AN AUDIT OF CHANGE MANAGEMENT PROCESS IN LIBRARY SYSTEM MIGRATION AT AFRICA NAZARENE UNIVERSITY LIBRARY

BY

CAROLINE NYAGA

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MOI UNIVERSITY

ELDORET

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DECLARATION

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Caroline Gicuku Nyaga **IS/MPhil/62/10**

Sign……. Date.....

This research has been submitted for examination as university supervisors.

DECLARATION BY THE SUPERVISORS:

Dr. Damaris Odero
Department of Library, Records Management and Information Studies
Moi University, Eldoret

Supervisor: Signed……

Date……

Prof. Joseph Kiplang'at
Department of Library, Records Management and Information Studies
Moi University, Eldoret

Supervisor: Signed…….

Date……

DEDICATION

I dedicate this thesis to my family who never let me give up and to my supervisors who went out of their way to help me complete it.

ABSTRACT

Colossal empirical literature suggests that change management is amongst the leading factors that determine the success or failure of a system migration. In 2006 Africa Nazarene University Library began automating its services, however implementation of the system experienced some challenges, the library was still relapsing back and forth from manual and partial automated library system, implying that it had not fully realised the benefits of an automated system. By the time of carrying out this study a number of its functions were yet to be automated and the causes of this limited performance of the library system had not been established. The aim of this study was, therefore, to audit the change management process at Africa Nazarene University library systems migration with the intention of proposing measures that can optimize the change management efforts. To achieve this, the study sought to: establish the reasons/drivers for migration from the manual to the automated system at the library; examine the phases of the migration process, assess the support system in place for the library system migration; determine staff and users perception and response to the migration process; seek out the change management challenges experienced by the library during the migration; and propose a strategy for successful system implementation. Jick's Todd 10 step model of change management was used as the theoretical framework. A post-positivist philosophical stance embedded in a data transformation mixed method approach was adopted. Purposive and non-proportionate sampling methods were used to draw a sample size of 298 constituting of library staff, ICT staff, faculty members and students from a population of 1060. The study used descriptive and thematic analysis to analyze the data and tables, figures, narratives, and excerpts to present the data. Resounding previous findings, the study established that chief reason for the migration was the desire to enhance the operations and delivery of services, notwithstanding that the new system was a donation. The migration process was, however, unstructured and unplanned. The study concludes that the library's change management maturity level is considerably low and because of the library's contextual uniqueness, an off the shelf change management approach cannot wholesomely be adopted. Consequently, the study recommends that the library adopts a strategic change management plan that addresses both continuous and discontinuous change and that outlines both strategic and functional capabilities requirements has been developed and proposed for the library. A framework of the suggested strategic change management plan that takes cognisance of the ANUL context has been developed and proposed for adoption.

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LIST OF ACRONYMS AND ABBREVIATIONS

ANU: Africa Nazarene University

A**NUL**: Africa Nazarene University Library

IT: Information Technology

ICT: Information Communication and Technology

HTML: Hypertext Markup Language

EU: European Union

USA: United States of America

US: United States

TV: Television

CHAPTER ONE

INTRODUCTION AND BACKGROUND INFORMATION

1.0 Introduction

It is widely stated that change is the only constant.

> What was true more than 2,000 years ago is just as true today, we live in a world where "business as usual" is change. New initiatives, project-based working, technology improvements, staying ahead of the competition – these things come together to drive ongoing changes to the way we work (Mind tools, n.d) https://www.mindtools.com/pages/article/newPPM_82.htm)

As far back as the 80's, Charles Darwin in his work on the origin of species published in 1859 (as cited in Johnson,1998) provided scientific evidence on species that became extinct because of mal-adopting to change. Even to to-date, Adeyoyin, Imam, and Bello, T. O. (2012) observe that "organizations that have realised the inevitability of change have accepted the onerous tasks of managing it. Others that believed otherwise, have unwittingly surrendered themselves to change to work the way it deems fit" (p.1).

This has raised colossal interest in change management as a subject matter from variety of perspectives. Accelerated technological innovations, competitive economies, globalization and increased stakeholders expectations are just but a few factors that propel change and the dynamics of its form, scope and impact. Despite this interest evidenced by the large body of literature, theories, practices and postulations of change management, evidence suggests that often than not, change management is just moderately successful. Factors that account for this are as varied as the actual levels of success or failure of transformative initiatives. Understanding and effectively responding to change is therefore considered not only a competitive,

but also a survival strategy for most of today's organizations. In the context of libraries and information centers (LICs), Kamila (2009) aptly concludes that 'managing change is the only feasible solution to overcome all the difficulties and problems created in ever changing environment for the overall development and progress of LICs in the ICT era' (p. 316).

The literature presents change management as a complex issue irrespective of whether that change is perceived as big or small. The principles and processes of change are largely considered to be similar whether applied to redesign of the working practices of one section or restructuring of the entire organization (Heerwagen, & Kampschroer, 2016). Generally, the process is depicted as starting with articulation of the need for the change resulting from an understanding the implications of change in the external and internal environments, to the deployment of appropriate implementation strategies.

This study examines the change management initiatives during Africa Nazarene University Library migration from the manual to the automated Sirs Mandarin Library information system. It is organized into five distinct chapters each covering specific areas conforming to descriptive research design.

In this introductory chapter, a nexus of issues relating to the concept of change management as presented in the literature is examined and the context of the research is described. It includes:

- A literature review of the multi-dimensional aspects of system migration and the Libraries perspective of Managing change;
- A brief on African Nazarene university Library; and

- A declaration of the thesis' problem statement, aim, objectives, research questions, assumptions, scope, limitations and significance of the study.

1.1 Constituents of Change Management

There are two concepts associated with change frequently treated as synonymous despite their difference– "management of change" and "change management." Distinguishing the two, Berube (2012) associates management of change with the technical side of change and change management, with the people side of change. Thus management of change relates to the structured process used to review all proposed changes to equipment, raw materials, processes, and procedures to evaluate the impact and risks associated with the change before its actual implementation. Accordingly, he enumerates the core components of management of change as change risk analysis, review and approval, test and validation, implementation, post-implementation review and documentation.

On the other hand, for change management he identifies the following components: change risk analysis, actively involved leadership, communication, training and coaching, feedback and corrective action, rewards and reinforcement. Paton and McCalman (2008) however argue that it is very hard to work with one and leave out the other considering that management and change are synonymous. By this, Nickols (2004) asserts that both the people and the technical sides of change management are crucial for a successful transition. This study, therefore, takes cognizance of the two perspectives.

Lending support to the correlation between the people and the technical side of change management, Nickols (2012) identifies four points of views to the concept of

change: the task of managing change, an area of professional practice, a body of knowledge and control mechanism. Task of managing change posits that change management is an institutional mechanism for responding to both internal and external forces exerting changes as well as dealing with its the impact on individuals. Professional practice focuses on prerequisite knowledge and skills of professional practitioners who assist individuals and institutions cope with change issues. The body of knowledge, under which managing change is considered, encompasses methods, techniques, models, skills, and tools that define the practice. Control mechanism consisting of procedures, processes, requirements and standards. Collectively, these variations account for much of the differences in research focus amongst scholars and change management strategies adopted by organisations.

Notwithstanding the uniqueness in forms of changes, individuals and environments of change, decades of research has shown that there are actions that can be taken to influence people in their individual transitions. The overarching objective of change management is to offer guideline on how to prepare, equip and support individuals to successfully adopt change to drive organisational success and outcomes.

1.2 Application of Change Management

Rockford Consulting Group (1999) in an attempt to bring out the issue of change as being inherent part of organisations' existence states:

> Change is inherent in contemporary organizational experience, and its management is not only critical to organizational success and survival but is also at the crux of the field of organization development. Knowledge of the fundamental aspects of change is defined in terms of a person's understanding of individual responses to change and the general nature of change. Knowledge of the change process is determined by a person's understanding of three key processes: planning change, managing change (both the "people" side and the

> "organization" side) and evaluating change. It should be noted that each dimension builds on those below it (p. 1).

The variation in perspectives of change management has resulted in myriad of ways in which it is applied. These include, but not limited to determining: the process or stages of change; how to go about implementing change; what needs to done; and why things ought to change. The answers to these questions collectively have been considered useful in choosing the appropriate mix of change strategies to employ in different environments. These are defined by factors such as range and extent of change required, level of resistance expected or being experienced, the size and characteristic of the target population, the time available or required for the implementation of the change, the level of expertise required to see through the exercise of change, and the degree of interdependence between those steering the change as the management and those required to adopt the change such as the employee.

Based on these cited works, it can be deduced that the contextual environment under which the transitional change occurs and the effect organisation's or individual's perception of its intended mission and outcome will continue to draw disparities in the way change management is applied in organisations. For these reasons, Metre (2009) concludes that:

> Change is consequently redefined as either individually constructed, brought about and given meaning in interaction with other social agents and context contingencies, or as an organizational context which brings to the fore and gives particularly sharp profile to the competing and conflicting interests and ideologies of groups of organizational members as the base of their status in the organization (pg. 5).

Literature shows a range of ways in which organisations have deployed change management in response to threats and opportunities driven by a variety of internal and external factors. These include, but not limited to, benefits realisation, value creation, Return on Investment (ROI) and Results and outcomes (Prosci, 2013). The underlying motive is always to improve the performance of the organization across the entire organisation or its sub-system. The prerogative of change being to introduce and impose new positions that are compliant with the required workforce to improve production, standards, quality, timeliness and overall performance of organisations. In this context, change is defined in terms of driving forces, retraining forces, force field analysis and change analysis (Lewin, 2004).

