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## EDUCATION AND TRAINING IN ELECTRONIC RECORDS MANAGEMENT (ERM): THE NEED FOR PARTNERSHIP BUILDING

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**Abstract.** The use of computers within the electronic environment has led to rapid and dynamic changes in the way governments and businesses operate. One of the significant outcomes of computerization is that managing electronic records now relies on IT and it needs to be integrated into the business processes of an organization. Therefore electronic records management (ERM) not only requires the involvement of key players in recordkeeping, such as records managers and archivists, but also IT personnel and administrators under a common shared responsibility to establish a credible electronic records management programme. According to McLeod, Hare and Johare (2004) managing records in the electronic environment is not only a major challenge but also increasingly a strategic issue for organizations in both the public and private sectors. They suggested that “a key factor in meeting both the challenge and addressing the strategic management is the provision of education and/or training for employees and potential employees (i.e students). In particular, providing this at the appropriate level of detail and in the appropriate areas of the subject, commensurate with roles and responsibilities so that these people can discharge, both effectively and efficiently, their responsibilities for managing records in the electronic environment”. Within this context, this paper examines the education and training opportunities on ERM worldwide and in Asia.

### The Technology Challenges in Managing Electronic Records

Changes in technology and multimedia have brought new types of records into existence. They are more difficult to identify and therefore challenge the ability of the record keepers and those who are involved in managing these records, to capture them in a static or permanent form that will enable them to provide evidence of business or administrative transactions.

In traditional paper-based document systems, the media and format used for a record has been the same for the entire history of the record from creation, transmission, use, and reference, through to storage. There is no difference between preserving the form and preserving the content because of the permanent relationship between the physical format of the paper and the information it contains.

For electronic documents, the media and format of information can be changed during the lifecycle of document, and the actual encoded format during authoring or creation, transmission and storage is almost certainly different in order to support the processing required at each stage (Hofman, 1999). Therefore, the form of a record only exists when it is generated during authoring or creation, printing or viewing and may be slightly different for different creating and display devices.

Reading and understanding information in digital form requires equipment and software, which is changing constantly and may not be available within a decade of its introduction. “Who today has a punch card reader, a Dectape drive, or a working copy of FORTRAN 11? Even newer technology such as 9-track tape is rapidly becoming obsolete. We cannot save the machines if there are no spare parts available, and we cannot save the software if no one is left who knows how to use it” (Eisenbeis 1995).

Due to the above issues, McLeod, Hare & Johare (2004) argue that “the life cycle model of managing paper records, where intervention was usually triggered by the age and use of records, resulting in a physical relocation, is no longer adequate or appropriate in the electronic environment. In the electronic environment the priority is to ensure that, at the point of creation, the electronic record is captured and fixed with all of the attributes of recordness so that it can provide evidence of and information about the business transaction to which it relates”. Therefore managing electronic records requires intervention at the systems design stage to guarantee appropriate creation and capture to ensure the integrity and authenticity of those records as evidence required for accountability.

Electronic transactions are in principle no different in nature from their paper counterparts; they need to be recorded, captured in a fixed form, maintained and made accessible as records. Electronic records should provide the same degree of evidence of business activity and support the same level of accountability for the immediate and future needs of organisations, individuals and societies. However,

they are far more vulnerable than paper records and must be carefully managed to ensure their accuracy and authenticity as proof of accountability as the term preservation as applied to electronic records no longer refers to the protection of the medium of the records, but to that of their meaning and trustworthiness as records (Duranti, 1999). Already there are chronic problems in reading, retrieving, decoding and accessing them over time, and there are a growing number of instances of gaps in the evidence required for accountability. These are the greatest challenges faced by the record keepers of our era.

The National Archives survey (2003) on electronic records in the Malaysian public sector revealed that a large portion of their records resided on tapes that the various Ministries could no longer get access to, due to technological obsolescence.

