Prison breakthrough: use of information systems in correctional facilities

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Abstract

There is a consensus among researchers that information systems brought and continue to bring a fourth revolution in organisations around the world. These systems made an immense contribution by incorporating various functions into one system, thus enhancing the capabilities of organisations with minimum work effort. Correctional facilities have also made the break to add information systems in prisons for better decision-making. This study utilised literature review to critically examine the use of information systems within the correctional facilities in African countries with a view to determine how the resultant records from the system are managed. Findings reveals that information systems used in prisons have simplified the flow of information and the records management functions in correctional facilities in some African countries. However, the majority of correctional facilities in countries such as South Africa are still using the traditional method of records management mostly because of financial constraints and lack of support from the government. The study recommends that correctional facilities should consider exploring the possibility of benchmarking and collaborating with other key sectors for effective implementation of information systems and management of resultant records.

Keywords: information systems, correctional facilities, records management, prisons, Africa

1. Introduction and background

Correctional facilities serve as institutions of incarceration that are responsible for detaining individuals that have been found guilty of a criminal offense, and as facilities that house a large number of prisoners and provide other programmes (Muntingh 2010). They are basically facilities that keep prisoners in confinement until they have finished their sentence. Each and every prisoner thus has a record or file containing his or her personal information and in which their behaviours are recorded while in prison. Furthermore, correctional facilities have various departments and programmes that support its working functions and these facilities rely on records management to keep track of records from different departments. Record-keeping in correctional facilities is important to ensure that no person may be held in a prison without a proper record of their doings and to ensure that the right people are admitted and released at the right time. Records keeping is thus a fundamental activity of administration as, according to the International Records Management Trust (1999), there can be no rule of law and accountability without records management. Therefore, when a prisoner is admitted to a correctional facility, the administration must record important information such as identification information, photographs and fingerprints, warrant information authorising admission, cell and block allocation, as well as

reasons for arrest. Such information is managed through a records management system which could either be manual or automated. However, many correctional facilities are using the manual system of managing their information instead of information systems.

According to Oye and Inuwa (2015:13) the term information system is specific application software that is used to store data records in a computer system and automates some of the information processing activities of the organization. In a general sense it is a system of people, data records and activities that process the data and information in organization and it includes the organization's manual and automated processes. In a narrower sense Barnwal, Pathak and Pathak (2012:35) aver that this technology (information systems) provides convenient means to keep record of details of individuals and their association with different programs in the prison. They also help with the sharing of information with different departments within the prison which in turn help in proper rehabilitation of prisoners.

Information systems are essential for the effective management of any correctional system, and this is true for two critical reasons. Firstly, to meet human rights obligations to ensure that there are adequate records of prisoners detained to make sure that individual prisoners are not lost in the system. Secondly, correctional facility systems with weak information systems are poorly placed in terms of being able to review or monitor the overall profile of the prisoner population. Without such information, any attempt at strategic planning and reform efforts, including the design of adequate alternatives to imprisonment, would be impossible (Chin 2010:94). Information systems have undoubtedly simplified some prison functions; however, there is still a knowledge gap in terms of managing the record resulting from such a system.

2. **Problem statement**

The overarching problem is that majority of correctional facilities in Africa still rely primarily on the traditional system of record-keeping for managing records, and they are struggling to manage records resulting from such systems. Furthermore, as observed by Ahishayike, Taremwa and Omulo (2017:46), the majority of correctional facilities in developing countries still depend on manual systems to create, store and retrieve information on prisoners. A manual system is time consuming as it takes very long to complete a single transaction; and there are issues concerning the loss of records, data redundancy and the security of records. The continuous use of the traditional system by correctional facilities is also highlighted by Kathuria and Porporino (2015:2) who assert that most corrections and prison systems in developing nations have not yet been able to join the information age and they continue to rely on traditional paper-driven, resource-intensive, unreliable, insecure and difficult to access information. Manzar (2014:3) and Arends (2016) highlight a common issue which has been identified particularly in South Africa, which is the delay in parole for prisoners that leads to them being imprisoned for longer than they should because of maladministration and system. There have been other records management issues that have shown a need for automated systems in correctional facilities, Clarke (2009) asserts that the Arizona jail facility had to pay millions in jury awards, settlements and legal fees in lawsuits involving prisoners' deaths due to medical neglect. Poor medical and health records management

and understaffing were therefore identified as the major causes of the breakdown in medical treatment.

