DIGITAL TECHNOLOGY – UNDERSTANDING THE PROBLEMS POSED BY INFORMATION TECHNOLOGY IN GENERATING AND MANAGING RECORDS FROM A THIRD WORLD PERSPECTIVE

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Abstract

Since the introduction of information and communications technologies (ICTs) to carry out transactions within both government circles and organizations, the widespread use of these technologies has experienced a phenomenal increase. In fact, it is rare to find any organization or government institution today that does not make use of digital technology at least in one way or another. The reasons for adopting ICTs are based on the advantages that are associated with modern information technology (IT). On the other hand, the justification for going the IT route might be illusory. For instance, it is thought in some circles that ICTs will solve every information problem within an organization, but is not always the case. Though enormous benefits accrue to institutions that use digital technology to transact their businesses, digital technology can be a nightmare, given that electronic records are more complicated and delicate than paper based systems.

Using technology to create records

Techno-phobia and paper mindedness in an electronic environment are only two of the many phrases that have been coined to partly explain the very low rate at which attention is being paid when it comes to managing electronic records particularly in developing countries. Electronic records are, simply put, records that contain machine-readable information and cannot be read without the relevant software and hardware. Examples of electronic records include electronic mail, database records and word-processed documents. It has been noted that government is the largest collector and disseminator of records and documents in Sub Saharan Africa (SSA).

Ngulube (2001) points out, traditionally, the bulk of the information has been paper base, however, many governments, both in the developed and developing worlds, as well as organizations are increasingly taking advantage of new technologies to conduct a large amount of their businesses electronically. According to Kowlowitz and Kelly (1997), governments and organizations have implemented technologies such as word processing applications, intra-nets, email, Electronic Data Interchange (EDI), e-commerce and data imaging to support paperless transactions. The Committee on Electronic Records of the International Council on Archives (ICA) (1997) observed that the evolution of information technology falls into three overlapping phases: the mainframe era, the era of the Personal Computer (PC), and the networking era. According to the ICA, each succeeding innovation in information technology (IT), made new uses for IT feasible without necessarily displacing older systems. This means that depending on when computers were introduced into an organization, archivists and records managers may encounter electronic records that were accumulated under any of the phases. And with the acceleration in networking and the development of paperless transactions, archivists and records managers have become increasingly concerned about the long-term preservation of electronic records.

Technological changes are obviously having a substantial impact on organizational abilities to create, manage and use records to support legal responsibilities and business needs. The new archival and records management concerns arise out of both the capabilities of the new technologies and the ways in which these new technologies are being used in organizations particularly as far as their reliability and processibility are concerned. Therefore, there is a dire need for a trusted system for managing electronic records. A trusted electronic records management system is,

> a type of system where rules govern which documents are eligible for inclusion in the recordkeeping system, who may place records in the system and retrieve records from it, what may be done to and with a record, how long records remain in the system, and how records are removed from it (InterPARES Project 2001).

The need to manage records with a focus on digital records

Why do we need to manage and preserve our records anyway? Many reasons have been advanced to respond to this question. Among other reasons, we manage records so as to be able to preserve organizational memory as archives. Also, without records, citizens will not be able to account for their actions. Again, records are managed so as to facilitate access to them whenever they are needed. Furthermore, managing records allows us to keep them only for as long as they are needed. These reasons can be summarized in the explanation offered by the ICA (1997):

> Archives, by providing evidence of human activities and transactions, underlie the rights of individuals and states, and are fundamental to democracy and good governance. Archives safeguard the memory of mankind by preserving records of its past. In pursuing the advancement of archives, the ICA works for the protection and enhancement of the memory of the world.

It is clear from the above quotation that there are many advantages that accrue to organizations as a result of properly managing and preserving their records. But why are electronic records more complicated and difficult to handle than their paper counterparts? Why do they need special and expert care? Perhaps the answer to this preoccupation should be preceded by an observation by the Preservation Task Force of the InterPARES Project (2001). According to the Preservation Task Force of the InterPARES Project (2001), strictly speaking, it is not possible to preserve an electronic record. It is only possible to preserve the ability to reproduce an electronic record. Consequently, if there were no need to preserve records beyond the life expectancies of hardware, software and digital media, there would be no preservation problem.

Similarly, technology cannot determine the solution. It is archival and records management criteria that may determine the appropriateness and adequacy of many technical solution. The question as to “what is the best technological method for preserving electronic records” is as meaningless as the question “what is the best medicine for making people healthy?” Neither can be answered without specifying the conditions they are meant to address.