These technical challenges are not only faced by the Malaysian record keepers but also by all record keepers all over the world. The following are spectacular examples of failures in record keeping because of the technical challenges of managing electronic records:

- The US Census Bureau could not gain access to its raw data from the 1960 federal census because there were only two machines in the world capable of reading those tapes: one in Japan and the other already deposited in the Smithsonian Institute as a relic (Committee on the Records of Government, 1985:9, 86-87).
- Many electronic records of the former East German government are inaccessible to the citizens and present government of Germany because the relevant computer systems lack the necessary documentation, and the records are held on obsolete media whose condition has deteriorated (Crockett and Yeo, 2004).
- In 1964, the first electronic mail message was sent from either the Massachusetts Institute of Technology, the Carnegie Institute of Technology or Cambridge University. The message does not survive, however, and so there is no documentary record to determine which group sent the path breaking message (National Research Council 1995a:31).
- Satellite observations of Brazil in the 1970s, critical for establishing a time-line of changes in the Amazon basin, are also lost on the now obsolete tapes to which they were written (Eisenbeis1995: 136, 173-74).
- The 1986 Domesday project in the UK, has acted as a reminder that preserving the medium (eg. floppy/hard disc or tape) does not automatically assure access to the message (Darlington et al in McLeod, Hare & Johare, 2004).
- During the spring of 1996, the inadequacy of procedural mechanisms for ensuring the authenticity of electronic records became a focal point of hearings held by the Canadian Commission of Inquiry into the Deployment of Canadian Forces in Somalia. As part of its investigation, the Commission found that the National Defense Operations Center (NDO) logs which were maintained in an automated database and which contained a record of all message traffic coming into National Defense headquarters from Canadian Forces' theatres of operation were being tampered with as there were several anomalies, including entries containing no information, missing serial numbers, or entries with duplicate serial numbers. The Commission concluded that NDOC logs were not reliable record of transactions at the operations centre either for present investigations or future researchers (Duranti, 1999).

The above examples prove that electronic media can be more sensitive and fragile than paper and are also susceptible to obsolescence. Both hardware and software are constantly upgraded, and records created using earlier technology become unreadable. Electronic documents and data are usually easy to delete, and can be just as easy to amend or update. Both the survival and the readability of records can easily be endangered in the electronic environment.

Even when records survive, and can be read, further challenges remain: can the particular record that is wanted be found? Can it be read and understood? Can the user be sure of its authenticity? "Divorced from the controls associated with paper-based filing systems, an electronic record may convey little meaning to those who need to use it, as there is often no visible evidence of the context in which it was first created" (McDonald, 1998). If a record is required in legal proceedings, it may also be necessary to prove that it is genuine and complete, and that it has remained secure from deliberate or accidental amendment. If electronic records have not been managed effectively, such proof will probably be impossible to provide (Crockett & Yeo, 2004). Thus designing and building systems that ensure the survival, accessibility, availability and integrity of electronic records is a challenge that every record keeper and organization needs to meet (Barry, 2003). However, the record keepers have not necessarily been made aware of their responsibilities (McLeod, Hare & Johare, 2004).

In order to face the challenges, the different record keepers need to be made aware and informed of their roles and responsibilities in regard to ERM. They need to be educated and trained afresh. Empowered creators and users need to learn about their new roles and responsibilities. They need to understand the methods of managing the records they create and/or use; records professionals (records managers and archivists) need updated knowledge and skills necessary to meet the new challenges; IT and other systems administrators need to understand the fundamentals of records management; and senior managers/administrators need to appreciate their role and responsibility for supporting good records management practice and its relationship with risk management, corporate governance and competitive advantage (McLeod, Hare & Johare, 2004).

### **The Purpose of Education and Training on ERM**

Johare (2001) wrote that, as a result of the changing nature of records due to use of IT in information work, the national archival institutions, institutions of higher learning and professional organizations have been attempting to develop better education and training on ERM.

