporting librarians' mission, making them more relevant and reinvigorated with a better understanding of their purpose and potential services.
b) Serving faculty research, teaching, and publishing agendas (building collections to support faculty research, providing tools, delivering everything they want to the desktop, developing technological

expertise for their publishing projects, supporting the infrastructure for their courses).

c) Serving student study needs (creating new physical and virtual spaces for private and group work, helping students to become more efficient researchers).
d) Preservation (e.g. launching institutional repositories, preservation of an institution's intellectual assets as a "very important" reason for having IRs).
e) making scholarship available to the wider world (open access, digitizing special collections); and
f) Lowering the cost of scholarship (alternative publishing, legal experts to negotiate contracts).

9.0 The Challenges of Electronic Scholarly Publishing in Nigeria

a) Lack of Electricity supply

Electricity supply is a major problem in developing countries like Nigeria. This problem has made the development of projects like an institutional repository in Nigeria much difficult and expensive. Fatunde (2008) has observed that poor electricity supply is a major impediment to the operation and growth of information and communication technology in Nigerian universities. According to him only a trickle of daily electricity production dribbles erratically into the country's 93 institutions, rendering ICT systems dysfunctional.

b) Lack of funding

Lack of funding is another major problem experienced by developing country institutions in their effort to establish digital repositories, the state of funding to ICT infrastructure in academic and research institutions in developing countries like Nigeria is so low to sustain the development of electronic scholarly publishing. Hence a viable digital repository project will first require serious upgrading of the current state of ICT facilities in many academic and research institutions in Nigeria (Durrant, 2004).

c) Intellectual property right

Intellectual property right is an aspect of law that covers diverse legal rights that exists in creative work. Intellectual property law embraces such exclusive rights in copyright, patent, trademark, industrial designs, trade secret, trade name etc. Copyright law determines how a person can deal with a written work such as a journal article or a research paper. Generally, a copyright holder has the exclusive right to authorize the copying, recopying or distribution of the written work. In other words, she/he has the right to determine whether the

work shall be available in a closed or open access format. (Christian, 2011).

d) Inadequate information and communication technology infrastructure

Inadequate information and communication technology infrastructure, a major problem in this area is the high cost of internet bandwidth in the region. This cost results from the use of satellite infrastructure for internet connection as opposed to much efficient and cheaper fibre optic infrastructure. The long-term solution to the high cost of bandwidth lies in the development of more fibre optic infrastructure in the region as well as open access to same (Christian, 2008).

e) Lack of awareness

Lack of awareness of open access institutional repositories among researchers and academics in the country's academic and research institutions, More than 74% of the respondents surveyed during the course of the research are completely unfamiliar with open access institutional repository (Ivwighreghweta, O. 2012).

f) Inadequate advocacy for open access in Nigeria

One of the best ways to promote the development of Electronic Scholarly Publishing in developing countries is through advocacy. Effective advocacy presupposes that the advocates or stakeholders are very familiar with the concept (Christian, 2008).

10.0 Conclusion

With the highlighted problems the country may not be able to meet with the future of technological goals in digital age; in order to overcome some of the challenges the above problems or challenges must be solved and below step must be take accordingly. Take a more active role in publishing, develop effective strategies for scholarly communications, create organizational structures necessary to implement these strategies, create models that scale / collaboration across universities, develop online publishing capacity, invest capital strategically and provide leadership.

11.0 Recommendations

1) Make the organizational structure necessary to implement this strategy and leverage the resources of the Nigerian universities.
2) Deliberates a strategic approach to publishing on your campus, including what publication services should be provided to your constituents, how they should be provided and funded, how publishing should relate to tenure decisions, and a position on intellectual works.

3) Evolve a shared electronic publishing infrastructure across universities to save costs, create scale, leverage expertise, innovate, and extend the brand of Nigerian universities.
4) Dedicates resources to deliver an agreed strategic plan for scholarly communication
5) Acknowledge that publishing is an integral part of the core mission and activities of universities, and take ownership of it.
6) Take armoury of the landscape of publishing activities currently taking place within your university.
7) Deliberate the importance of publishing towards an institution's reputation, especially when associated with core academic strengths.
8) Evolve online publishing capabilities for backlist and frontlist content and for new emerging formats.

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