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Process of Migrating from Alice for Windows Software to Millennium Software: Covenant University Experience

Chidi D. Segun-Adeniran*, Oyeronke Adebayo**, Victoria O. Itsekor** and Happiness C. Michael-Onuoha, ****

Centre For Learning Resources,Covenant University, Ota, Ogun State, Nigeria
*E-mail: *chidi.segun-adeniran@covenantuniversity.edu.ng, **oyeronke.adebayo@covenantuniversity.edu.ng, ***victoria.itsekor@covenantuniversity.edu.ng, ****happiness.michael-onuoha@covenantuniversity.edu.ng*

ABSTRACT

The whole essence of the library lies is providing the information to users they require at the right time, using a fast and easy way. For Covenant University, the migration from Alice for Windows to Millennium software in 2010 brought about a complete change in the library workplace. This paper brings to the fore all the efforts and processes that was engaged to bring on board Millennium software for library operations in Center for Learning Resources. It also looks at the hitches encountered during the process and how these hitches were tackled. Suggestions are also given on how to successfully automate library resources and migrate from one software to another.

Keywords: Millennium integrated software, Alice for Windows (AFW), data migration, library automation, web public access catalogue (WEBPAC), data handling

1. INTRODUCTION

Information and communication technology has tremendously changed the way and manner in which activities are being carried out in libraries. In recent times, computers and other peripherals have been put to use to make work easier for library staff and to make information readily available to users. Traditional libraries have changed tremendously to digital libraries and this has become the norm in many countries all over the globe. Many libraries are digitizing their resources and to this end, Carr[1] posits libraries are assuming new roles, imagining new possibilities, and developing new solutions. It can therefore be said that the use of ICT in libraries have brought to fore Raganathan's law which says "every book its reader and every reader his book, do not waste the time of users and the library is a growing organism. Adogbeji,[2] *et al* asserted that the usefulness of information is a function of its timelessness, therefore getting the right information at the right time and in the right format depends on the facilities in use by libraries and its processing, storage and dissemination. They observed that at present, library operations in Nigeria are still largely manual with all the attendant delays. They mentioned that users' frustration in having access to pieces of information is increasing everyday due to unsatisfactory service of libraries. They also noted that so many automated libraries in Nigeria are either not using library software they have purchased or in the threshold of changing to another within a short time of committing fund to the project.

1.1 History of the Center for Learning Resources

The library in Covenant University is known as 'Centre for Learning Resources' (CLR). It started with the inception of the university in 2002 at the then College of Business Studies ground floor, before the library was moved in 2004 to the main building. Presently, the library has grown in its collection and with the number of staff employed. The total floor area of the complex is $11{,}300_{m}{}^{/2}$ with a seating capacity of 3500 persons. It is designed as an imposing glass structure, and is strategically located in a central place amidst the college buildings, the University Chapel and the students' halls of residence.

All routine activities of the library, Centre for Learning Resources (CLR), http://covenantuniversity.edu.ng/Library has been fully computerised and can boast of a functional virtual library service, which gives staff and students access to the Web Public Access Catalogue (WEBPAC), and other e-resources from offices, departments and wherever there is a computer terminal that is linked to the university network and internet.

2. LITERAUTURE REVIEW

For Nigerian libraries to improve their choice of software and reduce the incidence of failed library automation there is need for systems analysis to be done. According to Nok[4] automation is the automatic, as opposed to human, operation of process, equipment, or system, or the techniques and equipment used to achieve

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this. Adogbeji[2], *et al* noted that a system analysis of what software is needed and the vision/objective of the library should be strictly adhered to before choosing a library software, they also suggested that systems should be frequently updated for proper library maintenance. Adomi[5] also noted some constraints, however, inhibits the success of the process to automation, these includes funding, scarcity of systems analysts, and absence of dedicated commitment to automation on the part of the management. She stressed that the attitude of management to automation and maintenance culture is poor.