Similarly, Millar (1998) suggested that there has been an increased emphasis on the education and training of archivists due to their changing work practices related to the handling of electronic records. The archivists' work performance on electronic records have a direct impact on the preservation of electronic records over time. The goal of improving the performance of the archivists as keeper of the nations' memory is to create education and training that serve the purpose of providing the archivists knowledge and skill on electronic records so that they can improve their job performance. Fredrikson (2002), Katuu (2003) and Menne-Haritz (2003) suggested that archivists must be equipped with knowledge and skills pertaining to professional techniques of preservation and providing access for electronic archives.

Mariani (1999) listed four reasons for designing a suitable education and training programme for the archivists and administrators: "(a) to improve job performance in electronic environment, (b) to identify specific professional development to increase needs, (c) to have a better grasp of technical matters related to the handling of electronic records, (d) to facilitate vocational training on ERM. On the other hand McDonald (1998) argued that administrative demands for accountability has led to the need for the development of education and training that should be focused on the records practitioner's ability to manage electronic records to ensure their integrity, reliability and authenticity. In Tyacke's (1999) term education and training of public administrators, modern archivists and other information specialists serve the following purposes: improving performance, enhancing knowledge and skills, preserving materials in electronic format, and effectively delivering these materials to the public.

Pederson (1996) reported that the purpose of the University of New South Wales' records management programme is to promote recordkeeping professional and personal growth and development. According to the ICA Committee on Electronic Records (1997), education and training on electronic records should be used to support and enhance the professional growth of archivists as preservers of the nation's memory.

According to Turner (2003), the purpose of education and training on electronic records is twofold. Firstly, it serves to provide knowledge and skills on job performance. Second, it can be used to develop competency and improve job performance. On the other hand, Laeven (1999) listed the following objectives of the Five Day Seminar Cycle (FDSC), an electronic records education and training programme designed by the Netherlands Archives School for senior records managers and archivists in the public sector.

- (a) to support the shift from the traditional role of the records managers and archivists to a new role; and
- (b) to promote the development of a new pedagogical concept.

Laeven added that education and training on electronic records is intended to develop the records manager and archivist into a specialist who is engaged, from the earliest possible moment, in defending the interests of recordkeeping and archiving in the company of information, organization and IT specialists, who are generally not concerned with records. King (1999) listed two types of education and training for records management practitioners: (a) continuing vocational education (CVE) to learn new skills and techniques in records work processes, and (b) focused records management education and training at the managerial as well as other levels within the organization.

Ngulube (2001) listed strategies that should be utilized by records educators when designing education and training on records management: (a) the development of guidelines and standards that suit the indigenous environment, and (b) the use of standards to enable learners to be portable as well as being able to compete in the global economy.

Thomassen (2001) calls upon the international community of records practitioners and professionals to develop appropriate strategies, procedures and standards. Katuu (2003) suggests that within the strategies, procedures and standards, the education and training strategies should be given priority to ensure that the people responsible for the record keeping infrastructure have the requisite knowledge, skills and ability to manage these records. The knowledge, skills and ability identified by the European Commission DLM Forum as constituting 'core competence' are to be transferred into effective working practices (DLM Forum 1999). This could be achieved through suitable education and training on electronic record for those who are concerned with these records.

The purpose of education and training on electronic records is two fold, namely to provide for knowledge and skills and to make room for professional growth. The first purpose is to provide the records practitioners with the knowledge and competencies that need to be developed so that they can discharge their new roles other than their traditional role in managing conventional records. The second purpose is to provide opportunity for professional growth which is deemed necessary because of their changing roles and responsibilities. As suggested, combining these two purposes will help make education and training on electronic records a meaningful process.

### **Individuals who Need Education and Training on ERM**

The second consideration found in the review of literature involved individuals who need education and training on ERM. It was interesting to observe the change that occurred in the 1990s regarding the recommendations made in the literature about who should be educated and trained in relation to electronic records.

