Theme
Technical Management of Islamic Information Resource

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Topic
Enriching and managing islamic digital resources: the need for special skills and competencies for the ummah
ENRICHING AND MANAGING ISLAMIC DIGITAL RESOURCES: 
THE NEED FOR SPECIAL SKILLS AND COMPETENCIES FOR 
THE UMMAH

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1. ISLAM CIVILIZATION AND KNOWLEDGE CREATION

During the Islamic Golden Age, sometimes known as Islamic Renaissance, which dated from the 8th Century to the 16th Century, Muslim scholars had contributed in science, mathematics, astronomy, philosophy, medicine, arts, literature and many others. Arts flourished, including metal work, textiles (especially silk), the making of illuminated Qur'ans, and calligraphy. Many invention and innovation were made which became the basis of today’s knowledge. From the time of the Prophet Muhammad SAW (pbuh) to the time of the Umayyad Caliphate, Abbasid Caliphate, Fatimid Caliphate, Ottomans Empire, Islam spread from the Arab Continent to Africa, Central Eastern Europe, Central Asia, China and to Southeast Asia, creating the Islamic civilization which kept the knowledge alive and passed it to others. Al-Quran and the Prophet Muhammad (pbuh) urged all Muslims to teach themselves and seek knowledge. The Prophet Mohammed (pbuh) taught Muslim in Darul Arqam, the first school for early Muslims in Mecca. When the Prophet (pbuh) went to Madinah and built mosques, education became one of the
most important functions of the mosque. Knowledge became the basis for cultural, educational and economic development at the time.\(^1\)

In the 9\(^{th}\) to 10\(^{th}\) Century many learning centers – madarasah-colleges, mosque-universities - were established in the Muslim world. Harun al-Rashid opened the School – *Baytul Hikmah* also known as “The house of Wisdom” – in Baghdad where Islamic studies, Arabic language, literature, mathematics and history were taught and many books were translated to Arabic languages, the language of education of that time. There were a Department of Library and Translation in *Baytul Hikmah*. Knowledge was institutionalized and proliferated during the golden time. Other learning centers such as *Al-Qarawiyyin* in Fez, the *Al- Zaytuniah* in Tunisia and Al Azhar in Cairo were renounced for producing prominent Islamic scholars. The *Al-Madarasah Nazamiyya* which was established by the Suljuk ruler al-Arsalam in 1063 CE spread to Baghdad, Alexandria in Egypt, Damascus, Samarkhand, Bokhara, and many other Islamic cities. The organization of *Al-madarasah Nazarmiyya* were said to be copied by the early universities in Europe.\(^2\) Muslim began manufacturing papers, learning from the Chinese when Islam spread to China. The ample supply of papers activated Muslim scholars, calligraphers and copyists to write and reproduce books. Educational cultural centers known as *Suq-al-Warriqin* were established as a place for copying, reproducing as well as places where scholars met and discussed about different branches of knowledge. Many Islamic scientific and philosophical texts were translated into several languages including Latin and gradually become available to the philosophers of the West.

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\(^2\) Ibid
Muslims began to develop reading habits as part of their learning processes or in their cultural life. All these contributed to the development of libraries in the Muslim world, in mosques, schools and educational institutions. It was stated that there were thousands of volumes of books in the libraries. Libraries were established in many Islamic cultural centers and cities such as Shiraz in Iran and Alexandria Cairo as Muslim at the time were interested in pursuing education in all fields of knowledge.