Forces from social, political, economic and technological environments compel organisations to adopt new positions. Unfortunately, the pace of change can never be predicted. Learning organisations recognise that change is required to define a new position in terms of new goals, aspirations, strategies objectives, new activities and methods of operation geared towards improving service delivery, efficiency and effectiveness of running the organisation to achieve optimal performance. However, reported cases of change initiative failures underwrite the difficulties associated with change. Most of these failures are as a result of insufficient understanding of the factors that contribute to successful transformational initiatives. Managers in all sectors understand all too well that they will continually be judged by their ability to efficiently and effectively manage changes.

1.3 Transformative Initiatives in Libraries

Like everything else in this world, libraries have also been transforming and metamorphosing in response to the changing times articulated by the specific social-

cultural context in which they are set. Underscoring the dynamics of libraries is Ranganathan's fifth Law of Library Science 'library is a growing organism.' Growth here implies change, and academic libraries are faced not only with an unprecedented rate of change, but also with real challenge to their existence in contemporary society (Weiner, 2003).

Pugh (2016) commenting on the change in information services, accurately observes that it has become the norm adding that it is no longer easy to scorn the power of technology as a changing instrument in libraries. Most of the libraries especially in the academic world are experiencing this change due to the growth of technology. Use of information technologies is transforming the way libraries are managing and providing its information services. The organisational structures of the libraries, roles of librarians, forms of information products have also been transformed.

Drake (2000) describes technology as one of the primary drivers of change in the ways that people work, seek information, communicate, and entertain themselves. A case in point is library automation which is the design and implementation of ever more sophisticated computer systems to perform tasks formerly done by hand in libraries. From its outset in the 1960s when machine-readable catalogue record (MARC) was developed, library automation has extended to include the principle functions of acquisitions, cataloguing and authority control, serials control, circulation and inventory, and interlibrary loan and document delivery (Reitz, 2014). Recent trends in library automation include the growing significance of "add-ons" mostly associated with the delivery of digital content, better integration with the Web environment and for academic libraries, closer integration of library systems with learning management systems.

From the above presentation, there is no doubt that libraries' efficient operation in the present age largely depends on their adoption of information and communication technologies (ICT). ICTs consists of multiple sets of rapidly evolving technological tools and resources used to communicate, create, disseminate, store, and manage information (Blurton cited in Chisenga, 2006). The technologies include telecommunications technologies (telephony, cable, satellite, TV and radio, computer-mediated conferencing and video conferencing), digital technologies like computers, information networks (The Internet, the World Wide Web, intranets and extranets) and software applications.

To libraries, ICTs has presented them with an opportunity to provide value-added information services such as the provision of access to a wide variety of digital-based information resources to their clients. In addition to using modern ICTs to automate their core functions, ICTs have long been used to enhance library cooperation and resource sharing networks, integrate management information systems and develop institutional repositories of local digital content. Additionally, it has been influential in the introducing ICT-based capacity building programs for library staff and information literacy programs for library users, globalise information and knowledge resources and provide access to bibliographic databases, full-text documents (Chisenga, 2006).

Acknowledging the influence of ICT, Peña-López (2001) aptly concludes that ICT is a powerful enabler of development because of the significant impact on the economic, scientific, academic, social, political, and cultural and other aspects of life. ICT's has tremendously changed the management of resources or housekeeping operations as well as the way services are delivered. While general IT application tools and

Integrated Library Management Systems are largely used in housekeeping operations, like acquisition, cataloguing, circulation control, serials control, the internet has been used extensively as a resource as well as a tool to deliver the Library and Information Services (LIS). Considering the rate of innovative use of ICTs and the ever-declining costs of ICT facilities, libraries are now able to use more sophisticated technologies to deliver information services to their clients' particularly remote access.

The appearance of the World Wide Web in the mid-1990s is perhaps the greatest symbol of this shift. Lynch (2000) observe that the convenience of electronic content has been so compelling that many users particularly students have rapidly began to ignore materials available only in print in favor of this convenience, even though the print material might be more appropriate for some purposes. This trend has seen many users selecting Web-based search engines as their first portal to information because they index full-text Web pages and therefore one can assume that all content found would be accessible online.

Collectively, these transformations have led to turbulent circumstances within the libraries raising fundamental questions about libraries' roles and missions in the digital age. Libraries must deal with the emerging changes and attempt to draw the benefits accrued from such changes. This efforts requires them to not only respond to these escalating environmental changes, but also develop innovative strategies to continue to meet the information needs of their users. Appropriate Change management strategies would, therefore, be of essence in ensuring stability and growth of the libraries.

1. 4 Africa Nazarene University

Africa Nazarene University is a private university that provides both undergraduate and postgraduate programs. It came to operation in August 1994 with 63 pioneer students taking courses in Theology, Business Administration, and Master of Arts degree in Religion. At the time of the study it had a capacity of 1000 number of students.

The mission of ANU is to provide a holistic education that develops individuals academically, spiritually, culturally and physically and to equip them with excellent skills, competencies and Christian values which will enable them to go into the world well prepared to meet the challenges of their time. Its vision is to be a light to the people of Africa through higher education grounded in the Wesleyan-Holiness tradition; the University of choice for Christians desiring academic excellence; a community which will produce individuals of character and integrity of heart; and a place where lives will be transformed for service and leadership to make a difference in Africa and the World.

1.4.1 Africa Nazarene University Library

The university has a library with a collection of both print and non-print materials. Beginning 2006 the library acquired Sirs Mandarin, an integrated library system, and has since then expanded its collection to include electronic information resources. Today the main campus houses over 50 thousand volumes in almost all spheres of knowledge. The Library is made up of seven sections: technical, acquisition, circulation, special collection (Holiness and Africana section) and multi-media sections.

The mission of the library is to support the university's mission. The library makes knowledge available through such means as: acquisition, organisation, management, housing and preservation of collections. Appropriate technologies for processing, organising and retrieving information are used to support information management and service delivery. Although it provides personalised reference and bibliographical services, the library trains its users how to find, evaluate, and use information independently as a basis for life-long learning.

The vision of the library is to be recognized as a leader in provision of user-centered information services to all Africa Nazarene University community whether internally or off-campus, has stimulated its effort in implementing technology to support its services. Notwithstanding its concerted efforts and good intentions to provide its clients with state-art information services, even to date, not all the housekeeping services in the library are automated. Severally, the library has had to fall back to manual processes. In the year 2003, the library became a member of the Kenya Library and Information Services Consortium (KLSIC) thereby expanding its electronic journals and books significantly. The library also runs a Multimedia centre (also known as the e-center), used for accessing electronic information.

1.5 Statement of the Problem

In 2006 Africa Nazarene University Library began automating its services using Sirs Mandarin library information system. Ten years down the line a number of its functions are yet to be automated, and the library is still relapsing now and again to the manual system. This is despite the vast information, tools and specialists in library automation systems available in public domain. As such, it has yet to realise the benefits of the automated system fully. While scholars attribute such transformative

initiatives failures to a range of factors, poor change management strategies are considered amongst the principal reasons (Johnstone and Peeraji, 2014).

Up until the time of this study, the causes of this limited performance of the library system had not been established. No efforts, for example, have been made to understand the change management practices at the Nazarene University Library so as to establish its strengths and deficiencies. The results of such an audit exercise are critical for the development of informed decisions and identification of corrective actions. By analyzing the change management process of ANUL, this study hopes to address this gap.

1.6 Aim of the Study

The purpose of this study was to analyse the change management process at African Nazarene University Library system's migration in order to suggest measures that can be taken to optimise the change management efforts.

1.7 Objectives of the Study

Specifically, the study sort to:

1. Establish the reasons/drivers for migration from the manual to the automated system at ANUL,
2. Examine the phases of the migration process,
3. Asses the support system in place for the library system migration,
4. Determine staff and users perception and response to the migration process,
5. Identify the change management challenges experienced by the library during systems migration, and
6. Propose a strategy for successful system migration.

1.8 Research Questions

1. What necessitated the need to change from manual system to the automated system?
2. How was the transition from manual to automated systems carried out?
3. What structures and support systems were in place for library system migration?
4. What are staff and users opinion of, and reaction to, how change management process was handled during system migration?
5. What factors derailed the change management during the systems migration and how? and
6. What measures can be put in place to facilitate a successful system migration?

1.9 Assumption of the Study

This study was anchored on the assumption that the change management approach taken by ANUL considerably accounts for the non-optimal operation of the automated system. The study findings vividly established that ANUL lacked a structured change management approach in its system migration. The process of change either required some critical phases or activities to be incorporated.

1.10 Significance of the Study

The study attempted to provide a deeper understanding of the ANUL's change management process during system migration from manual to the automated system. No known studies had examined this phenomenon before this study. As such, this work has pragmatic, knowledge base, policy and self-actualization significance. Specifically, it:

1. Identifies gaps and deficiencies of ANUL's change management process which can be used by library management to inform their decisions on corrective actions to take that can lead to future successful systems implementation. Analysis of the process, support system and challenges experienced during the system migration established areas of weaknesses to address in any future change process.
2. Provides constructive feedback of the new system performance through insights from library staff and users' perceptions of the strengths and weakness of new system as envisaged in objective four of the study.
3. Sensitises the library staff on various elements of strategic change management. This work reviews the theoretical, empirical and conceptual literature on change management relating it to the change management process and practice at ANUL. It also attempts to demonstrate the significance of adopting a strategic management approach by looking at the consequences of its absence and recommending as well as reiterating the importance of particular elements/activities/processes.
4. Lends support to the body of knowledge on critical success factors for change management process in the context of university libraries. Both the reviewed literature and the study findings contribute to the general body of change management knowledge particularly, in the context of university libraries.
5. Provides analytic generalisation to other academic university libraries whose contexts are relatively similar given their common purpose. Firestone (1993) identifies three broad methods for generalising qualitative data: (1) Sample-to-population extrapolation involving generalizing results from a sample to a population (2) Analytic generalisation of results to a broader theory, and (3)

Case-to-case transfer results from one case to another case. Going by the arguments advanced in his work, the findings of this work can be used for analytic generalisation to other universities libraries as their transformative changes are relatively similar.