A review of the literature on education and training on records management before the 1990s found that the only consistent recommendation was that the records managers and archivists be solely responsible for the management of records, in which the records managers were responsible for managing current and semi-current records of their organizations, and archivists were responsible for managing records of permanent value. Thus education and training programmes were aimed at fulfilling the knowledge and skills required by the records managers and archivists for the management of their records in paper format and other conventional formats such as microform and audiovisual. That recommended practice contrasted sharply with the writings that developed over the remainder of the decade. Notably there are many others who are impacted by the use of IT in every organization as computerization has made the nature of information management and recordkeeping more complex. Therefore it is of the utmost necessity for IT personnel and administrators to be educated and trained on ERM. The literature on electronic records includes some critical statements on the records managers' and archivists' lack of knowledge, skills and abilities in managing electronic records, and the need for re-education and re-training (Hoffman 1996, Erlandsson 1997, Shepherd 1997, Johare 2001, Katuu 2003, Menne-Haritz 2003, Turner 2003, JISC 2003, McLeod et al 2004).

Katuu's (2003) analysis of education and training of record practitioners in African countries suggests that most of the Archives are not thoroughly equipped to function in the modern information era, as electronic records require individuals knowledgeable in archival practice and theory, and with have a specialized knowledge of computers and related technology. He has even proposed standard education and training for government records practitioners to be developed for the African countries.

Similarly, MacKenzie (2000) argues that reforms in work practices call for skills, and require records managers and archivists to have a firm grasp of electronic recordkeeping so that they can carry out their responsibilities effectively and in accordance with standard practices.

The need for archivists as keepers of evidence to have in-depth knowledge of electronic records is evident in the statement made at the DLM Forum 1996 in Brussel. It reveals a strong pressure in support of multidisciplinary approaches and possibilities for cooperation between administrators, records managers, archivists and IT personnel/specialists, who should work together to create and implement electronic recordkeeping systems which support the business processes of organisations (Gracy 1996; McFarlane 1996; and Hoffman 1996).

Hoffman (1996) argues that the cooperation between the administrators, records managers, archivists and IT personnel within the IT policies will be possible when these record keepers share common ideas about electronic recordkeeping. They will thereby be able to cooperate in putting IT policies, which incorporate records management and preservation requirements, into practice. Where as the National Archives of Malaysia survey findings in 2002 recommended that top management, IT management and record managers in government organizations need to cooperate in framing IT policies that will enable records management requirements to be incorporated into all IT strategies and system requirements across the public sector (e-SPARK project Report, 2003).

Hoffman (1996) further suggested that this cooperation needs a framework within which the administrators, records managers, archivists and IT personnel meet each other at the conception stage in order to implement their different requirements for the information systems. The most efficient way to make record keepers understand these issues of meeting at the conception stage and of designing an information system, is to tell these key players what their obligations are and to help them meet these obligations. In this context, there is a strong link between training and the implementation of these obligations. Hoffman concludes by suggesting an integrated, multidisciplinary approach in which priority should be given to education and training of the key players mentioned above concerning electronic records and strategies to be followed and the importance of building partnership between the various key players and stakeholders.

The argument in favour of building partnerships and working together is also advanced by Granstrom (1999). He notes that records managers and archivists must work closely with IT personnel such as data administrators and system designers, as the latter are responsible for designing, implementing and maintaining systems which include system data creation and data transformation. They also design data dictionaries as tools to hold documentation relevant to archival requirements such as appraisal criteria, provenance data, contextual information, audit trail, access restriction, etc. In order to conform to requirements for the creation, capture and maintenance of records, information technology managers and IT personnel must have clear understanding of the concepts and principles involving records management, as they are the experts within the government who can advise on how technology can be used to support electronic record keeping requirements. McLeod, Hare & Johare (2004) agree that common understanding between record keepers on electronic records is crucial for the development of credible electronic records programme across organisation. However the record keepers in question must first of all understand their roles and responsibilities.