Matoria & Upadhyay[3] also observed that the existing library data is an important data and cannot be generated again and again as it is costly in terms of resources such as money, manpower, and time. When automating a library, it is imperative to re-use the existing data with the new library management software by converting it in a way that it would be suitable for the new software. More so, the switch over from one software to another is also useful for libraries as the existing data are refined and cleaned during the conversion process.

Mohammed[6] posited that automation enhances proper management of large collections and the changing nature of library users. He further stated that the inadequacy of traditional library services and tools in coping with the requirements of identifying information pertinent to a given problem has forced libraries to automate their functional service areas. Abubakar[7] opined that automation in libraries brings about the decentralized access to records and information. These new technologies according to Adomi[5] allows libraries to provide better services to users by offering simple access to what they want, when and how they want it. Ifidon[8] identified the following as major reasons why every library should embrace automation:

- It enhances libraries reputation
- It helps the library manager in providing report on the various operations of the library.
- It helps in completing a task easily and accurately
- It facilitates the collection data which can assist librarians in the management of library collections
- It provides a means of offering new improved services to patrons and facilitates cooperation between libraries.
- It helps in reducing staff cost.

Staff training is extremely important and should be carried out for all the library staff who will in turn train the library users internally. The training has to continue for a period, so that the new software is well utilized and mastered.

This paper is written as an evidence of the successful migration of software by Centre for Learning Resource Covenant University Library. The change from Alice for Windows (AFW) to Millennium Integrated Software, owned by Innovative brought about increase in the accessibility of the library resources. The resources available at the CLR, Covenant University, have not only become more accessible to users within the physical terrain of the university but also to any library clientele who has access to internet facility.

3. INTERFACE OF SOME MODULES IN MILLENNIUM INTEGRATED SOFTWARE

Millennium integrated software is proprietary software, the Management of the library carried out proper preliminary system analysis overtime before embarking on its purchase. Each module in Millennium has a friendly user interface which makes it easy to handle. Some of the modules currently in use at Centre for Learning Resources are:

3.1 WEBOPAC

Cataloguing details of each information resource is entered into the Millennium software using the appropriate module and this is made available to users via the WEBPAC. The WEBPAC is accessible worldwide as far as there is internet connection and a peripheral to make the internet accessible. The WEBPAC has several entry/access points such as author, subject, keyword, title, etc. (Fig. 1).

3.2 Cataloguing Module

The cataloguing module consists of two main sections; one is located by the left hand side while the other is at the top of the module. The section on the left hand side

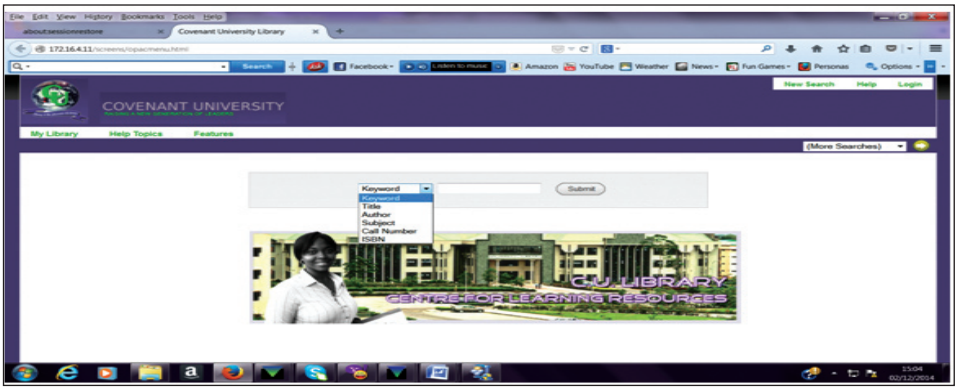

Figure 1. Screenshot of WEBOPAC.

consists of nine items. The cataloguing module makes it possible to import complete cataloguing details of books from remote databases. This is achievable because the remote search helps to get across to several Z39.50 and MARC 21 compliant records of other libraries across the world. The imported item is edited before it is saved into the library catalogue (Fig. 2).