6. Provides baseline findings upon which future research related to change management in academic libraries in Kenya can be carried out following the results of review of literature that shows a dearth in documented literature in the area.
7. Recommends a library change management strategy that may also be used to inform change management approach during other campus-wide project implementation. Notwithstanding the variations in the type of change, with minimal modifications, the proposed change management strategy can serve as a guide during any other change initiative in African Nazarene University. The change strategy is largely informed by best practices drawn from the literature and therefore has sound background.

1.11 Scope of the Study

The study employed a case study research design. It was limited to Africa Nazarene University main campus library. The target respondents were the library staff, ICT Staff, and Full-time faculty staff and students who had lived through the system migration. Its core focus was on the change management process and practice during system migration.

1.12 Definition of Terms

Change Agent: Someone who knows and understands the dynamics that facilitate or hinder change. Change Agents define research, plan, build support, and partner with others to create change.

Change management: Change management is a systematic approach encompassing a set of best practices, experiences, processes, tools and techniques to dealing with change both from the perspective of organization and individual level.

Migration process: this describes the phases of the transition and their subsequent activities.

System Migration: A system migration might involve physical migration of computing assets, or shift from a manual system to an automated system as is the case in this study.

1.13 Chapter One Summary

This chapter has introduced the core concept of the study – change management. The discussion on constituents of change management revealed that there are various perspectives to the change phenomena including the task of managing change, an area of professional practice, and body of knowledge and control mechanism. Their variations into the underlying notions of change management largely account for differences in the focus of research and approach to the strategies adopted in managing change. Also, the chapter revealed that contextual environment significantly impacts on the change management strategy adopted by an organisation.

While there are many factors driving change in libraries, the developments in ICT is the most predominant factor influencing transformative services witnessed in contemporary libraries today. Subsequently, change has become a daily experience

for academic libraries. This is not exceptional for ANUL. In an effort to remain relevant, the library has transited from its manual system to an automated system albeit not very successfully.

The chapter ends with a statement of the problem, aim, objective, research questions, scope, limitation of the study and a statement on the significance of the study. The next chapter reviews theoretical, conceptual and empirical literature on change management and related issues.

1.14 Limitations of the Study

This study largely restricted itself to the process of change management during a library system transition. As such the study cannot claim to provide a holistic understanding of the change management practice in Nazarene University Library from all viable perspectives.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

A literature review is an evaluative report that describes, summarises, evaluates and clarifies studies and other works related to selected area of study. It gives a theoretical basis for the research and helps one determine the nature of their research (CQUniversity Library, 2016). According to Boote and Beile, (2005), literature review goes beyond the search for information to include the identification and articulation of relationships between the literature and the field of research. They identify four types of literature reviews: Traditional or narrative, systematic, meta-analysis and meta-synthesis.

The review of literature in this chapter integrates two approaches: narrative review aimed at summarizing different primary studies from which conclusions related to the study focus are drawn and thematic review aimed at drawing an understanding from different point of views on the central focus of the study – the change management process. The ultimate purpose of the integrative review is to synthesize the accumulated state of similar or related topics to change management phenomenon, pointing out the important issues and trends in body of scholarly writing.

This chapter reviews the theories/models, concepts, empirical and conceptual literature that explains the change management dynamics. While the extensive literature on change management covers a wide variety of themes, this study limits itself to six major themes which underpin the study objectives: The change phenomenon, culture of change, change management process, drivers of change, the change challenges associate with change management and change management

strategies. However, to provide an understanding of the context of research study, I have also undertaken a review of shifts in academic libraries with particular attention to social economic and technological changes that are forcing libraries to adopt new business processes and service delivery.

2.1 Theories and Models on Change Management

Sunday (2013) describes a theory as a framework for observation and understanding, shaping both what we see and how we see it. It allows the researcher to make links between the abstract and the concrete, the theoretical and the empirical, thought statements and observational statements. Adding that it is a generalised statement that asserts a connection between two or more types of phenomena. Thus theory acts as paradigm which underpins research design and informs a phenomenon under investigation. Tichy (1993) concludes that change models and theories are the frameworks upon which change approaches are built on and implemented. They constitute any set of assumptions and beliefs that, when combined in a systematic fashion, results in some form of change in the organisation.

Many theories and models have been used to provide an understanding of the change management. Their sheer numbers can be explained by their differences in the way they present the change concepts, the complexity of change being addressed, the drivers of the change, and the change maturity of the organisation amongst others. Attempts have been made to categorize these theories based on their specific assumptions. **Table 1** provides a summary of these categories and their underlying assumptions. A review of these models and theories shows that the assumptions underpinning personal change have also been used in explaining change in organisations.

Table 1: Categorization of Change Models/Theories

CATEGORY	UNDERLYING ASSUMPTIONS	CHANGE FOCUS
Top-down change management	Change can be executed smoothly as long as initiators of change plan things properly	Change the culture of the organisation i.e. ways of doing things
Transformational change management	People can be persuaded to think 'outside the box' and be innovate	Provide transformational leadership to set personal example and challenge others
Strategic change management	People can be persuaded as long as they understand and appreciate the implication of the change	Internalized the change in their 'ways of working
Empirical-Rational (E-R)	People are rational beings and will follow their self-interest – once it is revealed to them through incentives	Provide truthful and concrete information through effective communication proffering of incentives
Normative - Reductive	People are social beings and will adhere to cultural norms and values	Redefine and reinterpret existing norms and values, and develop commitments to new ones.
Power-Coercive	People are basically compliant and will generally do what they are told or can be made to do	Provide clear directions backed by exercising authority and imposing sanctions
Environmental - Adaptive	People oppose loss and disruption but they adapt readily to new circumstances	Build new norms and gradually transfer people from the old ones to the new ones

Source: Adeyoyin, Imam, & Bello (2012); Passenheim, (2010).

According to Mento, Jones and Dirndorfer (2002), three of the most popular change management models are Kotter's strategic eight-step model for transforming organisations, Jick's tactical ten-step model for implementing change, and General Electric (GE)'s seven-step change acceleration process model. An additional change model that has received wide recognition is Kurt Lewin's change model. Other collaborating theories and models that inform change management are drawn from organisational learning, total quality management, and process re-engineering subject

fields. A review of four dominant theories from the mainstream change management literature is provided below.

2.1.1 Kurt Lewin's 3 Step Change Model

One of the earliest change models to be developed is that of Kurt Lewin's 1951 3 step change model. This model provides a three steps framework for handling people during a change process: unfreezing, changing, and refreezing is summarised in Figure 1. Lewin's model is founded on the premise that the key to resolving societal issues is to facilitate planned change through learning thereby enabling individuals to understand and restructure their perceptions of the world around them. As such, the model has been associated with intentional change implemented in organisations who may choose to use a range of strategies to implement the intended change (Baker & Branch, 2002). It also assumes that in any change process, each of the three steps must occur sequentially and that successful change can only happen if people affected accept it.

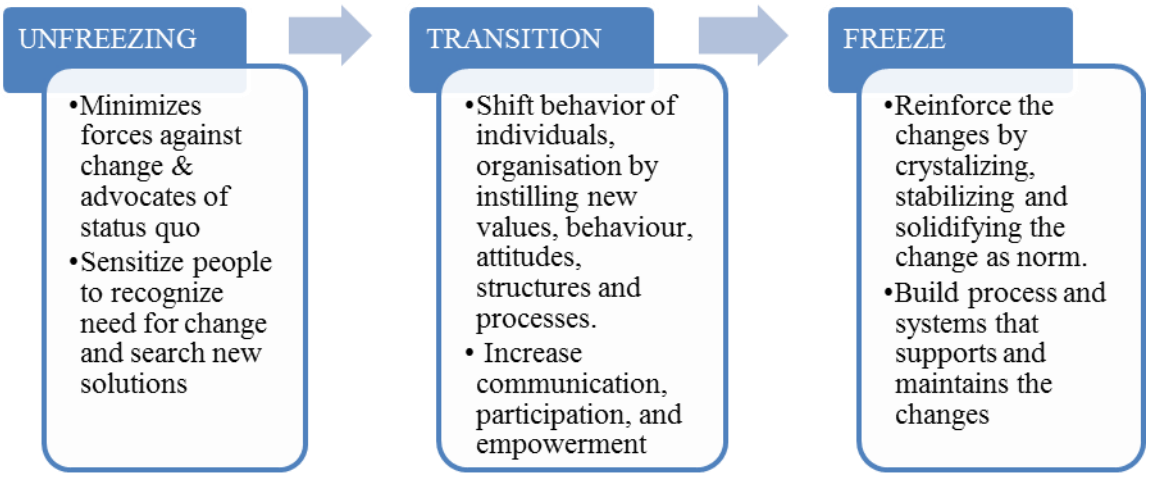

Figure 1: Kurt Lewin 3 Phase Change Management Model

Source: compiled from
http://kfknowledgebank.kaplan.co.uk/KFKB/Wiki%20Pages/Managing%20strategic%20change.asp

Notwithstanding its long-term dominance on the theory and practice of change management, Lewin's model has come under several criticism. Burnes (2004), in his appraisal of Kurt Lewin's planned approach to change management, cites the following criticisms levied against the model: (1) Its inflexibility particular in regard to its argument that if the three stages are not followed, then changes will be short-lived, (2) Its simplistic and mechanistic approach for a volatile environment characterized by continuous changes such as those advanced by emerging ICTs, (3) Its limited application to only incremental and isolated projects compared to radical and transformational changes, (4) its obliviousness of organisational politics and power centers, and (5) its orientation to top-down management driven approach with little consideration to situations calling for bottom-up approach. Taking these factors into account plus the fact that libraries are fluid entities with rising transformative services and operations, the freeze, much less refreeze phases were deemed to be impractical in explaining the change process in the study context thus this model was considered inadequate for the study.