The ISO standard for records management (ISO 15489, 2001) spells out the range of roles and responsibilities that need to be “defined and assigned, and promulgated through out the organization so that, where a specific need to create and capture records is identified, it should be clear who is responsible for taking the necessary actions”. Therefore, in addition to everyone in the institution as individuals having to take responsibility for records management, the groups identified as having particular roles and responsibilities include records management professionals, senior managers and executives and systems specialists/administrators. Each of these categories has its own combination of responsibilities but some are shared (Hare, 2003).

The literature has clearly indicated a desire to have the key players other than the records managers and archivists to be educated and trained on electronic records. Considerable suggestions have been made of the critical need for IT personnel and administrators to be involved in the creation and maintenance of electronic records and building partnerships between these key players emerged as an important issue.

### **Education and Training on ERM world wide**

Yusof and Chells' (1998) survey on the worldwide approaches to education and training in records management reveals the lack of standardised course syllabi in universities worldwide.

The most comprehensive survey on education and training on records and archives is the ICA/SAE survey published in August 2002. Even though only 65 institutions from 23 countries worldwide responded to the survey, the work reveals the latest situation pertaining to education and training on records and archives inclusive of electronic records as explained below. The ICA/SAE survey findings as explained below have been published in the Directory of Archival Education and Training Institution (<http://www.ica-sae.org>).

#### **a. Education and training on ERM in developed countries**

Academic institutions of higher learning have played a significant role in delivering educational and training programmes on ERM in developed countries such as Australia, Canada, Europe, UK and US. ERM initiatives within the records management programmes in higher education in those countries have taken a variety of forms: accredited programmes, flexible modular programmes and distance learning; as well as traditional face to face classroom teaching which remains the most common mode of delivery.

In Australia, education and training on ERM was established on a strong belief that records practitioners act as educators, advisors and consultants who assist agencies to meet their recordkeeping roles and responsibilities in the era of electronic environment, public accountability, freedom of information

and knowledge-based organizations aimed at supporting ISO 15489 (Pederson, 2001). Education and training on ERM is provided by Curtin University of Technology, Edith Cowan University, Monash University and University of New South Wales within their existing records and information management courses.

Presently in Canada records management courses have evolved with great energy, enthusiasm and creativity, in line with the dynamism of dealing with electronic records. Other than embarking on the harmonization of education and training in records management, librarianship and information sciences as part of the philosophy which characterizes the records management education and training in Canada, the development of research into ERM is another significant component of the philosophy behind the programmes offered by the various universities. The InterPARES project based in UBC brings together archivists from universities and archival institutions, along with computer and information scientists and engineers from around the world in a concerted effort to define the archival requirements for authenticity on the basis of archival science and diplomatics. Other than integrating the research findings into existing curricular frameworks, researchers of the project developed and pilot tested continuing education and training products such as workshops, distance education courses, annotated bibliographies, glossaries, and potentially also case studies on ERM that were made available for use by academic programmes and professional associations and institutions in their continuing education programming (Duranti, 2004). Issues on electronic records have also led to the introduction of specific modules on ERM at the University of Montreal and University of Toronto.

In the UK, ERM subjects are incorporated within accredited courses on archives at the University of London (UCL), Liverpool University (LU) and University of Wales (UWA) for their certificate, diploma and masters post graduate programmes. By comparison, Northumbria University (NU) has remained the first and to date the only UK school to teach records management from the perspective of information rather than archives management. It has thereby developed strong areas of concentration and specialisation on ERM in their MSc Records Management by Distance Learning and Advanced Diploma in Records Management Lifelong Learning. The subjects focus on organizational record keeping as practice in different situations, with electronic record-keeping constituting the main core knowledge on ERM. The subjects seek to deliver the knowledge and understanding required by those intending or already in employment as records managers and to do it in a manner that, where possible, corresponds to the electronic environment.

