Local Content Management in Kenya Methodist University (KEMU)

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Abstract
This chapter is informed by a research study conducted to investigate the development of an effective and efficient local content management framework for Kenya Methodist University (KEMU). The objectives of the study included: to establish the types of local content at KEMU; establish the challenges that affect content management; and develop a framework for management of local content for KEMU. Survey method was applied and samples were drawn from heads of programmes, librarians, students, and lecturers. The Deputy Vice-Chancellor-Academic Affairs, the University Librarian and Information Communication Technology (ICT) Director were included as key informants. In-depth interviews were carried out and questionnaires used on students. The results show that there existed several types of local content at KEMU but there lacked a local content management policy. There were undocumented procedures, ad hoc collection methods and uncoordinated management of various types of local content as only past-papers were electronically managed. The study has developed and presents a framework for local content management at KEMU that can be applied by other institutions of learning and research.

Keywords: Local content, institutional repository, KEMU, knowledge management, Kenya.
Introduction

According to Atrafu (2005), local content is content that reflects the language, the culture, and the real life of a locality or a country. He attests that any information that can be localised (made linguistically and culturally appropriate to a target locale) qualifies to be local content. Brueggo et al. (2014) in giving recognition to local content notes that:

"The content that is most important to people is typically in their own language and is relevant to the communities in which they live and work. These communities may be defined by their location, culture, language, religion, ethnicity or area of interest and individuals may belong to many communities at the same time. Further, communities evolve so what is relevant will change over time. This relevant content is often referred to as 'local content'. The term community is used in a broad way to include not only local professional communities (public and private), but also non-professional content creators and users."

Most academic institutions do not have specific repositories for locally produced content instead they consider only content that is academic. These include theses and dissertations, research papers, technical papers and electronic books that the university has rights to or have been donated as content for institutional repository. The idea that a university repository should contain content for the local community rather than from the local community is emphasised by the Digital Content Landscape Model that presents both locally produced and globally sourced content as digital assets of a university (Conway, 2008).

Tjiek (2005) notes that local e-content management provides an opportunity for documentation of locally produced content and gives the digital library system, 'Desaliformas', developed for Petra Christian University as an example that has been very beneficial to various academic departments and non-academic units which had struggled to find some kind of documentation systems for their locally produced works or resources.

In the case of Kenya Methodist University (KeMU) as a community, this chapter considers local content in the university setting to be the expression of any knowledge owned and adapted by the KeMU community members; lecturers, non-teaching staff, researchers, administrators, students and various groups, societies, associations and clubs of members of the university community.

KaMU is a private university sponsored by the Methodist Church in Kenya. It has campuses in Nairobi, Nakuru, Nyeri and Mombasa. It offers certificate, diploma, bachelor's, master's and doctoral studies in several courses managed by the School of Business and Economics, School of Health Sciences, School of Science and Technology and School of Education and Social Sciences. It has a population of over 12,000 students. Its library is automated and uses Koha integrated library management system. The digital library services include e-journals, information literacy, e-books, website creation, updating and maintenance.

The Problem Statement

KeMU, like the other universities in Kenya, is equally affected by the inadequate expertise and experience needed in the management of local content. ICTs, although yet to be fully utilised, have been used to push foreign content towards the locals and in effect diminishing visibility and accessibility of local content instead of assisting in promoting the expression of locally adapted knowledge. Although local content is available, its identification, capturing, processing and dissemination are below par compared to foreign content. Information materials that were externally sourced were easily identifiable, processed and disseminated while most of local content types were not available for access, retrieval and use in the library. This has led to the inapplicability of research findings to local problems because information sources, theories and concepts that inform studies are derived from foreign content that is out of touch with local problems.

Local solutions on the other hand remain inaccessible for use and application as they are not given priority they deserve. KeMU library, for example, had a website, where researchers and students could access online journals but most of the journals were managed by publishers in the developed countries whereas there were no links to locally published journals. No study had been conducted to assess the efficiency and effectiveness of management of locally owned and adapted knowledge.

Literature Review

Yu (2005) and Warren (2001) consider Content Management (CM) as a process of collecting, organising, categorising and structuring informational resources of any type and format so that they can be saved, retrieved, published, updated and re-purposed or reused in any way desirable. These CM processes, as presented by Yu (2005) require a content management system that has all
the features to meet these processes. Effective content management should include consistent and reliable methods to identify requirements, manage authoritative sources of information, and assemble content on-demand to meet customer needs. Content management can also help content authors and site managers to organise, control, and direct information.