Difficulties with electronic records

Even though the principles for managing both paper and electronic records remain fundamentally the same, practically and technically, they are different. The following are some of the outstanding factors that differentiate the two forms of records, hence begging for special attention when it comes to managing electronic versions:

- Electronic records can be duplicated with ease. The similarity between copies and originals makes it difficult to differentiate between the two. Here, there is a serious security problem, if we think for instance, of the issue of privacy and evidence.
- Electronic records are strictly speaking, dependent on hardware technology. Hardware manufacturers may go out of business leaving their clients with no technical support. This means that information that can be accessed using exclusively a particular hardware package is doomed if the manufacturers go out of business.
- This also applies to software applications. Electronic records are also dependent on software technology, for instance, if the software manufacturers go out of business, their clients are likely to be left with no technical support.
- Furthermore, the hardware technology on which electronic records depend can become obsolete within a short time. New hardware products appear every few years and are sometimes not compatible with older ones. The same fate also befalls software technologies.
- Another important and delicate factor that distinguishes paper based from electronic records making the latter difficult to handle is the fact that electronic records can easily be changed with little or no trace left.
- Finally, the storage media of electronic records have shorter lifespan than paper.

The implications of some of the differences between electronic and paper-based records could have far-reaching consequences and difficulties as far as managing electronic records are concerned. In addition, very high costs involved in implementing efficient electronic records management systems should be taken into consideration (Ngulube 2003). For instance, that training of personnel in electronic environment can be very costly, as many studies worldwide have shown. According to Steve Stuckey in Harris (2003), the successful implementation of the Australian National Archives' electronic records management programme was possible because over 80% of the budget was dedicated to staff training. In that regard, the challenges posed by electronic records are significant. If any electronic records management programme has to succeed, far-reaching measures have to be implemented to address these problems.

For instance, looking at the challenges posed specifically by hardware and software technologies, it is known that if one had created a text document 12 years ago using any of the most popular commercial word processing software programs, one would not be able to read it today. Even if one had kept the exact machine and software program that created the document, there is a good chance that the storage medium would have degenerated over the years.

There is little doubt that digital technology has had a positive impact in the way that

many businesses are being run today. Unfortunately, many governments and businesses are hardly adequately informed about the challenges that they stand to face by opting to conduct their businesses electronically particularly as far as managing their electronic records is concerned. This situation has even been compounded by the 'easy talk' that technology 'will solve every problem', even though little or no mention is made of those that could be created. The merit or demerit of the view about the things that technology can accomplish is beyond the scope of this paper.

My preoccupation however is at the level of preparedness prior to introducing digital technology to run one's business and generating records electronically. The fear of a possible 'exclusion from the global economy', the fear also of 'widening the gap in economic competitiveness' (Cain and Thurston 1998:13), has led some institutions into going digital not because it was necessary but because they just felt they had to. The illusion that 'all will be fine' once they go the IT route prevents organizations from seeing the bigger picture which is beset with many significant challenges.

Whether the reason that led organizations to embrace IT in running their businesses was because of need and preparedness or just the excitement of it, is absolutely immaterial if such institutions have already done so. The onus now lies with the organizations concerned to do what they have to do in order to properly manage and preserve their electronic records. For organizations that are still planning to adopt IT, a considerable amount of thinking has to be done. There has to be a conviction that it is not only necessary but, that there is readiness for it so that they can be able to cushion the challenges that come with electronic records.

Studies have shown that developing countries are entering the 'information age' from a starting point of extreme vulnerability (Cain and Thurston (1998:13). Not only do they face huge obstacles in affording and obtaining access to the new technologies, in many cases their existing paper records systems – the foundation for automating are in a very poor state or even collapsed. Automating a chaotic system is obviously likely to create more chaos. Far from being in a position to take advantage of new technology, developing countries face formidable difficulties in attempting to build upon unstable foundations. Public sector records, which are the most fundamental source of government information, are only just beginning to be managed as a strategic resource, and there are still widespread problems in retrieving and storing them. Considerable amount of effort has to be invested in solving these old-standing problems before embarking on even more complicated ones that are presented by electronic records.

Way forward

Given that today more than ever before organizations are using digital technologies in conducting their businesses, perhaps there is a need for a reminder about the implications to records that are being created. It is obvious that digital technology can increase an organization's efficiency through many ways such as the ability to provide records to more clients in a clearer format and a timelier manner while saving money on record storage and staff. Digital systems can also greatly reduce the amount of physical space required to store paper records.

However, while digital technology promotes broad and rapid access to records, it also carries the danger that those records and the information contained therein can be easily lost if they are not properly taken care of. It is imperative for organizations to ensure that electronic records are not rendered unusable before their retention and preservation requirements are met (White 2001).

While acknowledging for example, that records management software can solve many electronic records managing problems, top administrators must accept responsibility for ensuring that their agency's records are properly managed. Without their support, according to Wojcik and Dionne (2003) sophisticated software tools will be useless. Only when sound and comprehensive records management is incorporated in government and organizations do citizens and employees have an opportunity to achieve better and accountable governance based on accurate, authentic and reliable evidence found in well-managed records.

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