3.3 Circulation Module

The circulation module of Millennium is very easy to operate and it performs all the functions of circulation activities such as check in, check out, items on hold, statistics amongst others. Using this module for circulation activities makes it very fast, as it works with technological equipment such as scanners and barcode labels. It is also from this module that overdue notices are sent, fines are processed, payments of fines and issuance of receipts are made.

Each patron has a personalised window where records of circulation activities are saved. In this window, their respective details and how such details could be saved, edited, viewed or deleted is available. There is also a provision where individual patron photograph can be displayed on the window (Fig. 3).

3.4 Serials Module

Millennium's serial module helps to capture the details of serial publications such as journals, newspapers, and magazines. These details are saved into the library catalogue. It consists of items to be indexed on the left hand side of the module these includes; author, title, subject, keyword, etc. When a subject or keyword is entered into the WEBPAC, if it has been indexed, a user can locate it easily through these search terms (Fig. 4).

4. LIMITATIONS OF MILLENNIUM SOFTWARE

Millennium is very good software, but it still has its limitations. These limitations are:

- Cost: It is expensive, and there are maintenance charges, which are also quite costly.
- Administrator: The owners of Millennium are the sole administrators and they alone have access to the administration and backup of the system.
- User's limitation: Innovative sells Millennium packages as much as an institution or organisation can afford. Covenant University bought 10 ports which means only a limited number of librarians (10) can make

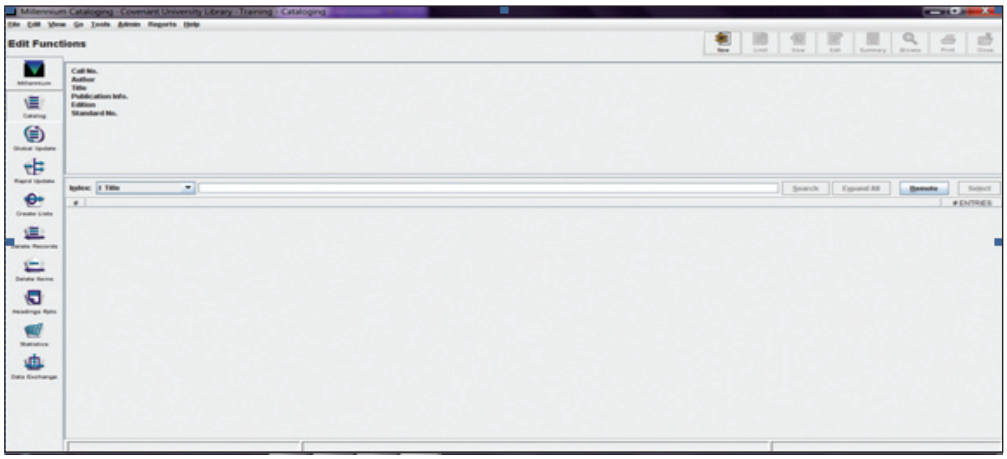

Figure 2. Screenshot of the cataloguing module.