2.1.2 Kotter's 8 Step Change Model

Developed by Harvard University Professor John Kotter in 1996 and modified in 2014, Kotter's 8 Step Change Model (**Figure 2**) identifies eight critical success factors for obtaining and maintaining organisational change initiatives.

Kotter's 1996 8 step change model	Kotter's Accelerate 2014 8 Step Model

Figure 2: Kottler's 1996 & 2014 8 Step Models
Source: Kotter International (2014); Tangient LLC (2016)

Table 2 provides a summary of the differences between the two versions of Kotter's models (Kotter International, 2014). The 2014 version of the model provides for a smooth, and flexible transition that takes to account the environmental context and at the same time continuously re-evaluating and readjusting the change approach as it progresses. It also calls for wider participation of the stakeholders than the previous model did.

Table 2: Differences in Contexts and Objectives between Kotter's 1996 8 Step Change Model and Accelerate 2014 8 Step Model

Leading Change's 8-Step Process (1996)	Accelerate's 8-Step Process (2014)
Respond to or affect episodic change in rigid, finite, and sequential ways	Run the steps concurrently and continuously
Drive change with a small, powerful core group	Form a large volunteer army from up, down and across the organization to serve as the change engine
Function within a traditional hierarchy	Function in a network flexibly and agilely outside, but in conjunction with, a traditional hierarchy
Focus on doing one new thing very well in a linear fashion over time	Constantly seek opportunities, identify initiatives to capitalize on them, and complete them quickly

Source: Kotter International (2014)

Several authors have pointed out limitations of Kotter's model (Pryor, Taneja, Humphreys, Anderson and Singleton, 2008; Appelbaum, Habashy, Malo and Shafiq, 2012; Normandin, 2012; Venkateswaran, 2014). Its fixation on change as a one-time process followed to its end is one of its principal drawback identified. This assumption contrast other findings that show change process as going through a set of phases with each phase lasting a certain amount of time. Mistakes at any of the phases could consequently impact positively or negatively on the overall success of the change initiative (Pryor et al., 2008).

It has also been criticised for largely compelling people to show more zeal in their old ways of conducting business instead of driving people out of their comfort zones through creating a sense of urgency as it purports. It is arguably considered to have a tendency of increasing the chance of creating urgency without a vision especially when there is no effective communication explaining the need for change.

Further, Kotter's model is considered weak in sustaining change. Although strong on initiating change, step seven that purports 'consolidating gains and producing more change' does not seem to give much in the way of specific guidance for sustaining change. Lastly, like Kurt Lewin's 3 Phase Change Management Model, it has been shown to be essentially a top-down model and mechanistic.

Kotter's 8 Step Change Model was therefore rejected for use in this study because two main reasons. Fast it is its' linearity assumptions that once the process has started, its direction cannot change. Second, it does not accommodate teamwork, co-creation and other forms of genuine participation since it is clearly top-down.

Notwithstanding the Accelerate 2014 version of the model that considerably addresses some of these weaknesses as earlier demonstrated in Table 2, the study rejected it not necessarily for any identified weakness but mainly for its underlying assumption. For example. At the core of this accelerated model strategic approach, is the assumption that an organisation has a general level understanding and appreciation of the critical success factors to change management. For instance, it assumes that anything that may be conceived as getting in the way of achieving the new initiative's vision can quickly be identified and solved. In addition, it assumes that an organisation will always have large "volunteer army" representing all levels of employees across the organization who would buy into the message of change and committed to it. Above all, that organisations have flexible structures that allow them to remain sufficiently agile to react with creativity to emerging change and opportunities quickly. Going by the slow transition to the new system, the study assumed that contextual conditions of ANUL were far from that expected of the accelerated model. The study concludes that this model is more appropriate for organisations whose change management strategy is at an advanced level of maturity.

2.1.3 General Electric (GE)'s Seven-Step Change Acceleration Process (CAP)

CAP's model (**Figure 3**) emphasise the leader's role in creating urgency for the change, developing and communicating the vision, leading the change, and measuring the progress of the change across several dimensions (Metre, 2009).

Figure 3: The Change Acceleration Process
Source: Sardella (2014)

Its seven steps include:

1. Providing clear explanation of reasons for change: This step is about creating and choosing communication strategy that is effective in defining the overall approach and tone of change management communications which should inspire action and not despair.
2. Establishing the vision: Ensures that those driving the change initiative have considered the expectations and needs of all stakeholders inside and outside of the organization prior to investing efforts into the change plan. It advocates for change leaders to take a systematic approach to incorporating stakeholders so as to minimize the potential of any stakeholders or stakeholder groups being unintentionally omitted.
3. Lining up leadership: This step demonstrates how the sponsorship of senior leaders in organizations is crucial to the success of change initiatives. The module describes the role of sponsors, the typical characteristics that sponsors should exhibit, and outlines many specific ways that change managers can ensure sponsors are engaged throughout the change process.

4 Mobilizing the workforce (make them part of planning/definition of change): The step shows how the journey that individuals undergo during a change initiative is sometimes conceptualized as a change curve and how learning programs and coaching can assist those people to progress along the curve. It points out on factors to be considered when creating learning and coaching programs.

5. Measuring the progress: This outlines why change management leaders should develop a suite of measurement tools that can help them to assess both the outcome of the change initiative as well as the effectiveness of specific change management activities to make on-the-fly adjustments.
6. Maintaining consistency/stay the course: Stresses on the need for change agents to outline the concept of resistance to change, be on the lookout for reasons staff can resist the change.
7. Changing the systems and structures: Using specific metrics, this phase involves discerning the changes that have taken place and their impacts distinguishing between incremental and transformational change. It further explores the features of organizations upon which change operates and describes how the support of stakeholders at all levels of seniority maximises the likelihood of change initiative success. Considerations within this phase include staffing, training, reward structures, communications and roles and reporting relationships ("Overview of GE's Change Acceleration Process (CAP)", 2016)

The General Electric seven-step change acceleration process was considered unsuitable for this study due to its overemphasis on the role of the leader ignoring the staff who are directly affected by the change.

2.1.4 Jick Todd Change Model

This study settled for the Jick's ten- step model of 2003 summarized in **Table 3**. It presents change as an ongoing process that continually addresses issues emerging at each step of the process.

Table 3: Jick Todd 10 Step Change Model

	STAGE	DESCRIPTION
1	Analyze the organizational need for change	Assesses the specific organization and its actual need for change.
2	Create a shared vision and common direction	Creates a shared vision to guide the direction for driving change
3	Separate from the past	Separates current change initiatives from initiatives that have been undertaken in the past
4	Create a sense of urgency	Creates urgency around the vision and separating achievements made in steps 2 & 3
5	Support a strong leader role	Provides support to strong leadership and team that can support and execute the change vision
6	Line up political sponsorship	Solicit support from senior management and key influencers
7	Craft an implementation plan	Develop an implementation plan
8	Develop enabling structures	Develop an enabling structure, removing any foreseen obstacles
9	Communicate, involve people and be honest	Disseminate an honest message amongst the change agents and the recipients of change
10	Reinforce and institutionalize the change	Reinforce and institutionalize the change ensuring that the effort is sustainable

Source: Adapted from Mento, et al. (2002)

2.1.4.1 Application of Jick's Model

In increasingly volatile environments, continuous examination of market forces is critical for survival. It is expected that any transformative initiative will be based on sound interpretation of the implications of these environmental forces including the threats and opportunities it opens to the organisation. Metre (2009) studied Jick's model in a study on 'Deriving Value from Change Management' and concluded that Jick's approach to implementing change is much more pragmatic as it involves assessing an organization's actual need for change. This explains why the first step involves assessing the specific organization and its actual need for change. Thus objective one of the study sought to establish the reasons for ANUL's decision to migrate from its manual to automated system.

Understanding not only the drive for change but also an organisation's history of change is essential in the design of strategic change management initiatives. In the light of this, objective two of the study was structured to examine how the transition from the manual to the automated system was actualized. Objective three extends this understanding by assessing the change management maturity of ANUL. This includes determining the level of involvement and role played by stakeholders and facilitations for the change process such as communication, sponsorship, stake holder's management, institutional readiness and stakeholders' sensitisation and training.

Disengaging from the past is critical to awakening to a new reality. In his third step, Jick indicates the importance of separating old structures and routines that no longer serve the interest of the organisation while hanging on and reinforcing those that bring value to the new vision. He notes that in doing so, some stability is maintained for continuity even in the midst change (Jick, 1993). In the case of this study, efforts were

made to draw an understanding the depth and scope of impact of the transition. This involved analysing which areas of the business operation were affected and how from the stakeholders' perception and response to the new library system in objective four. Complementing the first step that scans the environment for threats and opportunities that may force an organisation to make a change, Jick's fourth step involves creating urgency around the vision. When a library is facing change due to technology, competition from other service providers and changing user demands and expectations, the need for transformation is inevitable. Jick suggests that sense of urgency is essential to rallying an organisation behind the change. Objectives one and two of the study were thus designed to establish the drivers and process of change respectively. While the first objective determined what informed the decision to change from one library system to the other, the second objective in part, aimed at understanding how the stakeholders were informed and involved in the decision.