The idea that a university repository should contain content for the local community other than from the local community is emphasised by the digital content landscape model that presents both locally produced and globally sourced content as digital assets of a university (Conway, 2007). Regardless of the contents of an institutional repository, Yearwood-Jackman (2009) gives the following as the management activities involved:

- Developing an Institutional Repository (IR) from scratch
- Embedding an IR in the research management processes
- Managing content after it has been deposited in the IR
- Integrating an IR into the research management systems and business processes of an institution

Cohen and Schmide (2007) give three priorities considered in identifying content at the Cornell University’s Catherwood Library in. These priorities are: firstly, any material (scholarly articles and congressional testimony) emanating from the university (resident and extension); secondly, scholarly material published or produced by the university; and lastly non-university-produced documents.

Related to last priority is a Digital Repository Submission Agreement that offers non-locally produced content a place in the repository as long as the contributors agree with the submission agreement (Cohen & Schmide, 2007). For this to work, the policy should be clear on the definition of local content and what needs to be done to consider content submitted by non-members of the university community as local content. Genoni (2004:501) in considering the motivation for institutional repositories states that “faculty considers institutional repositories to be particularly well-suited for various types of grey literature and other fugitive and unpublished material”. These materials include: preprints, working papers, theses and dissertations, research and technical reports, conference proceedings, newsletters and bulletins, grant applications; status reports; committee reports and memoranda; statistical reports; technical documentation; and surveys.

International Institute for Communication and Development (IICD) and Tanzania Commission for Science and Technology project came up with Global vs. Local Content Expression and Application Grid (Figure 1). It is a simple grid comprising two axes to distinguish between the expression and application of content. Each has a global and local end.

![Figure 1: Global vs. Local Content Expression and Application Grid](image)

Source: Ballantyne (2002)

Universities are affected by the Northeast quadrant by way of availability of open access journals on the Internet, international search engines such as Google and Yahoo! The fact that the content within these sources is meant for global users and international application, reveals the role of the library in enhancing the use of global content through provision of Internet services and encouraging use of international websites, open source content and search engines.
KeMU subscribes to the Programme for the Enhancement of Research Information (PERI), an initiative of the International Network for the Availability of Scientific Publications (INASP). This programme enables Kenyan institutions of higher learning and research to have access to thousands of scientific journals. KeMU therefore encouraged and played a major role in pushing the global content to the local university community.

The locally owned content should be created, preserved/processed, and disseminated (UNESCO, 2011) in a manner that the university community can use. The university’s role is to produce and disseminate knowledge (Badat, 2009) in the society and being so it produces a lot of content both electronically and manually. The knowledge produced falls in the Southwest quadrant and can be referred to as local content as it is the expression of the locally owned knowledge. This knowledge can, however, be disseminated within the local community context and the global context thus it can also fall in the Southeast quadrant. These two quadrants reveal that local content is not only content for the local community but also content from the local community. KeMU generates knowledge in both electronic and non-electronic formats but how it is processed and disseminated determines its application.

This model reveals that local content creation (collecting, linking and capturing) is dependent on how well both local and global content is applied to create it. The preservation/processing (collating, recording and organising) and dissemination (packaging, repackaging, marketing and distribution) also determine the application of local content — whether it will be applied utilised locally or globally. Bruegge et al. (2011) concur with this revelation by outlining the steps of local content development as creation, preservation, dissemination and utilisation.

The Extended Conway Content Landscape Model (ECLM) (Figure 2) is a multidimensional framework that addresses three outstanding issues with digital asset management in universities. First, the model acknowledges the broader academic mission within which digital content is created, acquired (bought and licensed), managed and preserved, and distributed and used. Second, the model provides for selection processes and priority setting exercises based on the dual perspectives of content creator/stakeholders and content user/stakeholders. Third, the model identifies four digital content property scales that provide an analytical foundation for assigning management priorities to particular classes of digital content (Conway, 2008).

This model is a static representation of content of institutional repositories in universities and captures the management activities that are carried out on digital content in universities such as creation, identification, acquisition, preservation and dissemination. This model looks at how e-teaching, e-research, e-records and e-publishing relate with the variables that describe the core digital content management challenges that universities face: property rights, structure, source and possession.

ECLM presents the challenges that are faced by universities in management of digital content (local and global) as an asset. These challenges are property rights to the digital content for preservation and access, structure of the content that can be tight or loose; source of content can be either local or global; and procession or ownership of content that can be university owned or have licensed access.