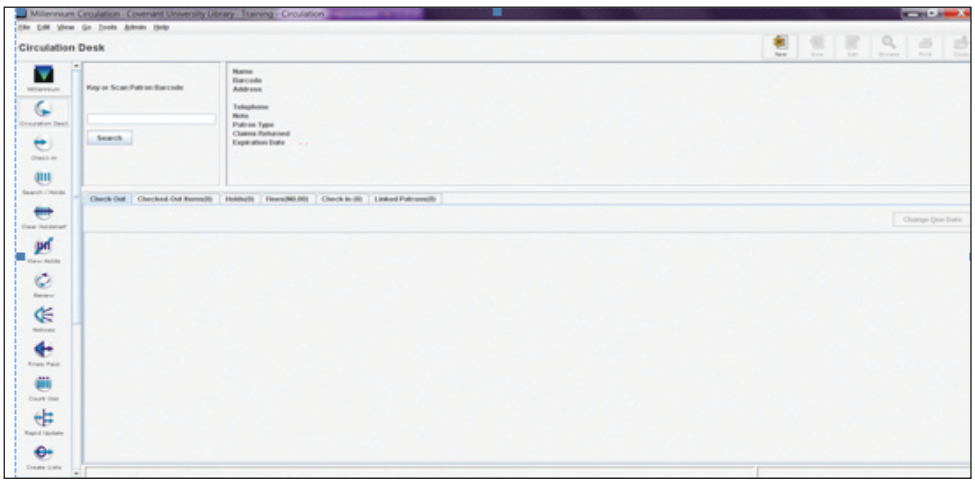

Figure 3. Screenshot of the circulation module.

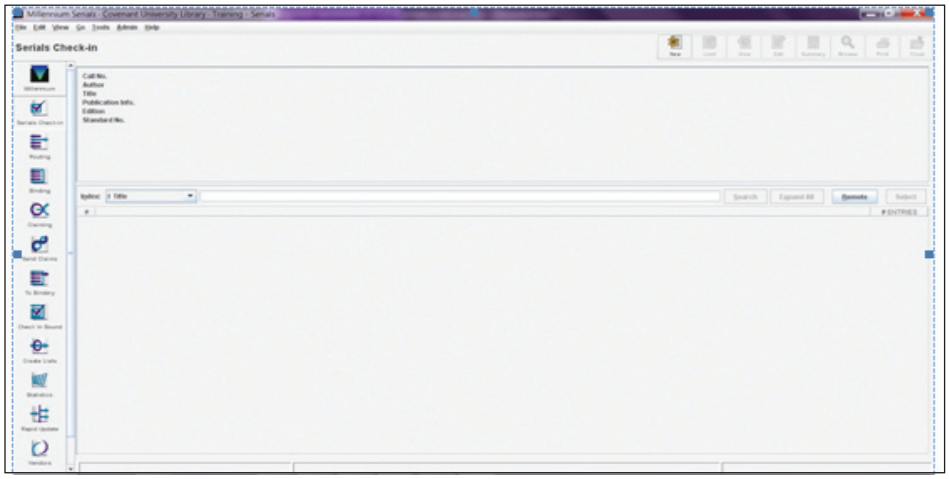

Figure 4. Screenshot of the serials module.

use of the software at the same time. Access to Millennium depends on the number of ports purchased. That is, it is only ten people that can log on the millennium module at the same time. These are usually used at the circulation desk, the cataloguing and serial units for indexing of serial materials (such as newspapers, magazines and journals) daily. In the aspect of acquisition, it is used intermittently.

- Backup System: API software is a third party backup system that anybody can use. Access to the data is from the administrators of Millennium, in the USA.
- Bandwidth: The bandwidth required for Millennium to operate is fairly large. This is because it relies solely on internet network to function.
- Server Specification: 600 GB hard disk drive, with the capacity in two, 300 GB each are used. It is a raid server, therefore for every work done; the second hard disc captures it. Whatever happens in the first server happens in the second. In a way if one server fails the other one captures the work done so far, therefore preventing total loss of information. It is a form of backup system. The mother board of the server DL6, was used as the server can accommodate more than what the administrators specified for the Millennium. Most time, the system is configured not to be blocked by administrator authentication server. For any restriction it is from us. Any time there is restriction, they check the security system and it begins to work.