The fifth and sixth step of Jick's model advocates for a strong leadership and political sponsorship respectfully. During migration from one system to another, Jick observes that it is crucial for a change orientated leader to have a team around him or her that can support and execute the change vision. Prosci (2012) cautions that the absence of a team and sponsor to support a change management strategy could greatly impact the successful implementation of the set plans. The leaders establish the vision, communicate with the stakeholders amongst others. A study on the perspectives on innovations in academic libraries carried out in six universities listed leadership as the most significant driver of change in libraries (Jantz, 2012a). By gathering perspectives of the existing structures and support systems for library system migration in objective three, this study acknowledges that successful migration is inspired by not

just the management, but by a commitment and visionary leadership and sponsorship. It was, therefore, essential to establish the presence of these categories of stakeholders and determine their contributions.

In the 6th stage, Jick stresses the need for seeking support from managers and other influential recipients comprising a team of enthusiastic members. According to Malhan (2006), for change management to succeed in a library, it is crucial that the university leadership provide firm commitments to develop and sustain the initiative. Prosci (2014) similarly underscores the important role played by leaders and executives in developing plans for sponsorship activities and in executing these plans. Thus object three of the study sought to assess the support system in place for the migration. Amongst areas of interest was the role of the university library management in change management process. An assessment of ANUL's change management readiness anchored on, amongst others, sponsorship pillar was also used to establish the presence, if any, and participation of the sponsors and change management team.

Jick's 7th step encompasses crafting and creating an implementation plan. This involves developing plans and strategies which would provide an enabling environment for achieving the envisioned goals. Best change management practices have been associated with the use of a structured approach to change management (Prosci, 2014). Such structured approaches not only prepares organisations to be proactive and therefore anticipate change, but they also provide a roadmap for engaging and mobilising impacted employees. Robbins (1990) maintains that all change initiatives must be planned in consultation with the staff. The employees must, however, buy into the change urgency, commit to it, and feel motivated to be a part of

the transformation. Those affected by the change must feel that this is something they ‘need to’ do rather than something they 'have to' do.

Complementing this is Jick’s 8th step that focuses on developing an enabling infrastructure that would support successful change management. Depending on the complexity of the change initiative, this may take any form ranging from practical (workshops, training programs) to symbolic (such as reorganising the organisational structure or work process).Thus objective 3 of the study looked the policies and guidelines supporting the change process, technological infrastructure in place, human resource capacity amongst other change enablers.

The 9th step of the model hinges on communication before, during and after the transition. It infers to the dissemination of right message amongst the change agents and the recipients of change. Literature indicates effective communication majorly reduces levels of resistance to change and accounts significantly for the success of IT implementation projects (Munassar, Ghanim & Dahlan, 2013). Accordingly, in objective 3, the study examined the change management maturity level of ANUL that included communication strategy adopted by the institution.

Successful transformation implies that the change needs to be assimilated into the organisation. This means that it has to be normalised in the culture of the organisation and the link made between the new behaviour/process and organisational success. Jick’s 10th step, is, therefore, concerned with the reinforcement and institutionalisation of the change. Apart from seeking the opinion of the respondents on the way forward concerning change management, the study, drawing from the findings established and informed by the extant literature on change management,

proposes a strategy for successful system migration at ANU. Besides, it suggests recommendations that would address some of the identified challenges currently being experienced and hopefully, alleviate future occurrences.

To ascertain the value addition of Jick's model, the study mapped Jick's model against GE's, Kotter's 1995, and Kurt's models (**Table 4**). The results revealed that while Jick's model shares some common notions with the rest, in comparison, it is more elaborate in its categorization of activities expected to be undertaken in a change management process. Phases of Jick's model mirrored in the other models are limited. For example, step 3 and 7 of Jick's model are only shared with Lewin's and Kotter's 2nd and 6th stages respectfully. Jick's 4-6th stages, however, are not explicitly replicated in any of the other three models.

Table 4: Mapping JICK's Todd 10 step Change Model to Kotter's, GE's and Kurt's Models

JICK TODD 10 STEP CHANGE MANAGEMENT MODEL	KOTTER'S (1995) 8 STEP CHANGE MODEL	GE'S 7 STEP CHANGE ACCELERATION PROCESS	KURT LEWIN'S 3 STEP CHANGE MODEL
1. Analyze the organization and its need for change 2. Create a shared vision and common 3. Separate from the past 4. Create a strong sense of urgency 5. Support a strong leadership role 6. Line up political sponsorship 7. Craft an implementation plan 8. Develop enabling structures 9. Communicate, involve people, and be honest 10. Reinforce and institutionalize change	1. Establish a sense of urgency 2. Create a guiding coalition 3. Develop a shared vision 4. Communicate the vision 5. Empower employees for broad-based action 6. Plan & Generate short-term wins 7. Consolidate improvements & produce more change 8. Institutionalize the new changes	1. Clear explanation of reasons for change 2. Establish the vision 3. Line up leadership 4. Mobilize the workforce 5. Measure the Progress 6. Maintain 7. Consistency-stay on course 8. Change system and structures	1. Unfreezing 2. Transition 3. Freezing

MAPPING MATRIX

MODELS	STAGES									
Jick Todd 10 Step Change Management Model	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Kotter's (1995) 8 Step Change Model	-	2 3	-	-	-	-	6	7	4 5	-
GE'S 7 Step Change Acceleration Process	1	2 3	-	-	-	-	-	3		5 6
Kurt Lewin's 3 Step Change Model	1	-	2	-	-	-	-	-		3

Nos. represent the stages in the various models explicitly mirroring those of Jick's mapped against their equivalent placing in Jick Todd's Model

2.2 The Change Phenomenon

The concept ‘change is described variably in the literature. For example, as a form, changes take the form of procedures, structures, rules and regulations, technology, training and development and custom (Kanji & Moura, 2003). In terms of occurrence, it is seen as either being slow or abrupt, sporadic or ongoing, continuous or incremental (Pryor et al., 2008). With respect to impact, (Nadler & Tushman, 1995) classifies it into three categories:

1. Fundamental (referring to the application of a standards-based approach resulting in dramatic changes in the organisation),
2. Transitional relating to the introduction of mergers, new processes or technologies resulting in slow progression of the organisation), and
3. Transformational (indicating the organisation’s mission, culture, activities and critical elements of success)

Change has further been described as planned or unplanned/sudden. Aljohani (2016, p. 320) describes four such possible types of change that may occur in an organization:

1. Operational changes that influence active business operations of an organisation, including the automation of a specific business area,
2. Strategic changes that take place when the business direction or the strategy is affected such as changing from a business growth to market share business,
3. Cultural changes that influence the organizational philosophies such as the way the business is conducted, and
4. Political changes that occur primarily due to political reasons.

No matter what the perspective of change, there is a consensus that it results in a transition from the old to the new. The extent to which it impacts on an organisation or individual is, however, a factor of how systematically it was planned for and whether the need for the change was considered necessary. Thus within the context of organisations, Kanter (1992, p. 279) defines change as:

> … the crystallisation of new possibilities (new policies, new behaviours, new patterns, new methodologies, new products or new market ideas) based on the reconceptualised patterns in the institution. The architecture of change involves the design and construction of new patterns, or the reconceptualisation of old ones, to make new, and hopefully more productive actions possible.

Deducing from these conceptions of change, it is appropriate to conclude that change management involves the process of implementing changes in an organisation in a controlled manner to achieve better results. Alternatively, as Metre, (2009) puts it, it is the systematic approach and application of knowledge, tools, and resources to leverage the benefits of change. On this basis, Dervitsiotis (2003) advises organisations to deliberate on the kind, depth, and complexity of the changes before implementing them.

Paton and McCalman (2008) acknowledge that management and change are synonymous. It is very hard to work with one and leave the other one out. Managing change is about handling the complexities of a journey: it is about evaluating, planning and implementing operational, tactical and strategic journeys. Nickols (2004: p.1) identify two meanings associated with the term ‘managing change’: “the making of changes in a planned and managed or systematic fashion” and “the response to changes over which the organisation exercises little or no control.” The management of both is considered crucial for a successful transition.

2.2.1 Changing Culture

An organisational culture that is adaptive to change, variably referred to as a learning organisation, is more likely to have successful change transition than one that is not (Adeyoyin, 2006). While environment pressure may be responsible for the evolution of some organisations, for others it may be due to a proactive anticipation for the necessity to change. However, in spite of what drives the change, the process of successful change in organisations is estimated to usually take about 6-15 years (Hilb & Dubs, 2012) particularly for organisations with adaptive culture and environment for change (Connell & Burgess, 2006).

In a recent research study, Prosci (2016), found that 90% of the participating institutions rated cultural awareness as either essential or critical. Not only was culture important, but they also established four specific ways that cultural awareness influence change management practices and approaches; It creates opportunities for customization, promotes cultural-specific adaptations, avoid cultural-specific obstacles, and forces organisations to think through their communication needs. Earlier study (O'Donnell, O., & Boyle, R., 2003) had put this to six as shown in **Figure 4.**

Figure 4: A Framework for Understanding and Managing Culture
Source: O'Donnell, O., & Boyle, R. (2003, p.68)

The works of these authors clearly demonstrate that developing an organisational culture of change is a result of multiple efforts. Cumulative research, however, shows a tendency by many leaders to believe that it is easier to change or physically replace the people rather than adopt a change culture owing to the high cost, time and difficult involved in changing a culture. Holders of this view promote people who fit in their current norms of the organisation, perceiving this to be the easiest, if not only the way, to change the organisation's culture (Cameron & Quinn, 2005).