Islamic scholars had produced many writings which became the foundation of learning and influenced many other thinkers. Islamic scholars, to name a few, were well known in their respective fields of knowledge. Muhammad bin Musa Al-Khawarizmi (780-850), a mathematician, astronomy and geographer, invented algorithm and his writing *Al-Gabr wal Mugabal* (the Book of Integration and equation) became the forerunner of today’s computer systems. Mohamad Ibn Zakarya Al-Razi (864-980 CE), a philosopher and physician wrote more than 116 books covering the field of philosophy, logic, engineering, chemistry and medicine. His book *Kitab al Marsoori*, was translated into Latin and many of his writings dealt with Greco-Arab Medicine. Abu Al-Hassan Ibn Rabban Al-Tabari (838-870 CE), was among the first generation of physicians and produced the 1st *Encyclopedia of Medicine* which laid the foundation in the development of medicine. Abu Nasr Al-Farabi (870-950 CE), an expert in philosophy and political thinker whose book *Fusus-al Hikam*, became the textbook of philosophy for several centuries, hence, his thoughts have influenced many thinkers. Abu al-Qassim Khalaf bin Abbas al Zahrawi (940-1013), known as the father of Surgery and his writings contributed to the advancement of medicine and
surgery in particular. His writing *Al-Tasrib*, a medical encyclopedia, was translated in Latin and many European languages and became the medical text in the universities from 12th to 17th Century. was translated into Latin and other European languages. Al-Husain Ibn Abdullah Ibnu Sina (980-1137), contributed not only in philosophy, medicine, mathematics, chemistry and astronomy and wrote *Kitab Al-Shifa* (Book of Healing) a philosophical scientific encyclopedia which deals with logic, philosophy, geometry, astronomy, arithmetic and music. His book on *Al-Qanum fil Tib* (The Cannon of Medicine) was translated into Latin and became a guide to medical sciences in the West. Al-Biruni, the Islamic mathematician, contributed in the fields of astronomy, engineering, physics, and medicine. Abu Hamid Muhammad Ibn Al-Ghazali (1656-1111), the Muslim intellectual who was the jurist, theologian, mystical thinker, philosopher and Sufism. Abd al-Rahman Ibn Muhammad also known as Ibn Khaldun was an adventurer who wrote books on history, society and sociology whose book contributed to the understanding of civilizations. Ibn Batutta (1304-1368) who traveled to ancient cities in Russia, Europe, Africa, India across Asia, and he dictated his adventures in geography and cartographic books. Evidences of Muslims' achievements and contributions can be seen today from manuscripts, books, maps and documents, artifacts that are found in major libraries and museums as well as beautiful architectures found in countries where Islam had left its influences.

Islamic golden era spread to other part of the world in Central Asia and South East Asia. In Pakistan, Mohammad Iqbal, a poet, philosopher, political thinker and a social reformer who produced many books which are still being studied till today. In Southeast Asia, Sheikh Daud Abdullah

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4 Ibid
Al-Fathani and Raja Ali Haji who wrote many Islamic manuscripts on history and philosophy and literary. Hamka who wrote books on history, literature and his famous book *Al-Azhar* is still being studied till today.

2. THE CHALLENGE OF MUSLIM UMMAH IN KNOWLEDGE ERA

The 14th to 19th Centuries saw the spread of Western powers and many Islamic countries were being colonized or becoming protected states of the Western powers. During these periods, many Islamic manuscripts, documents and books as well as artifacts were taken by the colonial powers as part of their active acquisition policies or through legal procedures, and these were kept in their respective museum and libraries. Thus, many of precious Islamic s manuscripts, maps documents, books and artifacts are found in major libraries such as the British Library, British Museum, Library of Congress, and many libraries and museums in the Western world. War, conquest by the west and internal disputes resulted in many manuscripts and books in major Islamic libraries being destroyed, hence the loss of Islamic literary heritage and knowledge and information resources.

Advancement of ICT especially the Internet, have brought significant changes in the way information and knowledge are generated, organized, distributed, accessed, utilized and preserved for future generation to appreciate, study, conduct research, thereby further enriching the information and knowledge creation. The availability of imaging technologies makes it possible to process, store and disseminate large amount of knowledge and information resources in the net, thereby the emergence of digital libraries.
In the era of globalization today, the economy is becoming increasingly dependent upon the ability to efficiently produce, disseminate and use knowledge. The competitiveness of a country depends on its knowledge acquisition capacity. As more knowledge and information resources are available in digital format on the Web, those who lack the technical know-how on the use of IT for information seeking and in knowledge creation and ability to put knowledge resources on the web may be left behind and lead to economic deprivation.

Ayob Meher in his research “From knowledge Creation to Economic Development: the Missing link in the Muslim world” shows that there is positive relations between economic growth and the continuity in the creation and utilization of knowledge.

“The world has moved to a revolution which is built on knowledge, on technology and on information. Knowledge, if it is properly transferred, if it is made available to all, gives the greatest opportunity for people to advance themselves and to fight against poverty.”

Islam is a religion of knowledge. Many surah in the Al-Quran encourage the believer to utilize their intellect and mind for the sake of knowledge. Acquisition of knowledge is obligatory for every Muslim men and women. The Quran gives orders and instructions for research and to collect the observations and knowledge and the things in the universe. Research and

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knowledge creation is a form of Fardhu Kifayah for the Muslims. The Quran implies the importance of creation of knowledge for Muslim Ummah.