NU with LU and the UK National Archives have also established the rm3 programme, a flexible and modular Diploma and Certificate in Professional Studies: Records and Information Management which include modules on ERM. This partnership offers a unique collaboration and the first of its kind in the UK which provides an educational opportunity for the various record keepers across government to develop their records management expertise and to acquire a university accredited qualification. In addition NU has also developed a joint programme with AIIM - Information Management University (IMU) - to provide training on ERM for different types of clients in the UK. The serious initiatives have put NU at the forefront of ERM educational and training development.

NU has also designed and developed records management education and training programmes for different levels of staff in other organizations. This includes operational administrative staff to strategic managers in, for example Irish universities and the British Broadcasting Corporation (BBC), records professionals on the MSc Records Management (by distance learning), all practitioners at either tactical or management level, and a combination of three key stakeholders groups i.e IT, administration and archives and records management in the European Leonardo funded project, e-TERM (Education and Training in Electronic Records Management). These programmes have used different pedagogic models including face to face workshops, directed study, distance learning and the use of e-learning environment (Hare, 2003).

There are also several other examples of education and training providers on ERM in Europe. In contrast with the development in other parts of Europe, the present education programmes in universities in Bulgaria such as Sofia University and South Western University offer ERM subjects as part of archives and records management courses in their diploma, degree and PhD in History. On the other hand the Bavarian Archives School and the Marburg Archives School in Germany are offering courses for the various civil service career levels of staff employed by the archives administration inclusive of subjects on ERM in their diploma and degree courses on archival science. The structure of the programmes have been developed in cooperation with professional archival organizations. Similarly, the Mid Sweden University and University of Tampere in Finland have also developed programmes specialising in records management, but with concentration on electronic recordkeeping in modern organizations.

In the USA, only two universities offering courses on electronic recordkeeping and digital preservation responded to the ICA/SAE survey. In this case both the University of Michigan and University of California offered ERM as separate modules. The Schools of Information in the respective universities offer an integrated, multi-disciplinary degree (Master of Science in Information) with an optional specialization on ERM. Distinguishing features of their programmes include emphasis on modern records and modern technology inclusive of electronic recordkeeping, digitization, and on-line access systems.

Other than academic courses provided by the various universities, there are also training courses provided by the universities and other organizations to provide competence and skills for the record keepers to manage electronic records as part of their professional development. The various universities in Australia, Canada, Europe, UK and USA run regular training courses on ERM for their existing government record keepers. For example, UCL in the UK runs a summer school and short courses in archives and records management inclusive of specific topics on ERM to meet the needs of a variety of clients and in response to major developments, for example the impact of new legislation such as the Freedom of Information (FOI) Act and the development of ISO 15489.

Early records managers and archivists in the national archives received on-the-job training to learn how to set up records programmes for the government. This has also largely remained true for current records management professionals in the national archives and in many state archives. In a number of countries, archival institutions organize their own education and training programmes for the benefit not only of archivists and records managers, but also civil servants in general for whom a knowledge in this area is of vital importance in ensuring an orderly and efficient office administration.

Apart from the universities and archival institutions, professional bodies such as the International Council on Archives (ICA), the International Records Management Trust (IRMT), society of archivists, records management associations and other related professional organizations, have also developed training opportunities on ERM in the various countries. For example in UK, the Society of Archivists and the Archive-Skills Consultancy deliver in-service training to people working as records practitioners at all levels without formal qualifications ([www.archives.org.uk](http://www.archives.org.uk) [07-December-2003]). On the other hand, ERM training modules have been developed by IRMT specifically for the developing countries in Africa and Asia. Training specialisation featured include managing digital records and electronic recordkeeping. In the USA and Canada, the central records management association, the Association of Records Managers and Administrators (ARMA), have also been active in promoting education and training on ERM as part of records management programmes. ARMA with over 10,000 members and over 100 local chapters, is active in promoting educational efforts through conferences, workshops, and continuing education programmes [[www.arma.org](http://www.arma.org) (30-November-2003)]

#### **b. Education and training on ERM in Asia**

In many countries of Asia, including South East Asia, education and training provided by the various universities is characterized by the traditional focus on archival management with emphasis on conventional records management. According to the response received by the ICA, only four out of the 23 institutions in China offering records and archives programmes also offer subjects on ERM. They are Zhejiang University, Beijing Union University, Soochow University and the Zhengzhou Institute of Aeronautical Industry Management. These four universities offer subjects on electronic recordkeeping through their school of archives, library and information science. By comparison none of the archival schools in Japan namely the National Institute of Japanese Literature and the National Archives are offering ERM subjects. This is due to the fact that their area of specialization limits their role to the management of historical manuscripts.