Deal and Kennedy (as cited in Adeyoyin, 2006, pp. 8-9) provide five reasons that would justify a large scale cultural change in a library environment:

1. The organization has strong values that do not fit in to changing environment,
2. The industry is very competitive and moves with a lightning speed

3. The organization is bad or worse,
4. The organization is just about to join the ranks of the very large companies, and
5. The organization is small but growing largely

On the face value, the above factors assume that libraries have a choice in adopting a changing culture. But as Adeyoyin (2006) is quick to caution, libraries' old values do not always fit a contemporary dynamic environment. Instead, he concludes that a large-scale cultural change among the librarians is necessary to join the electronic age. Irrespective of the reasons for the change, any form of transformation, certainly has an impact on the culture of an organisation promoting Schein (1985, p. 9) to defined change a:

> "A pattern of basic assumptions that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems".

In the light of the above discussions, organisational change culture is hereby considered as an integral part of libraries particularly as transformation in their business activities is as prevalent as developments in ICTs.

2.3 Drivers of Change

Paton and McCalman (2008) observation that institutions, organizations and even individuals are embracing change due to various factors remains true even today. The drivers of these changes are multiple. Pryor et al., (2008) shows the diversity of both domestic (national) and global forces that may impact on an organisation (**Figure 5**).

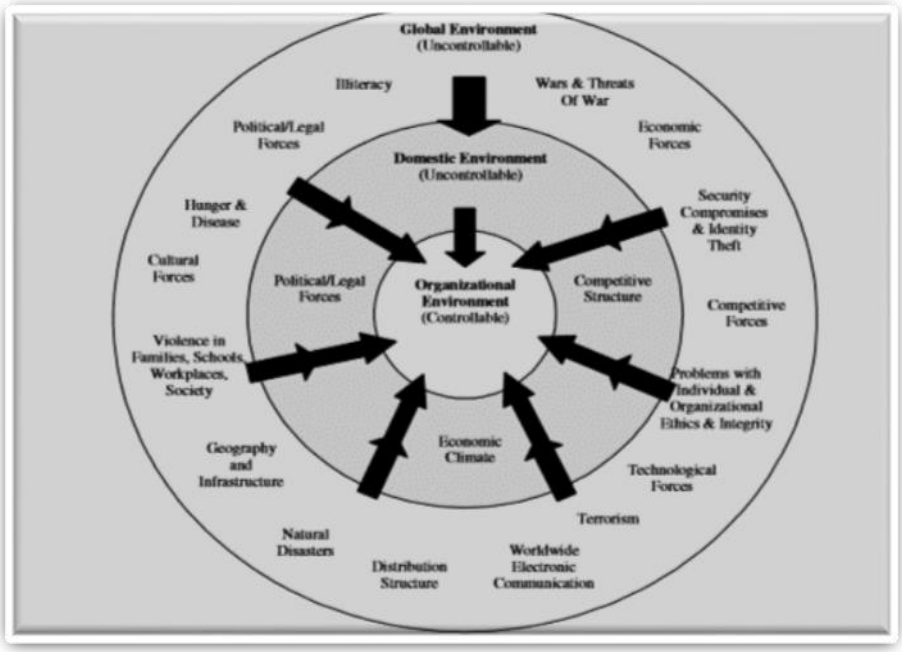

Figure 5: Forces Driving Organisational Change
Source: Pryor et al., (2008, p. 4)

McMillan on the other hand (2004) clusters these forces into six categories:

1. Advances in technologies that have transformed communications, electronics, consumer markets and revolutionized industries,
2. Globalisation resulting in an interconnected and interdependent as information systems,
3. Heightened competition leading to rise and fall of giant firms,
4. New business processes and practices,
5. High pace in virtually all spheres of life - Speed –technological speed and individuals lives alike, and
6. Growing complexities, paradoxes, and uncertainties in the organisation.

Several studies have examined these in the context of libraries. For example,

Adeyoyin et al. (2012, p.6) describes these changes as:

> …. changes in the environment – market or technological, deal with the new arrangements required following an acquisition, merge or takeover or to eliminate overlapping areas of activity. …to cater for the introduction of new activities or the elimination of old ones, gain economies of scale by amalgamating activities, facilitate better coordination, control or communications and to decentralize operations to place decision making closer to the point of action, to reduce the size of an unwieldy head office and/or to cut down on bureaucracy, centralize operations to provide for better control from the top, accommodate management changes and to 'shake up the business a bit'- management have been known to articulate a belief that change is a stimulus in itself.

Regardless of which forces influencing an organization's decision to shift from one status to another, much of the conclusions arrived at by empirical works shows that the predominant factor is the need to continually improve productivity and efficiency (Arnetz, 2005 cited in Pryor et al., 2008). No wonder Nkagisang (2007) predictions that "change will not disappear, neither will technology dissipate for as long as civilisations and creative thought maintain their ever-accelerating drive" is valid even to this day.

Demonstrating this, Luecke (cited in Paton & McCalman, 2008) aptly points out to the state of continuous change that has almost become integral to organisations. They further predict that managers and their institutions, be they from public or private, service or manufacturing, will continue to be judged by their ability to effectively and efficiently manage change. Nothing can be far from the truth to their prediction then than now; it is tough to live in a world that is experiencing such significant global changes without embracing change.

Historically, change was often considered a momentary turmoil that upset the status quo and just as quickly subsided into a new norm (Doerscher, 2011). Subsequently, specialised consultants managed the emerging unique or significant change events. However, the 21st-century pace of innovation is driving organisations, strategies, and deliverables to evolve continually. The life expectancy of products and services continues to reduce as new advances overtake yesterdays. These innovations have changed the perception of change and the acceptability that change is the only constant. We can reasonably conclude that change is no more a matter of choice, rather, it is the most important obstacle to be surmounted by individuals and organisations that desire to survive.

Jantz (2012a) groups the factors that bring about change in academic libraries into four categories namely: changing trends in higher education, economic, technological and organisational factors. Collectively, they have forced universities and their affiliated libraries to undergo transformations to remain relevant in the current and competitive areas of operation (Malhan, 2006; Tam & Robertson, 2002; Soehner, 2014). Today, changes in the information services is the norm prompting Purg (2007) to remark that it has assumed a character entirely unforeseen.

2.3.1 Changing Trends in Higher Education

Like any business enterprises, educational institutions around the world are undergoing significant changes and completion. These transformations are majorly the result of globalisation, growing competition in higher education sector, and development in ICT amongst others. Prosci (2016) in **Table 5** accounts more explicitly for global forces driving changes in educational services grouping them largely into three categories: market, operational and budgetary forces.

Table 5: Forces of Change in Educational Services

MARKET	OPERATIONAL	BUDGETARY
Increase in competition	Changes to curricula	Budget changes
Consolidation	Changes to student relations	Changes to federal/state funding
Increase in government regulations	Increased diversity	
Change to demand	Shifting student demographics	
Increase demand for eLearning and virtual products	Increased collaboration with commercial sponsors	

Source: Prosci (2016)

Higher education is experiencing a massive change in matters of student numbers, teaching and learning patterns and funding levels. An academic library whose core function is supporting the learning process is directly affected by the institutional changes and issues taking place in its parent institution (Nicholas, Rowlands, Jubb, and Jamali, 2010). Life-long learning has become a key theme of discussion as we observe a widening participation in higher education receives. Every year a larger number of students gets enrolled in the universities which place enormous pressure on the universities and the libraries especially when this is not supported by a corresponding increase in staffing and funding (Nicholas et al., 2010). Categories of students such as distance learners, mature students, and oversea users all have different modes of attendance, qualification, experience, expectations and patterns of library use. These necessitate diversified and innovative customised information service models to meet individualised category needs. Many institutions of higher

learning are adopting e-education initiatives and their associated technologies so as to provide the users with robust lifelong learning environment (Tam & Robertson, 2002). Continuing education is needed to maintain employment prospects in an increasingly competitive workplace.

2.3.2 Economic Factors

Trol (2002) points to disparities in funding to libraries over the past few years. While some libraries are receiving slight increases in both their materials budget, educational and general operating budget, others are only given additional funding when their institution creates new degree programs or research centres. Other libraries, however, are expected only to stretch their existing materials budget to cover the new information needs. Current resources appear to be insufficient to the simultaneously growing population. (Nicholas, et al., 2010), adding to another dimension of reduction in library funding points out the increase in the price of all library materials beyond the rate of inflation and the massive rise in the volume of new books and journals published. Wood and Walther (2000) on the other hand attribute this financial status of libraries to a technology revolution that is taking over substantial amounts of academic library budgets.

Together, these factors place libraries in an awkward position, leaving many libraries unable to continue sustaining their current collections as their budgets decrease and the cost of many electronic resources increases by double digits (Collins, 2012). These factors too have affected the library's growth, the services it can offer, its staffing levels and its ability for strategic development (Tam & Robertson 2002). Under such circumstances, libraries are forced to adopt to more cost-effective ways of providing services.

Despite this apparently deprived state, the constraint on public funds is seemingly encouraging a climate of innovation. Increasingly library and information services are exploring markets and commerce, new customer sectors, added-value services, and new responsibilities. The libraries are undertaking these initiatives in the wake of recognitions that while public obligations must be sustained, at the same time innovation and adaptation engendered (Roberts, 2003).