Evans (2015) also identifies a case where a prisoner was accidentally freed from prison due to a record keeping error, and it was discovered after a week that a mistake had been made in handling the prisoner's records that had led to him being allowed to walk free. The researchers thus sought to examine literature information systems that have been implemented in correctional facilities with the purpose of determining their impact in the prison environment from a records management perspective. This study aspires to highlight the importance of information systems from a records management point of view and how these systems have simplified records keeping in the correctional environment. The following objectives were formulated to address this research problem:

- To examine the role of information systems in correctional facilities.
- To determine types of information systems used for records management functions within correctional facilities and their impact.
- To establish the impact of information systems on records management in correctional facilities.

3. Literature review

According to Kathuria and Porporino (2015:4), management information systems have made considerable strides in correctional facilities over the last several decades. Virtually every modern correctional facility has implemented some form of information system, and over time, many of these systems have undergone some process to upgrade both hardware and software. These systems are the information backbone of correctional services and make prison management effective, and they provide ease of retrieval of not just important descriptive information such as population counts, decision-making within correctional facilities, risk classification of offenders, assignment to needs-based rehabilitation programmes, monitoring implementation of new policies, and important planning and strategic analysis (Kathuria & Porporino 2015:4). According to Brenman, Wells and Carr (2013:1), a precondition of effective management support in the prison setting is having access to accurate, high-quality data that can be presented in the appropriate formats. For most correctional facilities, this requires an information system that is adequate to support all routine inmate-processing activities.

3.1 The role of information systems in correctional facilities

Wahome (2011:6) states that information systems serve as a link between the functions of an organisation, and assist the management to evaluate and improve performance, and increase data processing and storage capabilities. These systems have the capacity to reduce data redundancy and inconsistency while increasing accuracy of the data; for example, they can calculate the prisoners' release date based on sentence length (Wahome 2011:8). Information systems also allow prisoners' records to be stored in a central database with frequent backups to ensure that data is secure and can be easily recovered in case it gets lost. The systems are able to record and monitor

any actions performed by the user with regard to creating, editing or terminating records and can be arranged to control and restrict access to ensure the security of information. These systems can also assign a number to each prisoner making them easily identifiable. The prison IS interface thus allows the user to access other prisoner information using their specific details, which allows much quicker response time when dealing with critical incidents or information requests at regional or head office level, rather than constantly having to go through piles of paper records (Kathuria & Porporino 2015:6).

As noted by Kathuria and Porporino (2015:7), information systems are able to frequently produce automated counts and monitoring reports on a regular basis and can also be automatically scheduled to provide automated alerts, which mean they can remind the officials if a prisoner has been scheduled for a court appearance, medical appointment, transfer or a family visit. Correctional facilities can effectively manage the progress of a prisoner all the way through their sentence and after their release by using management information systems (Kathuria & Porporino 2015:7). These automated systems are more secure, reliable, fast and user friendly, and will go a long progressive way in alleviating challenges associated with manual processing. Information systems also provide much better information security, availability, accessibility and advanced tools to manage all types of biometric information, as noted by Abeng and Adesola (2012:66). It is therefore evident that these systems play a significant role in correctional facilities in terms of managing records, data capturing and collection, storage, information processing and the distribution of information. The efficiency of information systems is thus very influential for prisoner records as they ensure that records are safe, accurate and easy to access which in turn ensures justice for prisoners as well accountability and transparency for the correctional facility. It was further noted that in most prisons, only senior managing officers had access to a PC and e-mail. However, "even where PCs were available, prisoner records were main-trained in a manual database" (TAPSCOTT 2006:18). Again it was noted that, "system presents complications when it comes to tracking an offender's progress and when linking information from other parts of the prison" (TAPSCOTT 2006:18).