Muslim must master IT in order to effectively use information and knowledge resources in order to forge ahead in the knowledge Era. If not, Muslim ummah will continue to lag behind in all areas, in economic, education and knowledge creation, thereby not able to compete with capitalist nations with competitive economic policies. Knowledge and information resources are strategic assets for any individuals not only for achieving academic excellence and improving standard of living, but also for technology transfer, for planning and strategic decision making, for negotiating and marketing in the competitive open market, and to achieve quality of life.

In the post colonial period, Muslim countries continue to create knowledge, although at slow growth rates, to resolve their economic and social problems. However, there are often serious obstacles which prevent advantageous use of such knowledge. These obstacles include: (a) educational and training levels; (b) low information literacy rate, (c) poor ITC and network infrastructure for storage, access and dissemination of knowledge and information; and (d) lack of culture for documentation and enriching local indigenous knowledge. Some innovation, scientific and technological knowledge is produced, but then "lost" or underutilized due to inadequate bibliographical control and lack of mechanisms for systematic dissemination of locally created knowledge information resources.
The challenges for Islamic information professionals are to leverage on knowledge and information for development and to share experience and expertise on information and knowledge created both locally and from abroad, thereby continue enriching Islamic digital portals that are already in existence, with the goal of enriching local stores of Islamic knowledge resource. It is important to produce local information, to share local information and to systematize local experiences so that others may also enrich their knowledge stores and not reinvent the wheel. The challenge for librarians and Information professionals are to continue building the capacity through human capital development in IT and continue enriching Islamic digital resources of local contents to show to world the wealth of Islamic knowledge and information resources.

3. ISLAMIC DIGITAL LIBRARY INITIATIVES

Advancement of ICT especially the Internet, have brought significant changes in the way information and knowledge are generated, organized, distributed, accessed, utilized and preserved for the future generation to appreciate, study, conduct research, thereby further enriching the information and knowledge creation. Many libraries and information institutions have taken steps to initiate digital library programs. Computers and networking can be applied to process knowledge creation and knowledge sharing and improve access to knowledge. One of the important contributions of ICT and the Web Technology has been the creation of digital library, which allow users to access digital information and knowledge resources from any where, at any time at affordable cost. ICT developments have also resulted in digital library research projects,
digital library initiatives or models and producing e-publication, e-thesis, e-journals, etc.

The concept of digital Library has different connotations for different professions. Edward A. and Urs, Shalini R.\textsuperscript{7} and Bearman, David\textsuperscript{8} articles published in \textit{AR/IST} have detailed discussions on Digital Library. To Information Technologist and System personal, digital library is a powerful tool and mechanism for managing distributed networks. To Information Scientists, digital library represents new means of extending services to distributed and remote information users. To librarians and Information professionals, digital library is an extension of the traditional library involving in acquiring, organizing, disseminating with the use of technology.

Reitz, Joan M.\textsuperscript{9} refers digital library as a library in which significant proportion of the resources are available in machine-readable format, as as opposed to print, microform, accessible by mean of computer. The digital contents may be locally held or accessed remotely via computer networks. Digital Library is a “managed collections of information, with associated services, where information is stored in digital formats and accessible over a network”. (Arms, W., 2000)\textsuperscript{10} Digital Library is an extension, enhancement, and integration both of information retrieval systems and multiple information institutions, libraries being only one … the scope of

\textsuperscript{7} Digital Library. Annual Review of Information Science and Technology. Chapter 12, vol. 36, 2002
digital libraries capabilities include not only information retrieval but also creating and using information … they really the extensions of the physical places where resources are selected, collected, organized, preserved, and accessed, including libraries, museums, archives, and schools”. (Borgman, C, 2003)\textsuperscript{11}. Tedd, L. and Large, A (2005) states that digital library must contain information in a digital state (electronic resources) and that these resources are represented in texts, still images, moving images or audio sequences, or some combination of these different media.\textsuperscript{12} Digital libraries exist in distributed networks where users can gain access via telecommunication networks. However, some libraries, especially in developing countries where telecommunication infrastructure are still developing, have digital resources in CD-ROM. Chowdhury and Chowdhury (1999) emphasizes that one of the characteristics of digital libraries is that a large percentage of materials are still found in non-digital form.\textsuperscript{13} Therefore, presently, most libraries are “hybrid libraries” rather than totally digital library as that collection of most libraries includes print materials.

Libraries are now beginning to create digital contents from their rich resources as well as subscribing to commercial databases in order to provide access to knowledge and information resources.