2.3.3 Technological Factors

Technology remains a significant driver of change influencing how people work, seek information, socialise, and communicate. For the library, there is a stronger emphasis on content, context, customer service, training, and collaboration with information technology staff. Information technology, computers, networks, and the World Wide Web being ubiquitous (Drake, 2000).

New formats of information and new service delivery models have come up due to technological advancements. These include electronic books and journals, virtual services such as virtual reference services, social media amongst others. With the opportunities opened up by technological advancements, there is almost a challenge arising. Nicholas et al. (2010) observe that though technological advancements have increased the capabilities of library services enormously such as creating options for networking to provide access to vast stores of electronic information, it has also created extended pressures and drains on a library's resources.

A further challenge is the prevalence of greater levels of alternative information service providers and access points such as public bibliographic services, mobile applications, cloud computing, augmented and virtual reality, discovery tools, open

content, open source software, and new social networking tools (Yi, 2012). These have raised users' awareness and expectations of what services and facilities the library ought to provide. As a result, libraries have been put under pressure to expand their holdings through subscription of e-resources, inter-library loan services, and remote access to information services amongst others. These calls for transition to new ways of service delivery, hence change management.

2.3.4 Organizational Factors

Academic libraries are not autonomous. Their services and decisions align to their hosting parent institutions. This arrangement implies that developments and politics of their parent organisations heavily influence the workings of the library services. As Düren, (2013) notes, an academic library cannot act independently. It is indirectly or directly affected by events or issues that are taking place in the university. Echoing the same sentiments, Housewright (2009) argues that a library is successful if it serves the needs and priorities of its host institution, whatever those may be. Changes in management and in organisational structure in response to changing needs affect the roles and responsibilities of staff who must provide a more consumer centre service. The need to provide value for money and efficiency partially explains the current trend of convergence between a library and other departments such as the computing departments. This growing trend unavoidably also demands organisational restructuring. Together, these factors only serve to make transition from one system to another more complicated for libraries.

2.4 Shifts in Academic Libraries

Libraries, which are significant components of the universities have been undergoing major metamorphosis as a consequence of pressures facing higher institutions of

learning. As the learning paradigms shift, the need for effective information service provision becomes more notably significant for lifelong learning. Similarly, global economic climate and the continuing shift in technologies are driving an accelerated need for change in academic libraries of the 21st century. The push for new approaches is coming from both within and without and vary in magnitude. They are both content wise and process wise. Notable among them include, but not limited to, decreasing or static budgets, rampant inflation of information prices and information explosion (Nozero & Vaughan, 2000).

With an increased heterogeneous user group and a multifaceted demand of information services, the role of new generation librarian could not be any more challenging (Bridges, (2003). Technological development is gradually changing the role of libraries from sole authority and providers of stored information to gatekeepers – facilitating access to information available in any format from any internal and external source (Chapman, 2013).

In sum, the literature reveals three interrelated modern trends in library and information service. These are:

1. Web-based library and information services (services provided using Internet as medium and library website as a gateway with the help of integrated library management systems),
2. Electronic/digital/web services(services that provide access to web-based resources in the library or remotely on a network), and
3. Services to local/internal digital resources (services to local content such as institutional repositories and archives).

The process of managing these changes in libraries however raises multiple complexes but yet fundamental questions of what and how (Weiner, 2003). In response, universities are almost developing a corporate culture characterised by significant cost reduction, elimination of redundant functions, enhanced effective management and customer care emphasis and active adaptation of new technologies.

2.4.1 Library Automation

Revolutionary changes brought about by the advent of ICTs have reshaped the entire library and information centres systems. Library automation came after the introduction of computers in libraries in the late 1960s marking the beginning of the trend of modernization in library and information management. Tebbetts (2002) describes library automation as the design and implementation of ever more sophisticated computer systems to accomplish tasks originally done by hand in libraries. Shepherd (2000) identifies two primary objectives for library automation: to improve access to information and to decrease, or at least not increase, cost by transferring low-level, repetitive operations to a machine.

One can no longer scorn the power of technology as a changing instrument in libraries. Their incorporation to provide better resources and services to the users has become the hallmark of library modernization thus accounting for most changes being experienced by libraries world over. Technology has increased the physical reach of information service, and facilitated entry of information workers into organisations and areas within organisations where traditionally, they could not be. Evolvement of libraries from managing internal operations to providing access to information in many forms and many locations, enabling libraries to serve a global as well as local clientele, to name but a few (Manjunatha & Shivalingaiah, 2003).

The idea of computer-based solutions to the problems that libraries were experiencing due to a lot of acquisition of information materials became potentially attractive to libraries in the early 1950s. Many libraries then were beginning to face the breakdown of the systems that had served them so well in the past and which incorporated so much of the librarian's professional knowledge. Computers seemed to offer librarians the prospect of more efficient processing, improved services to library users, cost reduction and saving as well as facilitating resource sharing and library cooperation.

Today, the convergence of two technologies often interchangeably used, promises to continue shaping library automation initiatives – Information Technology (IT) and Information and Communication Technologies (ICT). LIS.BD.NETWORK (n.d) definition of Information and Communication Technologies (ICTs) includes both networks (fixed, wireless, satellite and broadcasting) and applications (the internet, database management systems and multimedia tools). The American Library Association (1983, p. 204) defines Information Technology (IT) as:

> "The application of computers and other technologies to the acquisition, organization, storage, retrieval and dissemination of information. Computers are used to process and store data, while telecommunications technology provides information communication tools, which make it possible for users to access databases and link them to other computer networks at different locations

The impact of library automation on libraries and information centres appears to be twofold: the first is in the management of information resources (library housekeeping operations), and the second is in the delivery of library and information services. The

former has seen the application of a range of ICTs in the execution of primary library housekeeping operations such as acquisition, cataloguing, circulation, serials control. **Table 6** lists forms of ICTs, clustered into three categories, commonly found in modern libraries today.

From the Table we see that present day libraries are majorly functioning in a networked and automated environment where every operation operates with the help of one or many of information or communication-based tools. Notable of these are the Integrated Library Management System (ILM's) such as that under investigation in this study. Integrated Library Management System such as LibSys, KOHA, Evergreen, VTLS, Software for University Libraries (SOU), eGranthalaya, Sanjay, NewGenLib, amongst others are used to improve the efficiency of internal library operations, facilitate interoperability of information systems and ease access to library resources and services.

Table 6: ICTs Commonly found in Modern Libraries

COMPUTER TECHNOLOGIES		
Hardware	**Software**	**Storage:**
Personal Computers	System Software	ACD, VCD, DVD-ROM
Mini/Mainframe/Super Computers	Application Software	Flash Drives
Handheld devices	Integrated Library Management System	E-Resources
Storage: CD/DVD	Digital Library Software	e-books
	Digitization Software	e-Journals
	e-learning Software	Databases (Bibliographic, Full text and multimedia)
	Artificial Intelligence	e-learning resources
	Cloud Computing	Electronic Thesis and dissertations (ETD)
		Library consortium
COMMUNICATION TECHNOLOGIES		
Audio	Barcode	RFID
Video	Smartcard	Wireless
Audio-visual	Cell/Mobile phone	Internet
Radio	Smart Phones	Email, Voice mail
Cable	Fax (Telefacsimile)	Instant Messaging (Chat)
Television	Tele-conferencing	Web 2.0/Social Media
Film	Networking (LAN,WAN)	(Social Networking,
Tele-text	Satellite	Blogging, etc.)
Video-text		Voice Over Internet
Telephone		Protocol (VOIP)
Reprographic, Micrographic and Printing Technologies		
Reprographic	Printing (traditional and modern)	3D Printing
Micrographic		Scanners

Source: CBSE Class XII Modern Library and Information Services. Available at https://www.studiestoday.com/node/220701/viewfile.html

2.4.1.1 Emerging Technologies as Drivers of Change in Academic Libraries

Change management is the competitive advantage of an organization for sustaining in the competitive world. The organization has an internal environment but exists in the external environment. To function efficiently and effectively, the organization has to maintain equilibrium between external and internal environment. Change management is the competitive advantage of an organization for sustaining in the

competitive world. The organization has an internal environment but exists in the external environment. To function efficiently and effectively, the organization has to maintain equilibrium between external and internal environment.

The library is the knowledge resource center of any educational organization which imparts service to the user community. With the introduction of ICT, Web 2.0 and various pattern of user's demand and preference, library too faces both external and internal forces. To work efficiently and effectively and to provide quality service to the dynamic environment to the diverse nature of user community/customers, Library has to adopt a strategy for change management to meet the technology trends of providing information (Singha, 2017)

Emerging technologies provide librarians with a unique opportunity to substantially enhance user centered services and to facilitate and promote collaboration between libraries and their users

Change Management is the only feasible solution to overcome all the difficulties and problems created in ever changing environment for the overall development and progress. The libraries of today are moving from traditional system to 'Digital Library' and further to 'Virtual Library'. Accordingly libraries have to adapt to drastic changes to create their own identity to satisfy their users. (Kamila, 2009).

Information, Communication and Technology (ICT), has perpetually changed the operations of activities. It has brought about tremendous change in every profession including the library and information science. The introduction of ICT has no doubt changed and redefined the way and manner in which library operations are carried out. Traditionally, the library housed print materials such as manuscripts, books,

maps etc. Presently, it is commonplace to find libraries housing ICT gadgets such as computers, laptops, CD ROMs, scanners, photocopying machines, printers etc. Many libraries have taken a step further by creating repositories, which houses important publications and makes same available to users remotely. The library has been tagged as a growing organism, the change being experienced now has been long envisaged. With this development, it is of great importance that this change in libraries is well managed. (Adebayo, Fagbohun, Esse & Nwokeoma 2019).