There is little evidence of concern for education and training of record keepers in managing electronic records in India. Even though the National Archives of India has been providing education and training for archivists from within and outside the country since 1943, the curriculum content remains traditional in approach due to the lack of local expertise and facilities to deliver education and training programmes on ERM ([www.nationalarchives.nic.in/diploma.html](http://www.nationalarchives.nic.in/diploma.html) [09-July-2003]).

There are several universities in Indonesia providing instruction in records and archives such as the University of Indonesia in Jakarta, University of Depongoro in Semarang and University of Hasanuddin in Ujung Pandang. ([www.ui.ac.id](http://www.ui.ac.id)[07-March-2005]) ([www.fib.ui.ac.id](http://www.fib.ui.ac.id) [15-December-2004]) ([www.depongoro.ac.id](http://www.depongoro.ac.id)[18-June-20015]). In addition the National Archives of Indonesia runs in-service training for government records managers and archivists. However the existing educational programmes are limited to diploma courses in archival management emphasising conventional records management. Apart from the local education and training programmes, it is current practice to send experienced archivists abroad for advanced training in specialised areas such as ERM and the preser-



vation of information ([www.arkib.gov.my/sarbica](http://www.arkib.gov.my/sarbica) [03-January-2005]). They are being sent to countries like Australia, Canada, the USA and the Netherlands. The aim is to train specialists and also to improve the local education and training programmes on ERM ([www.indosat.net.id](http://www.indosat.net.id) [27-August-2005]).

In other Southeast Asian countries such as Burma, Brunei, the Philippines, Thailand, and Vietnam, education and training programmes in the area of ERM are mainly for archivists in general. The literature reveals that there are lack of organised, and formal training programme on ERM for archivists. Whatever training there is, has been sporadic and irregular, mostly in the form of on-the-job training ([www.arkib.gov.my/sarbica](http://www.arkib.gov.my/sarbica) [03-August-2005]). Some members of the archives staff were sent to the National Archives of Australia, Canada, UK and the USA (NARA), for short courses and attachment on ERM.

In Singapore, the Nanyang Technological University has developed a post graduate programme on information management emphasizing ERM at the Masters level in the School of Communication and Information ([www.ntu.edu.sg](http://www.ntu.edu.sg) [15-August-2005]). The MSc (Information Studies) programme offered by the University for both part time and full time students aims at training graduates in any discipline into a new breed of information services and systems professionals who are able to develop and deliver value-added information products and services in all types of information environment. The course is inter-disciplinary and draws upon the fields of library and information science, information management and computer technology. The broad range of subjects offered ensures ample opportunities for students to tailor the curriculum to suit their particular requirements or to specialize in one of five areas of concentration namely, Library and Information Science, Archival Informatics, School Media Resource Management, Information Management and Information Systems. Although there is no clear mention of records management, it is obvious that records managers might need to adopt the overall skills to their particular requirements ([www.ntu.edu.sg/sci/is](http://www.ntu.edu.sg/sci/is) [15-August-2005]).

### **c. Education and training on ERM in Malaysia**

In Malaysia records and archives education and training is being provided by the Faculty of Information Management of the University Technology MARA (UiTM), the only institute of higher learning in the country offering such academic programme. The Faculty has undergone changes from time to time in tandem with employment prospects of the country. Currently, the records and archives courses are aimed at preparing the present generation of information managers who are needed to advance both the country's information policies in relation to IT, as well as the electronic government (EG). ERM is being offered as a separate module in the degree and masters programmes as qualified records and information managers are required for the successful implementation of the EG. However, the faculty is experiencing lack of experienced academic staff to deliver ERM subjects, and lack of facilities prevents the development of research initiatives in this area of concern ([www.uitm.edu.my](http://www.uitm.edu.my) [20-August-2005]).