5. RATIONALE FOR MIGRATING FROM ALICE 6.0 TO MILLENNIUM SOFTWARE

- Web-based: One of the justifications for migrating from the Alice 6.0 library software to the Millennium software is the web visibility. The Millennium Integrated Library software is web-based. Library users do not have to be physically present in the library to have access to the library resources. The aim of migrating to Millennium software was to ensure that library resources have web visibility.
- When resources in the library are catalogued, automatically the bibliographic details reflects into the library catalogue known as the WebPAC and any library user can easily access these resources virtually anywhere in the world, provided he or she has internet access. The library users can also have easy virtual access to the online resources available in the library database.
- Alice 6.0 is not web-based and it, therefore, limits the access to the library resources to clientele who In addition to that, there is an annual conference for all the users of the Millennium Integrated Library Software. This regular conference allows members of the user groups to interact with each other, share thoughts, discoveries and challenges encountered in the process of the software usage. are physically present in the library. With the use of Alice 6.0 software, library users who are not physically present in the library will have no access to the library's collections and every library needs to be on a platform where its resources are visible everywhere. The profile of the library has been enhanced due to the rich information resources base one can access therein.
- Automatic Back-Up System: Automatic backup system is embedded in the millennium software. The challenge of data loss is highly controlled as bibliographical details entered into the software are immediately automatically backed-up. With the use of Alice 6.0 software, there has to be daily system check, so it can process daily input of work to avoid data loss, but the case is different with the Millennium software because there is straight access from the server.
- Fully Integrated System: Millennium software is a fully integrated system, unlike some systems that are stand alone. This unique character allows for navigation from one application to another with the software. This is simply because there is an existence of a linkage between the modules available in the

millennium software. As a result of the full integration of this software it allows RFID to function with it when installed.

- Verification Capacity: Millenium makes ample provision for the in depth tracking and monitoring of individual user's operations. It also provides for patron authentication/verification capacity. This peculiar character was not present in the Alice 6.0 software; With Millennium Integrated Library Software it is also very possible to create reports and updates.
- Virus Free: The Millennium software runs on the Linux server and not Windows and the Linux server is not prone to virus hence it solves the challenge of virus attack. The Alice software package had the possibility of being attacked by virus.
- Marc 21: The bibliographic details entered in the Alice 6.0 are not made available in Machine Readable Catalogue (MARC) format while those entered in the Millennium Library Software are available in Machine Readable Catalogue (MARC) format.
- Technical Support: There is readily available technical support with the use of Millennium Integrated Library Software. The producers of Millennium make available a functioning help desk where users can report challenges encountered in the process of using the software. There is also a list serve and user group which allow various libraries making use of the Millennium software to interact on issues relating to the use of the software. The Millennium training manuals are also made readily available online; this allows for retraining of the users.
- Segregated packages: The circulation, catalogue, serials, acquisition and all the other packages/operation are all present in segregated module. Every module functions at its own unique space, making it possible to work on different packages per time.

6. MIGRATION PROCESS

Following processes are involved in migrating from Alice for windows to Millennium integrated software, in Covenant University library:

(a) Study of the existing system/data design

(b) Export of existing data

(c) Reformatting of the text file

(d) Mapping with destination database

(e) Data modification and rationalization

(f) Server and Red Hat Linux system

(g) Testing and configuration of data

(a) Study of the existing system/data design

A system analysis had to be carried out by the management of the library to determine whether the current system was meeting the demands of the users. An analysis was done to justify the functionality of existing system. The analysts consisting of the library management, users, and management of the University came up with the major reason for migrating from AFW to Millennium being the accessibility of the library resources to everywhere the users are. Understanding users' need for information at any point in time made management brainstorm and came out with several software and decided to get the best at the time which was Millennium, the price notwithstanding.

(b) Export of Existing Data

The migration which took place as the existing data was mapped into a suitable format. Matoria, & Upadhyay [3] noted that "as LibSys can generate output files in various formats. It was decided to generate variable length text files of the data, which could cover catalogue fields as well as the holdings fields in a single record. Data is manipulated from text file to an acceptable format into the database. All fields in the existing catalogue and holding records like, author(s), subject, title, edition, editor, place, publisher, year, etc.