Comprising the content is: digitised content that was not born digital it is loose in structure and internally sourced; managed content that is within University’s information systems and has property rights and is tightly
structured; licensed content that university has no property rights and has no ownership; and acquired content that the university owns and sourced externally.

A closer look at ECLM reveals the presentation of local content and the major challenges universities face. It can be deduced, from the definition of local content that the half on the left of Extended Conaway Content Landscape represents the local content and the one on the right represents the global content. The left represents content that the university is very likely to have property rights and it is locally sourced. The structure differs as it can be tight/highly structured like the campus publications, faculty publications and university journals and could be loosely structured like lecture notes or individual digital images. Possession is not a challenge when looking at the local content but property rights, source, and structure remain.

Methodology
The author applied survey method and triangulated both qualitative and quantitative approaches. From a population of 12,789, five strata were identified: 51 librarians, 12,247 students, 167 lecturers, 10 heads of programmes and three informants. 373 students and 49 lecturers were systematically sampled, 10 librarians (collection development and electronic services librarians) were purposively sampled and census was applied to have all 70 heads of programmes in the sample totaling to 442. The study also depended on the head ICT, Deputy Vice Chancellor - Academic Affairs (DVC-AA) and University Librarian as informants.

In-depth interviews were used to collect data from sampled lecturers, librarians, head of programmes and informants while print questionnaires were issued to sampled students at all KeMU campuses. Qualitative and quantitative data analysis techniques were applied.

Seventy nine per cent of the questionnaires were filled and returned while 53% of lecturers were successfully interviewed. All sampled librarians, heads of programmes and the three informants were also interviewed.

Findings and Discussions
The findings of the study are presented and discussed here.

Types of Local Content at KeMU
The study established the following as the types of local content at the university:

1. Lecture notes: materials that lecturers develop to assist them in teaching. They are made available orally, on white board, issued out as handouts, or disseminated via class group emails or to individual student emails. Some lecture notes are also availed to students through the e-learning system.

2. Journals published by KeMU: "International Journal of Professional Practice" (IJPP) accepts papers from within and without KeMU.

3. Research papers: mostly published by other journals apart from the IJPP.

4. Theses and practicum reports: at master’s degree level, project reports at bachelor’s level, and practicum reports for industrial attachment.
5. Magazines published by KeMU: “Bits and Bytes” magazine used to be published but at the time of study it was not being published.

6. KeMU websites: KeMU main and library website. The main website presents information on the University in general and has links to other sub-sites such as e-learning, students’ management system and the library website. Library website has information about the library and links to online information resources such as e-books, and e-journals. News, pictures and announcements are also made on the website.


8. ODLM manuals: These are information materials written to assist the students in distance learning mode.

9. KeMUSO Publication: Through various clubs, the student organisation had created a lot of content in form of posters, announcements, notices, pictures and webpages. These, too, comprised local content.

10. Past examination papers: managed by the wiki-based past papers management system. They are availed for use via the library website.

The above types of local content fit the definition given by Crow (2002) that local content is scholarly produced, submitted or sponsored by an institutions’ faculty (and optionally students) or other agents, non-ephemeral, and licensable in perpetuity.

Local Content management

Past examination papers and theses and dissertations were actively collected by the library and were managed as follows:

- Past papers were uploaded to the past papers management system with the name as course code of the unit followed by its title, the semester and the year the paper was done. Users could view and download past papers as soon as they were uploaded.

- Theses and dissertations were deposited by the originating teaching departments and were classified by an in-house classification scheme that gave a call number showing the department and subject, entered into the Library system and shelved for access.

The use of local content was minimal as compared to that of foreign content. Students mostly used past papers (88%), lecture notes (52%), and KeMU Publications (43%). Local content use took a smaller share of 36% compared with external content (64%). The Internet was the most used source of information and was the reason for more access to foreign content.

The access, retrieval and use of local content depended on awareness of its existence. Very few students were aware of the available local content. Lecturers had authored books and articles that were published but only a few learners (12%) were conversant with their existence.

Retrieval of local content was dependent on whether the material sought was findable. The library was depended upon for books (60%), magazines (20%), and theses and research reports (92%) while past papers (90%) and KeMU official publication (91%) were sourced from the library website. Lecturers were depended upon for lecture notes (100%).

Challenges of Local Content Management

The challenges faced by LCM can be grouped into policy, technical and social categories.