Advantages of digital libraries for the Muslim are:


a. *Enhance access.*

Digital Libraries will enhance access to Islamic resources to users who are not at the same physical location as the knowledge and information resources. For example, researchers from any part of the world will be able to access Al-Azhar university’s knowledge and information resources when they are fully digitized. This will further contribute to an enrichment of Islamic knowledge and information resources. Digitalization of the wealth of Islamic resources will increase awareness among global communities of the wealth of Islamic and knowledge resources.

b. *Multi-disciplinary research approach*

Researchers will be able to study Islamic resources from multi-disciplinary approaches. Beautiful Illuminated manuscripts, for example, may be studied from artistic approach, historical approach, linguistic approach or subject content approaches, and so forth. The availability of Islamic knowledge and information resources in digital formats, make it possible for researchers from different discipline to study the items from different approaches. It is possible to develop virtual exhibition of Islamic manuscripts or artifacts for better viewing and thus encourage virtual study tour among schools children and students of institutes of higher learning as well as the general public. This will promote understanding of Islam to the global communities.
c. **Collaboration**

Libraries and information institutions with similar digital library initiatives can collaborate in developing knowledge portals on Islamic resources, thus reducing duplication through sharing resources, experiences and expertise. Creating digital contents will also encourage collaboration within organizations such as libraries and members of other faculties that have the resources and subject expertise. Collaboration in terms of subscribing to commercial digital databases among libraries will save cost.


c. **Preservation**

Converting Islamic fragile manuscripts to digital formats will reduce handling of the items and thereby protect them from further deterioration. Digital resources can be placed or mirrored in different locations, thereby protect the digital collections from destroy in case of disaster.

d. **Fee-based services**

Having knowledge and information resources in digital formats will reduce cost for repetitive copying and these resources can be charged for online document delivery services creating fee-based services for library and information institutions. Some of the beautiful images of illuminated manuscripts and artifacts can be reprint as cards and specials posters that can be sold.
**e. Enhance professionalism**

Undertaking digital library project will enhance professionalism of librarians and information professionals, allowing them to embark on new digital projects, learning new subject contents, developing skills and competencies in digitization of information resources, providing digital reference services and promoting digital information literacy. This will certainly enhance the image of librarians and information professionals to the stakeholders, the global communities, and the Muslim ummah at large.

Tedd and Large\(^{14}\) lists number of advantages of digital libraries, that it provides access through distributed networks to the wealth of world's library resources. Digital libraries enhance search and browse features and enable documents to be downloaded or merge with other documents.\(^{15}\) Information professionals have accessed to bigger collections, wider accessibility, reduced storage costs and more powerful retrieval capabilities.\(^{16}\) Ted and Large also list some of the major problems of digital libraries as follow: equity of access – digital divide; interoperability between systems and software, user authentication for access to collections, information organization, interface design, intellectual property rights, preservation of digital resources over time, and staff re-skilling and training.

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\(^{14}\) Tedd, Lucy and Large Andrew. (2005)
\(^{15}\) Ibid
\(^{16}\) Ibid
Most of the digital resources found on the web are mostly created by non-Muslim institutions that have collected Islamic manuscripts, documents, maps, books etc over the years.

The following websites illustrate some of the Islamic digital library initiatives:

- www.al-islam.org lists Islamic books, journal of Islamic Thoughts and culture, gallery of photos, calligraphy and Islamic arts and architecture.

- www.academicinfo.net/islamilibray.html which attempts to digitalize Islamic resources which includes articles from quarterly journal of Islamic thoughts and culture, gallery of photos, calligraphy, arts etc

- www.bl.uk/onlinegallery, digital project of the British Library, which contains images from around the world, including al-Quran e.g. The Chinese Al-Quran in the 17th Century.

- www.britishmuseum.org/middle_east/Islamic_middle_east.aspx displays and provides online tours on Islamic arts, calligraphy, artifacts, etc

- www.islamicarchitecture.org is the Islamic Studies Digital Library shows images of Islamic architectures, including books on architecture, arts, and education about Islam.

- www.islamicity.com developed in California attempts to provide forums, discussions and dialogs among various civilization including Islam.

www.islamicmanuscript.org/resources/digitalmanuscripts/html, developed by The Islamic Manuscript Association (TIMA), is an international effort to protect Islamic manuscripts and thus provides links to collections of manuscripts in major libraries such as the British Library, Yale University Library, National Library of Czech Republic, Royal Library of Copenhagen, and many others.

www.ummah.net/history/scholars developed by Manzur Ahmad, provides biographies of Muslim Scientists and scholars who have contributed immensely to human knowledge in the period from 8th to 14th century CE. The Los Angeles County Museum of Art which houses one of the most significant collections of Islamic art in the world extending from southern Spain to Central Asia is planning to develop visual exhibition of Islamic arts.