The National Archives of Malaysia has remained the only provider of records and archival training for the government records practitioners including those from the third world countries in Africa and South East Asia. However existing training programmes provided by the National Archives as in other Southeast Asian countries are limited to the management and the preservation of conventional records. Due to the lack of local expertise, experience and facilities to run courses on ERM, government archivists and records managers currently are sent abroad to acquire education and training on ERM (NAM training document 2003). Foreign experts on ERM were also brought in to deliver and conduct in-service training such as workshops, seminars and conferences by the National Archives as part of the e-SPARK project. One of the project aim and objective is to develop guidelines for the training of record managers and archivists ([www.arkib.gov.my](http://www.arkib.gov.my) [30-May-2005]).

Other professional organizations, namely the Malaysian Institute of Management and the Library Association of Malaysia have also initiated programmes that require the use of foreign expertise in providing training on ERM for their respective members ([www.mim.edu](http://www.mim.edu) [07-May-2005]) ([www.pnm.my/ppm](http://www.pnm.my/ppm) [07-May-2005]). This situation implies that there is awareness of the need for education and training among record practitioners expected to assist the government to realize the EG initiative.

In Malaysia as in other parts of Asia, this matter has to be given serious attention, as archivists have to be equal to the responsibilities arising from the existence of electronic records and the implementation of EG in related countries. The question is whether the education and training that those involved in ERM have so far acquired is adequate to meet the challenges.

Education and training for the records manager in the Malaysian government, as suggested by the literature review showed that training for these groups of personnel is often provided by annual courses sponsored and organised by the Training and Career Development Division of the National Archives of Malaysia or a specialised records management course sponsored and organised by the respective departments conducted by local and international records management consultants. However the training continues to emphasise the management and the preservation of conventional records (National Archives of Malaysia Archivists Training List 2004).

## Conclusion

In advanced countries, initiatives on education and training for records practitioners and other key players on ERM are provided by the universities, professional organizations, private consultants and individual archival institutions, or through collaboration between the various organizations. However, evidence from the review of literature suggests that in many countries especially those in Asia, the present situation is characterized by a lack of local expertise, experience and facilities. As a result records practitioners are sent to developed countries to acquire knowledge and competency on ERM or foreign experts are brought in to conduct in-service training for government record keepers.

Several examples of education and training programmes developed in Europe and UK for administrators, records managers, archivists and IT personnel, to acquire knowledge and skills on ERM together under a common program, have been identified. These are the rm3 and IMU training programmes in the UK, e-TERM in Europe, the FDSC in the Netherlands.

Literature on ERM supports the notion that for the successful implementation of any ERM system or ERM program, the knowledge and skills of administrators, archivists, IT personnel and records managers as key players in record keeping is vital. These key players need to have thorough grounding in the subject matter of ERM before they are able to fulfill their new roles and responsibilities.

The literature supports the view that common understanding among those involved in ERM, based on education and training is crucial to developing a credible records management programme across organisations. This means education and training should provide the platform for partnership building between the various key players under a common education and training program. If this is the case, for many record practitioners, these needs entail a significant amount of relearning, and this cannot be achieved through the kinds of in-service training methods now used, most often in Malaysia and in other countries in Asia, as the changes in work practices demand deeper understanding of electronic record keeping as suggested in the literature review.

The writer concludes that, there is an urgent need to develop guidelines on education and training tailored to the needs of the various key players as stated in ISO 15489 (administrators, records managers, archivists and the IT personnel) in every organisation. This education and training may provide a useful forum that will lead to building of partnerships and establishing shared responsibility for electronic records in and across an organisation.

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