Policy Related Challenges

These included lack of incentive for KeMU community members to encourage them to publish, inadequate funding for research, priority was given to global content during acquisition of library collection, research and extension department/directorate was less than a year old since it was set up and had not yet developed policies, only one local general journal (LJP) that did not attract researchers who would rather publish their work in a specialised journal, lack of coordination between departments leading to conflicting roles management of local content, copyight issues that affected the local published works.

Technical Related Challenges

Technical challenges include inadequate application of ICTs in the management of local content. Apart from the main website and the library website, other departments did not have online presence for their content, only past papers were electronically managed, information/data security was a serious challenge as lecturers, librarians and students perceived ICTs as insecure.
Social Related Challenges
There existed a negative attitude to local content, owners/creators of local content held it close to their hearts and did not want to lose ownership of their work.

Conclusion
While KeMU has local content it needs to develop a local content policy that will guide its management thus bringing to a halt duplication and conflict of roles, neglected types of local content inaccessible, unaccounted for and unused but important local content. While the library has adequate and well managed collection, it is more of global than local content and needs to put more emphasis on collecting local content. KeMU community should be made more aware of existing local content as this will increase its popularity and use.

Recommendation
Local Content Policy
The authors recommend development of a local content policy given that there were undocumented procedures, ad hoc collection methods and uncoordinated management of various types of local content at KeMU.

The local content policy should be developed by a local content policy committee chaired by the librarian and drawing members from all the teaching, administration and students’ departments. This initiative would see all stakeholders’ opinions, needs, requirements and even grievances accommodated during policy formulation thereby increasing its acceptability and applicability. The policy should give guidance on the following issues: definition of local content, procedures, incentives for creators, responsibilities of departments, funding and staffing for the local content management, training of users, awareness creation.

Proposed Model
The proposed framework presents local content management as three-part process: creation/collection; management (collation, collection, processing and dissemination); and use/access of local content.

The framework recognizes key players, the activities for each part and presents local content management as a spiral continuum that grows from creation/adoption, then management where it is collected, collated and organised into repository/storage and finally it is availed for access/use. The framework foresees that with accessibility and use of local content, more content is created/colllected leading to the management of increased volume of local content thus the outward expansion of the spiral.

Figure 4: The Proposed Local Content Management Framework for KeMU

Creation/adoption
Local content such as research reports, books, magazines, journals, yearbooks, project and practicum reports, theses and dissertations, lecture notes, past papers, presentations, meetings, websites, blogs, poems, pictures videos, etc., can be created/submitted. Other content can be adopted such as links within blogs, references in research papers and supporting documents for project or practicum reports. Local content can be created or collected in print or digital formats.


**Adoption of Cloud Computing at The Technical University of Kenya: Opportunities and Challenges**

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**Abstract**

This chapter emanates from a research study conducted to examine the extent of adoption of cloud computing as well as its associated benefits and challenges at The Technical University of Kenya. The author employed descriptive research. Primary data was collected through interviews and observation of how cloud services were delivered to students. The Technical University of Kenya was picked as a case study because of the need to provide a detailed qualitative data that describe a specific context. The findings revealed that The Technical University of Kenya has set up a private cloud. It also utilises cloud-based services to provide storage capabilities, e-mail services, communication and networking as well as cloud-based social media platforms such as Facebook and Twitter. The adoption of cloud computing has brought about benefits such as operational cost reductions, enhanced reliability of services, improved security, increased ease of information sharing, creation and development of diverse sources of information, faster deployment of applications and ICT infrastructure as well as easy monitoring and management of service delivery, amongst others. The challenges identified as hampering wider adoption of this technology include lack of trust, resistance to change and inadequate awareness of cloud computing capabilities amongst university staff and students. The findings may be useful to The Technical University of Kenya and other public and private universities in Kenya as well as researchers working in this field by providing information on cloud computing and its potential opportunities and challenges for academic institutions. Although other research studies on this theme exist, the current study is original in Kenyan universities setup. Similarly, it is the first to apply the theme to The Technical University of Kenya.

**Keywords:** Cloud computing, ICT, cloud computing adoption, Saas, PaaS, IaaS, universities, Kenya

**Introduction**

Cloud computing is defined differently by different scholars. However, its indisputable essential characteristics include on-demand consumer access, broad access to network, pooling of resources, rapid elasticity and scalability, measured service provision/pay-per-use model, virtualised resources/computer resources, customised service level agreements (SLA) and cloud