We are indeed happy to hear that the Al Azhar University, which houses approximately 44,000 manuscripts, 9,000 of which are the only copies in existence, is planning to embark on the project to digitize its collection. The project “will make available the biggest library of (Islamic) manuscripts in the world,”

In Malaysia, many libraries are undertaking digital libraries initiatives. Many digital libraries are digitizing their thesis, manuscripts and their own publications. www.iiu.edu.my/library provides digital library services provide online services on its thesis, manuscripts, IIUM publications as well as other commercial databases. www.iidl.net hosted at the National Library of Malaysia attempts to serve as a source of information on Islam and Muslim in Malaysia and Southeast Asia. www.mylib.com.my is one of the SISTEM PERDANA (National Digital Library Initiatives) in Malaysia which provide links to all Malaysian Libraries' digital local contents databases. Under the 9th Malaysia Plan, the Malaysian Government has provided funds to the National Library of Malaysia and the public libraries in Malaysia for developing digital contents. State libraries are developing local cultural and historical digital contents, some are accessible online through their websites and some are available only at their own premises.

4. SKILLS AND COMPETENCIES FOR DIGITAL LIBRARY PROJECT MANAGER

Librarians and Information professionals who are embarking in digital libraries project and are responsible for collection building, organizing, disseminating and marketing digital knowledge and information resources in its related areas must have the necessary skills and competencies in creating, organizing, managing, providing effective services of digital resources to its users. Competencies refer to capabilities expected of a person hired to perform a specific job or upon successful completion of study and training.\textsuperscript{18} In library environment, it refers to the knowledge, skills, and experiences necessary for effectively handled professional responsibilities.

\textsuperscript{18} Reitz, Joan M. Ibid.
Librarian or Information professional who is given the task as Digital Library Project Manager should have professional competencies, technical competencies, and personal competencies and preferably with subject knowledge skills in the related areas. Professional competencies relates to the practitioner's knowledge of information resources, access, technology and management, and the ability to use this knowledge as a basis for providing the highest quality information services. Technical competencies refer to the ability to use IT tools to capture / scan digital images and thereby creating creative digital contents and practitioner's knowledge of information resources, access, technology and management. Personal competencies refer to a set of attitudes, skills and values that enable information professionals to work effectively and contribute positively to their organizations and communities they served, and to the profession. Librarians and Information Professionals must be competent and are able to promote digital information literacy, i.e. the ability to understand and use information in multiple formats from a wide variety of networked computer resources and be able to analyze multimedia images, sound and texts. (Gilster, 1995).

The roles of Muslim librarians and information professionals in the Knowledge and Digital Era should include making digital knowledge and information resources easily accessible for the users and empowering its use in order to encourage continuous knowledge creation by Muslim Ummah, thereby enriching

Islamic knowledge and information resources. Muslim librarians and information professionals should play the following roles, as: Information Consultant, Strategist/ planner, Information Entrepreneur, Researchers, Document Specialist, Digital Content Project Manager, Web Master, Advocator of Digital Information Literacy, Custodian of institutional/community memories and Trainer / Facilitator. They must have the necessary skills and competencies to create digital resource, thereby contribute to an enrichment of the Islamic resources and manage digital reference services that provide access to a wealth of digital resources either on the web or from specialized databases.

**Professional competencies** which include:

(a) Managing information organizations

- strategic planning, creating clear vision, developing policy on Digital Library, project management for creating digital contents either in-house development or outsourcing, quality assurance of digital contents, governance of digital library projects under cooperative and collaborative projects, benchmarking, performance measures, financial management (budgeting, monitoring and control), human capital development for digital library, negotiation from content providers as well as with the vendors of commercial databases, change management, leadership skills in order to provide direction for the future.

(b) Managing information resources

- Digital information resources life cycle, library collection development policy, organizing knowledge and information resources by applying standards metadata, developing Islamic thesaurus and taxonomy, structuring digital information, preservation of digital resources, understanding
legal copyright framework and intellectual property issues, privacy and confidentiality of digital contents.

(c) Managing information services

- Customer focus information services, marketing of digital information products and services, research on users' information needs and behaviors, evaluation of digital contents, creating web bibliographies on related topics, promoting digital information literacy, ability to interpretation, analyze and synthesize as well as validate of digital text, images and digital information resources, packaging digital information resources.