(c) Reformatting of Text-File

When the data in the text file was generated, there was need to manipulate-reformat it using a notepad/word. An IT engineer had to do the data transfer by separating the data with record separator. This posed a challenge because converting these records required skillful and competent ICT knowledge so that the data could be copied effectively and not be lost in the process of the migration. New conversion was done. When the text file was successfully completed, the data was mapped with destination database. Before the migration could take place, the records in AFW had to be converted to MARC format because Millennium software can only accommodate records in MARC format.

(d) Mapping with Destination Database

In case of migrating domain, databases mapping is important. It was mapped by first connecting to the database to be mapped, then MySQL actions was updated, and the table with which the databases was created and used was selected. After selecting the tables for the project, it was linked to the tables in the destination database. It automatically linked source tables to destination tables based on their names. The migration was mapped by the IT Engineer who re-mapped/fine-tuned the mappings in the last step of the new project.

(e) Data Modification and Rationalisation

The backup system was also put in place, and that included: the tape drive and the cloud backup. In the tape drive, a tape is fixed to the server and while the data are recorded they are stored directly in the tape, when it is filled, it is removed and another tape is installed.

The cloud back up: involves the API backing up itself from the server at innovative which is also being done from USA. A tape drive was integrated into the Millennium software which would facilitate the process

of back up. Centre for Leaning Resources, first started with the tape drive, and then later used the cloud backup. The millennium server has two hard discs, when a disc is full, it is labeled and kept for backup. Only the latest backup is restored from the disc.

(f) Server and Red Hat Linux System

For installation of the data, Millennium operators demanded that a special server called rate server which houses two hard disks of 300 and 200 gigabyte respectively be installed. Since Millennium software does not operate on windows, it was mandatory to get a Red hat 5 Linux before the software could be installed. Red hat Linux has security vessels embedded in it therefore making it difficult for any virus to attack the Millennium software. Millennium has a SSL (Secure Socket Layer) which secures information that is being sent in and out of the software. All operational data were recovered and being used. An inverter with 5 KVA that can hold power up to 6-8 hours was also installed in case of power fluctuation.

(g) Testing of Data

After the successful transfer of data from adhoc table to SQL server tables with a Red hat linux system, the data was tested to check out if the migration process was auspiciously carried out and no data was missing, then it was configured for use. The systems librarian, IT Engineer and Director of the Centre for learning resources were all involved in the process and they confirmed all data were intact. After the successful migration of Millennium, the administrators of innovative sent an IT engineer/librarian who demonstrated the operations on the Millennium interface. It was important to get everyone involved to make sure that important functions or needed capabilities were not overlooked.

7. REASONS FOR SUCCESSFUL DEPLOYMENT OF MILLENNIUM SOFTWARE

- Availability of funds: The proprietor base of Covenant University believes in excellence and they are always ready to make funds available on worthwhile projects. This created a nucleus for the successful deployment of Millennium software. It was therefore necessary for the library to employ the use of state of the art resources that will enhance cutting edge and best practices.
- Availability of competent staff: The migration process was successful because Covenant University has competent and well-seasoned ICT professionals and librarians.
- Reliable and constant power supply: There is constant supply of electricity.

8. CONCLUSIONS

Millennium integrated software is user friendly and makes the task of librarians easy, especially because of its ability to import catalogue details from various databases of other libraries across the globe. This allows for library users across the globe to have access to resources contained in the library once there is internet access. Libraries that are yet to be automated should consider using Millennium for their day to day library operations, not just because it is a big drift from the manual means of organising library resources but because it is a web-based library software. With Millennium, all types of libraries can feel relaxed from maintenance of hardware and software and concentrate on enhancing their library services to the satisfaction of their users.