3.2 Information systems used in correctional facilities

For effective records management functions in correctional facilities, information systems need to be developed to ensure that correctional and prison records are properly stored and well managed. However, they may differ in design specifications, they have a common function, which is to manage the flow of information and storage. The following are types of information systems used in correctional facilities:

3.2.1 Integrated Prison Management System

The integrated prison management system (IPMS) was introduced in India by the government of Jharkhand as a means to improve the administration functions of the correctional facilities and to enhance the efficiency, transparency and productivity in terms of security and monitoring. The IPMS is secure and has developed the maintenance of correctional records and searching operations, and has simplified the processing of electronic prisoner records, thereby decreasing

paper records and ensuring high-speed services with low costs at greater efficiency. Nevertheless, the system has its own limitations such as that access by the government is not easy because the system is centralised. Moreover, according to Ahishayike, Taremwa and Omulo (2017:148), the IPMS is not programmed to trace records concerning visitation activities in the facility which might be needed in future for investigation or reference purposes.

3.2.2 Prison Management System (PRISM)

PRISM is an initiative developed by Goa electronics limited, a company in India, from May 2008 to February 2009, and it was implemented to provide a system that would ensure efficiency in all aspects of prison management and connectivity across all facilities in order to foster administrative efficiency (Manzar 2014:1). As noted by Manzar (2014:6), the system was introduced as it would overcome the manual system where information, numbers, figures and calculations are concerned and would also support the prison staff by enhancing efficiency in records keeping and administrative work. It is an efficient Information and Communication Technology (ICT) system for prison management and administration with the purpose of ensuring a simplified and effective mechanism for the benefit of the prisoners and prison department. It was implemented to also bring forth a system that would provide absolute transparency in the working functions, ensuring precise implementation of rules and laws, as well as simplifying the readiness of data for relevant authorities in order to facilitate reliability and precision in decision-making. PRISM is installed in five different facilities in Goa, all of them networked jointly with additional video-conferencing for all the correctional facilities, and the technology of the system comprises of hardware, software and platform elements (Manzar 2014:5). It is designed to provide up-to-date and current information on every aspect concerned with the management of the correctional facility such as personal property of prisoners, visitation movements, medical and mental health information, reason for arrest and case information, parole, remission, furlough, and prisoner movement and transportation (Manzar 2014:5). PRISM is also designed to have a centralised database with around-the-clock availability in all government offices, prisons and judicial lockups and is accessible to all employees. PRISM significantly enhanced the administration across all facilities as it facilitated the accurate, correct and timely networking of data, and significantly reduced time-consuming errors in records and registers of prison-related activities. Moreover, it minimised paperwork, while ensuring immediate and effective accuracy of data calculation (Manzar 2014:9). The system has simplified records keeping across different prison functions; for example, the prisoner reforms module can effectively produce a complete history sheet of all programmes in which the prisoner participated. Moreover, the prisoner's medical management module is efficiently keeping records on the medical history of the prisoners as well as the history of medication. The system significantly enhanced transparency with regard to the information made available to prisoners resulting in prisoners being able to access instant information on wages earned, prisoner's personal property, personal cash as well as information for parole, furlough, bail and transfer applications (Manzar 2014:10).

3.2.3 Web-based Records Management System

A web-based records management system was designed for the Kisoro prison in Uganda after it was discovered that there was a need for a computerised system that would manage the circulation of critical information and prisoner records. previously, the Kisoro prison has been using the paper-based system which caused many delays in the retrieval of information as some of the information was misplaced and lost. This was therefore a clear indication that there was a need for a web-based system that would keep and retrieve information (Ahishayike, Taremwa & Omulo 2017:153). The web-based records management system was designed using a database management system known as the relational database management system (RDMS) because of its ease and ability to store, retrieve and manipulate different data types (Ahishayike, Taremwa & Omulo 2017:153). The system stores prisoner information such as personal details, crime committed, cell number, health status, sentence length and time served, and allows the administrator to perform various manipulations on the records stored in the database, such as to compile new records, view, and edit records, and erase records that are no longer necessary. Furthermore, the system offers six interfaces or operations, which are the login operation, the operations after successful login, the add information operation, the view available information operation, the update equipment operation and the system verification operation. The system also contains a variety of system manipulations known as CRUD, which are create or add information, read or view information, update or edit information, and delete information (Ahishayike, Taremwa & Omulo 2017:154). However, all the forms for inputting information have JavaScript, which does not allow the administrator to submit duplicate information and save empty forms in the database (Ahishayike, Taremwa & Omulo 2017:155). Therefore, a web-based records management system is very user-friendly because of its simple user interfaces, and it significantly reduces data redundancy because it does not allow duplicate information. Furthermore, the web-based records management system facilitates decision-making by the prisoner management because records and other actionable information can be retrieved much quicker and with less effort, and it can be accessed at any location provided there is an internet connection. The system also fortifies the safety and security of prison records as user authentication is required to access information in the system database, and it records all the actions of the user that is logged on at that present moment, which makes it easier to identify if information has been tampered with (Ahishayike, Taremwa & Omulo 2017: 156).