**Technical competencies** includes understanding the state-of-the-art of imaging technologies, converting/capturing image (text/pictures) into machine readable format, quality control for digital texts and imaging whether internally developed or out-sourced, ability to evaluate digital library initiatives to study best practices, effective use of search strategies, develop web design, structuring of digital information, contributing digital contents for the national information and knowledge infrastructure, computer security, managing computer networks, and trouble shooting for IT systems.

**Personal Competencies** include critical thinking, having good communication skills, good customer relations, resourcefulness, and team player with other professions, commitment, flexible and positive in an ever changing environment. For Muslim Manager personal competencies also include *amanah* (conduct work with integrity), *Iqra*’ and "*Ilm* (read and continuous learning), *adil* (fair and just), *Muhasabah* (self accountability), *Al-Amin* (trustworthy), *Siddiq* (truth in presenting information), *tawakul and
taqwa (Confident and grateful to Allah SWT), Muraqubah (Inner feeling that Allah is ever-seeing & ever-watching), Ihsan (doing things right with sincerity, completeness, tastefulness & correctness), works as Ibadah and as Allah’s khalifah in this world, worldview (think global, act for the benefit of the ummah), Budiman (abundance mentality and treat everyone with dignity), and continually striving to collaborate and linking with the ummah.

Subject knowledge skills

As digital library project manager, it would be good to have an understanding of subject knowledge skills related to the contents of the digital library products. Developing metadata and taxonomy of Islamic resources require subject knowledge on Islam.

5. DIGITAL LIBRARY COURSES OFFERED AT IIUM

The Department of Library and Information Science, Kulliyyah of Information and Communication Technology, International Islamic University Malaysia (DLIS-KICT-IIUM) offered the Digital Library course in 2006. The Digital Library course module was developed after studying various digital library courses or similar courses at other Library Schools locally and internationally.

The objectives of the course are: (a) to expose students on theories, models and concepts of digital libraries; (b) to familiarize students with digital library initiatives at national and international levels, especially in Islamic countries; (c) to expose students in the planning, creating, organizing and managing digital resources; (d) to study issues relating to access, preservation, copyright of digital library resources and ethics.
when creating digital contents, (e) to study trends and future of digital libraries.

The course contents include:

- Theories, research, models and best practices of digital library initiated by different countries including Muslim countries;
- Evaluation of digital library initiatives by different institutions;
- Planning and management of digital library;
- Hardware and software requirements for creating digital contents;
- Managing digital resources and services including cooperative and collaborative digital library projects;
- Human resources development for digital library;
- Preservation of digital resources;
- Legal issues including copyright, protection of Intellectual Property, and Ethics;
- Future of Digital Library & challenges ahead.

Students are expected to produce a selected digital content produced in CD-ROM as part of the term assignments.

The above course contents do not include other relevant courses where digital library components are integrated in the courses, namely Information Sources and Services (LISC6040), Information Resources Development (LISC6050), Management of Information Institutions (LISC6070), Advance Reference and Information Services (LISC6110), Information Analysis and Organization I (LISC6120), Information Analysis and Organization II (LISC6121), Information Storage and Retrieval (LISC6180), Information Processing and Database Development (LISC6410), Management of Automated Systems (LISC6420), Application of Information Technology in Libraries (LISC6450) and Artificial Intelligence and Information Systems (LISC6495).
I hope that students who graduated from (DLIS-KICT-IIUM) will be able to contribute to their respective institutions where they work by initiating or involving in the digital library initiatives.

6. CONCLUSION

With the emergence of digital libraries, Muslim librarians and information professional must take on new responsibilities in coordinating digitization projects. They must be competent in creating and converting Islamic knowledge and information resources into digital formats and learning new skills to exploit new technologies and master all aspects of online information resources in order to deliver effective information services. Muslim Librarians and information professional should not be just the consumers of information resources developed by others. They must take the responsibility to make the wealth of Islamic knowledge and information resources easily accessible to the Muslim ummah as well as to the global communities. Sharing information resources with other Muslim countries and linking the ummah is important for all us. The challenge is to continuously developing competencies and skills in using IT for creating and enriching Islamic knowledge and information resources. Continuous education and training are essential in order to cope with the new required competencies and skills.
Reference


[Note: I would like to thank all MLIS students of the Digital Library at DLIS-KICT-IIUM who have done extensive evaluation of the Islamic digital library resources from the web as part of their term assignments].