REFERENCES

1. Carr, P. From innovation to transformation. *Lib. Res. & Tech. Serv.*, 2009, **53**(1), 3-14. http://www.ala.org/alcts/sites/ala.org.alcts/files/content/resources/lrts/archive/53n1.pdf (accessed on 15 February 2016).
2. Adogbeji, *et al*. Software migration in selected university and special libraries in Nigeria. *Int. J. of Aca. Res. in Busi. and Social Sci*., 2013, **3**(4). http://www.hrmars.com/admin/pics/1715.pdf (accessed on 15 February 2016).
3. Matoria, R.K. & Upadhyay, P.K. Migration of data from one library management system to another: A case study in India. *Program,* **39**(2), 2005, 160-66. http://egranthalaya.nic.in/migration.pdf (accessed on 23 February 2016).
4. Nok, G. The challenges of computerizing a university library in Nigeria: The Kashim Ibrahim library, Ahamadu Bello University, Zaria. *Lib. Phil. & Pract*., 2006, **8**(2). http://unllib.unl.edu/LPP/nok.htm (accessed on 20 January 2016).
5. Adomi, E.E. Library and information resources. Ethiope Publishing Corporation, Benin City, 2009 pp. 1-103.
6. Mohammed, A. Automation in Nigerian University libraries: Problems and prospect. *J. of Edu. Serv.,* 2006, **2**(1), 55-63.
7. Abubakar, A. Lifelong education in the age of information technology: The need for a review of library study courses in the NCCE minimum standards. *Int. J. of Res. in Edu.*, 2006, **3**(1), 20-8.
8. Ifidon S.E. Modern theory and practice of library collection development. Justice Jeco Publishers, Benin City, 2006, pp. 1-49.

Contributors

Ms Chidi Deborah Segun-Adeniran is presently working as Librarian 1 at Technical Services Unit of Centre for Learning Resources, Covenant University, Ota and is a Certified Librarian of Nigeria. She is a Graduate of the Department of Library, Archival and Information Studies, University of Ibadan. She is recipient of some outstanding awards such as the British Council Award for the best Graduating Student in the Department of Library, Archival and Information Studies, University of Ibadan (2008); the Dokun Fadiran Foundation Scholarship for the best Graduating Student in the Department of Library, Archival and Information Studies, University of Ibadan (2008), the Departmental

prize for the best graduating student in the Department of Library, Archival and Information Studies, University of Ibadan (2008). She also holds a Master of Library and Information Studies from the same institution. She has published numerous articles in both local and international journals.

Ms Oyeronke Adebayo is presently working as Circulations Librarian at the Centre for Learning Resources (CLR), Covenant University, Canaan land Ota. She is a Graduate of Department of Library Science Bayero University Kano, and holds Masters degree in Library and Information Science from University of Ibadan, Ibadan.

Ms Victoria O. Itsekor has Masters degree from University of Ibadan and first degree at Delta State University. In 2007, she resumed work at the Centre for Learning Resources (Library), of Covenant University, Canaan Land, Ota, Nigeria and has worked there in different units as a librarian till date. In 2011, she participated in the first IFLA Research Librarian program and has attended and presented papers at various conferences, both nationally and internationally. In 2004, she succeeded in procuring book gifts from National Libraries of Nigeria on behalf of 12 schools and Libraries & Scholars an organization she founded at Lagos State for the development of their libraries. She presented similar, seminar at a TV broadcast at Kebbi TV, in 2001.

Ms Happiness C. Michael-Onuoha holds a BSc Hons in Library and Information Science/Geography from the University of Nigeria, Nsukka and a Masters degree in Library and Information Science (MLIS) from the University of Ibadan, Ibadan Oyo State. She is professional librarian with work experience and technical expertise in various sections of the Academic library, a member of Cataloguing and Classification Section of the Nigeria Library Association (NLA). Presently, she is a Resource Officer 1 in the Centre for Learning Resources (University Library) Covenant University, Canaan Land Ota, Ogun State. Her research interests include: Social media librarianship, scholarly publishing, library administration and organization using the most effective software application-Millenium.