3.2.4 Offender Management Information System

Offender Management Information System (OMIS) is a web-based electronic data management system developed by Namibian correctional and prison services that allow correctional officials to electronically store and retrieve important prisoner details from the day they are admitted to the day they finish their sentence. OMIS was implemented across 13 facilities in the country from July 2013 and the entire population of the facility in Namibia is currently on the system, and this population currently stands at about 4 500 prisoners. The system is structured in a modular format, and there are 11 core modules provided by the system, which are admission, reception and assessment, health records management, case management, rehabilitation activities, institutional incidents, visits, transfers, pre-release sentence changes and release (Kathuria & Porporino

2015:8). OMIS therefore represents an affordable solution to address the information needs of correctional systems in any developing country (Kathuria & Porporino 2015:3).

The level of sophistication of OMIS is thus realised in the fact that it stores, retrieves and analyses more complex data elements that can then generate other summary information. For example, after collecting some basic information about the prisoner, the system produces a brief but informative profile for each prisoner who is admitted. The system is able to instantly retrieve information for prisoners who are re-admitted, for sentence calculation and determination of possible conditional release dates, generating a profile of current and past criminal history, tracking of prisoners as they are moved from one facility to another, chronological recording of health-related interventions, the frequency and nature of institutional incidents and digital storage of relevant case management reports, and a record of involvement in programmes and other rehabilitative activities (Kathuria & Porporino 2015:7).

3.2.5 The integrated inmate management system

The integrated inmate management system was proposed as a conceptual design by the Department of Correctional Services in response to their ICT challenges in South African correctional facilities in 2015. This came after the general report of 2015/16 stated that the Department of Correctional Services' records for incarceration, rehabilitation and care were not reliable when compared to the evidence provided. Therefore, this called into question the credibility of crucial indicators such as the number of inmates who had escaped, died or been injured in an assault (Makou, Skosana & Hopskins 2017), and the details pertaining to admission, detention, incarceration, corrections and release into society. It was also programmed to run across the 243 correctional facilities across the country with approximately 160 000 inmates movement from admission to release from custody. According to the Parliamentary Monitoring Group (PMG) (2015), the system should also manage basic healthcare and developmental programmes, as well as visitations and visitor profiling. It is, however, unclear whether the integrated inmate management system was successfully implemented or not. However, according to the service delivery model (2019) implemented by the Department of Correctional services, there is a system that is currently under way which will address issues pertaining to the paper-based environment in correctional facilities in South Africa.

3.2.6 Prison inmate information system

The prison inmate information system has been proposed for Nigerian prisons because of the issues associated with the manual system of records management. The system is expected to provide an easier way of computing prisoners' records, for reliable storage of data, easy access to and retrieval of information for authorised users, and to provide high security for prisoner records. The software has features for adequate registration of prisoners on the day of jailing and the day of discharge. Furthermore, the system allows the user to search and view reports of both current and discharged prisoners, and it is more secure and flexible, and it provides more user feedback, reduces the workload, prevents erroneous data and provides more functionality than the current manual system (Oye & Inuwa 2015:10).

3.2.7 Computerised inmate information system

According Akpojaro and Omogbhemhe (2017:131), the computerised inmate information system has also been proposed for Nigerian prisons and it was designed to manage and integrate all prisoners' data into a single integrated system to be presented in a digital format. The system was developed using ASP.NET for the web contents, C# for the logic, and SQL for the implementation of the database that stores and manages the inmates' records. The system enhances the overall efficiency of inmates' information management in Nigerian prisons and can easily be accessed. The system also provides prison officials with an interface application for registering prisoners' information, provides a database file for storing prisoners' information, allows information about a particular prisoner to be conveniently retrieved from the database if the need arises, provides a higher level of security which requests user authentication to allow access to any information in the system, and generates reports of successful operations (Akpojaro & Omogbhemhe 2017:135).

4. The impact of information systems on records management

Information systems have transformed the working environment and brought forth a change in terms of transparency and efficiency in records management. These systems have made an immense contribution by incorporating various functions into one system thus enhancing the capabilities of organizations with minimum work effort. With regards to the information systems that have been reviewed, it can be seen that correctional facilities are starting to migrate from the manual system of managing information and moving towards an automated approach.

Manzar (2011:9) asserts that records management became easier after the prison management system (PRISMS) initiative was implemented. The 23 functions based modules developed under PRISMS have helped streamline and manage efficiently all these major activities. For instance, the prisoner's reforms module has helped generate a complete history sheet of all reform activities undergone by the prisoner from the beginning of their sentence. In addition, the prisoners' medical management module is efficiently helping to keep records concerning the medical history of the prisoner, history of medication, and health status (Manzar 2011:9).

Ahishayike, Taremwa and Omulo (2017:148) state that the integrated prison management system (IPMS) is a secure system that has modernized the management and maintenance of prison records, and it also facilitates efficient electronic processing of prisoner records. Ahishayike, Taremwa and Omulo (2017:148) further assert that the prison management and visitor management system are able to capture and store information and records in a central database where information is safe and easily retrievable when needed.

Compared to the manual system that was previously used, the offender management information system (OMIS) provides digital storage of records concerning admission, health management, rehabilitation and prison visits. The OMIS provides a brief and informative profile for each prisoner who is admitted and stores relevant case management reports and records of the programmes and other rehabilitative activities. The OMIS allows all prisoners to have their own basic profile which is an electronic file that shows their photograph for identification purposes as well as a summary of all descriptive information. Furthermore, the OMIS has tabs for other various

modules that provide layers of information on the offender such as reception and assessment, health, and case management (Kathuria & Porporino 2015:7).

According to Barnwal, Pathak and Pathak (2012:36) the integrated prison management system helps to ensure availability of data in digital form for preservation, analysis and reporting, and the information that is provided by the system is crucial as it facilitates better planning, timely and informed decision making for officials. The records kept by the system play a pivotal role with regards to the proper planning and management of correctional and rehabilitation programs.

It is quite evident that, information systems have an advantageous contribution in correctional facilities from a records management perspective and that they have simplified recordkeeping from the tedious and time consuming approach to the simple and efficient approach. The electronic approach requires less human effort and physical records storage, which saves space and minimizes the risk of damaging and misplacing records.

5. Conclusion and recommendations

Literature revealed a number of difficulties associated with the manual system of records management in some correctional facilities in Africa, with common challenges including maladministration, data redundancy, the need for physical space for storage and time-consumption, all of which have a negative effect on the records management function. This underscored the need to implement information systems in order to tackle the majority of the challenges that have been identified by most correctional facilities that still rely on the manual system. These systems have been regarded as an effective way of collecting, storing, analysing and presenting information, and contributed towards progressive transformation in most correctional facilities in African countries and throughout the world. Although it is quite possible that a number of correctional facilities in African countries have successfully implemented information systems, in South Africa there is absence of evidence that suggest if these systems have been successfully implemented or not, however absence of evidence is not the evidence of absence and more research needs to be done.

The study therefore suggests that information systems should also be implemented in correctional facilities in South Africa in order to address a number of issues associated with ineffective records management. However, the study recommends that a research that looks specifically at how information system impact records management, the policies that govern records management in correctional facilities and the security and safety of records stored in information systems in South African correctional facilities should be conducted. For effective implementation of information systems and on the extent of their application, it is recommended that correctional facilities should consider exploring the possibility of benchmarking and collaborating with other key sectors using automated records management systems to improve the tracking system as well as the accountability.

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