Information Technology (IT) applied to academic libraries has been impacting and changing the library organization and management. The manner in which libraries process, store, and retrieve information is changing, as is the information medium itself, todays libraries are evolving as they continue to embrace new technologies. New IT applications reduce the need for traditional manual processing in libraries, digital and electronic resources change library operations, processes, and workflows, including skills and competencies required for librarians and support staff. The use of ICTs by academic libraries to provide access to resources and services in support of learning, teaching, and research has benefited the library clientele. Learning and research can now be done online without physically being in the library. (Kophuting & Mutshewa, 2017) Changes in the academic area, institutional organizations and leadership, global and local economic situations, information technology (IT) and IT applications in academic institutes, have been rapidly evolving. This volume of change has impacted and caused library management to shift in an attempt to better align with the dramatic changes (Darga & Hu, 2012). Khan (2015) says that change management is the only feasible solution to

overcome all the difficulties and problems created in ever changing environment for the overall development and progress.

One of the more exaggerated predictions about the Internet was that it would spell the end of libraries. This has proved unfounded, but there is no doubt that the impact of information and communication technology (ICT) is one of several factors which make any management job in a library challenging and one requiring flexibility. Castiglione (2007) stated that while library management remained almost unchallenged throughout the twentieth century, new developments with ICT mean that change is happening very fast in the twenty-first. The explosion of the Internet, which means that more and more information is available online, affects both the information that libraries store and the infrastructure needed to contain it: databases as well as paper books and journals, electronic networks as well as shelves. Then there is the related trend to disintermediation, with many believing that all knowledge is contained in Google, so libraries can be bypassed. Academic libraries have to cater for increasing numbers of students and researchers. (Adolphus, 2019)

Librarians are moving into dramatically different roles as new services are implemented. Technology is moving librarians into new roles -- some welcome, some uncomfortable, but nearly all of benefit to library patrons. In most cases these new roles are an addition to, not a replacement for traditional duties. New services will continue to develop, but many traditional library services will continue in some form for the foreseeable future. Libraries are challenged to meet the increasing demand for service with limited staff and budget, but change can be managed by making use of several elements common to most libraries. Each library can develop an individualized change management program that takes into consideration the basic

elements of experienced staff, new hires and creative supervisory practices. The rate of change is breathtaking, especially for libraries that have been accustomed to stability in organization and in funding. Technology is driving change across the entire range of library responsibilities (Youngman, 2008). Change management in the information world entails most importantly, both human and equipment.

All in all there are very many success stories of libraries that have successful library migration, in one of the success stories (Walls, 2011, p.56) brings it out very well when he concluded in his study that ……

> ……..'the transition of the New York University Health Sciences Libraries from Millennium to Koha was overall a positive experience, albeit one with its challenges and difficulties. With an aggressive timetable and limited staff resources, the library was able to pull off an unprecedented migration with minimal interruption to patron services. Workflows were modified, and some functionality was lost, but the potential for the library to fully control their system and data, and to integrate it with practically any other library system, is well worth the change. The NYUHSL, having identified some key areas for development, has the potential to be a significant contributor to the international Koha community, making Koha a better ILS for libraries the world over"

2.4.1.2 System Migration in Libraries

System migration is the process that occurs when a library automates its manual system or upgrades its current electronic system presents librarians with difficult decisions. Automated system represents huge investments of time and money, and the

wrong choice can lead to significant problems over long periods. According to a study carried out by Hallmark and Garcia (1996) (as cited in Clarke & Morris, 1998), libraries migrate from one system to another for various reasons including, but limited to, response to user complaints, unresolved system problems, and the need for more and improved services and products. Borgman (1997) building on this, adds that as in other sectors of economies, efficiency and productivity are major factors motivating the automation of libraries.

Clearly, systems migration is an enormous project that necessitates wide-ranging planning, careful scheduling, and local technical expertise. It also requires several factors to be taken into consideration when implementing. These include site preparation, data preparation for transfer from the old to the new system, outlining the schedule of work, estimating downtime, training of staff and working closely with the systems vendor for some time (Hamilton, 1995). Ruteyan's, 2006 estimation that a library system cannot remain reliable much longer than about five years invariably implies that change is necessary and so is a plan for change (Ruteyan, 2006). Rapid development in library automation means that libraries will have to upgrade systems, add modules from other systems, or purchase completely new systems.

Additionally, automation has implications for the management and development of the library's human resources. An interrelationship between implicit human values and automation is created, and many changes occur including technological, organisational and most importantly social (Shepherd, 2000). All these underscore the importance of planning for a new system as it facilitates much flexibility and manoeuvrability while allowing the least amount of difficulty during the change process.

2.5 Challenges Associated with Change Management

Change management is a complex interplay between various players and factors as exemplified by the sheer number of obstacles to change management (Guy, Beaman, & Weinstein, 2005):

- Poor communication
- Lack of understanding of the urgency of change
- Unclear rationale for change
- Mixed messages from top and middle management
- Simultaneous undertaking of several initiatives
- Underestimation of potential barriers to the change
- Lack of focus, changed or diminished priorities
- Inadequate employee mobilization and engagement
- Cultural mismatch

In the context of libraries, change management is a concept widely embraced as a launch pad of re-engineering many of its business processes. Despite its positive impact, many challenges abound, most of them mirroring those identified by Guy et al. (2005) above. For instance, the research findings of Malhan (2006) on a study of "change management in Indian universities" established several deterrents of change management process. Amongst them were resistance from some frontline employees who easily influence junior employees' opinion, insufficient organisational culture for innovation, and a workforce that does not care for modernization. Central to these is staff resistance to change.

Resistance to change is not entirely avoidable. Adeyoyin et al. (2012) discussing the issue of staff resistance to change indicate that it is not unreasonable for those affected to react to reorganisation adversely. "It constitutes change about which most people are wary, if not overtly hostile" (p.9). They identify various reasons for resistance to change in the library and information centres including fear of the unknown, reluctance to change familiar and comfortable working habits, belief that change is always for the worse, and fear of losing in one way or another. In agreement, Rick (2011) provides several reasons for staff resistance to change: Lack of understanding the need for the change, fear of the unknown, lack of competence, little trust, being overlooked, poor communication and inadequate conviction of the benefits and rewards to be accrued from the change. While according to Shan and Shaheen (2013) libraries often fall short of their change objective because top management fail to account for the human factor, or because they have blurred vision, leadership deficit, budget constraints.

It is evident from these studies that while there are certain common challenges facing change management, the set of difficulties differ from one organisation to another. One impediment standing out though is ignorance of potential barriers. Without anticipating the potential obstacles, Libraries will not be able to plan for library system migration. Hence, this study considered it necessary to understand ANUL's experience, establish lessons learned and ultimately propose a change management strategy that for future projects implementation.

2.6 Strategies for Change Management

Empirical evidence strongly suggests that developing a change management strategy is critical for successful implementation of any change project particularly those that

have a wide-scale impact. D'Ortenzio (2012) describes an organisational strategy as the means chosen for the achievement of purpose. Harper and Utley (2001) adds to this by identifying specific components of a change strategy as the mission, vision, strategic position, specific objectives, goals and key values, strategy, long-term and operational plans and tactics adopted by an organisation as a means of attaining specific set objectives.

The unique context of all organisations cannot be solved using a single approach. Much of what has been proposed in the literature, therefore, provides for only basic directions and best practices for consideration. Prosci (2016) analysis of the trend in issues in change management since 1998 (Figure 6) underwrites the fact that change management is complex and almost as complex as contemporary organisations are. With each year there emerges new issues and interests in the subject thereby calling for new solutions. Based on these findings, they aptly advise that a successful change management strategy is a product of assessments, analysis of the characteristics of a change and custom solutions for the unique situations of the change. From this discussion, we can define a change management strategy as the approach needed to manage change for a project or initiative in a unique context.

Culture Change Agent Networks Vertical Industry Customization Complementary Roles		2016
Culture Global awareness Complementary roles Change agent networks Vertical industry customization		2015
Justifying CM		2013
Job roles and locations Advice for new practitioners Complex change Aligning CM with other disciplines		2011
Measurement and metrics Integrating CM and PM Readiness		2009
Trends in CM Reinforcement and sustainment Saturation and portfolio management		2007
Organizational change capability Team member attributes		2005
Resources and budgets		2003
Resistance management Manager role		2000
Greatest contributors 'Biggest obstacles Methodology Sponsorship Communications 'Training		1998

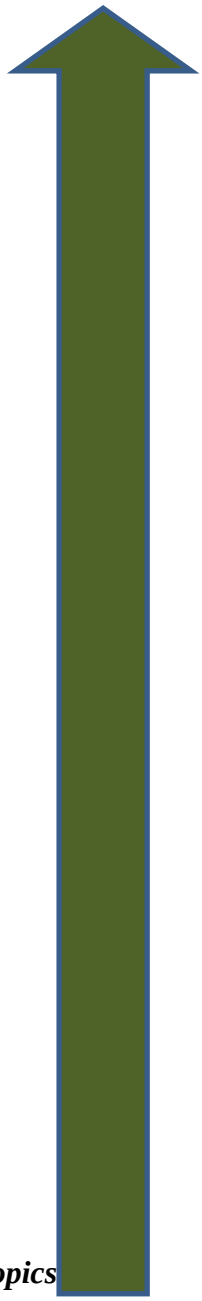

Figure 6: Emerging Change Management Issues and Topics
Source: Adopted and modified from Prosci (2016)

Change does not happen by itself; people make it happen, and as Tam and Robertson (2002) point out, to be successful, change has to incorporate the mission, goals and objectives of the organisation. Adeyoyin et al. (2012) suggest that it may be wiser to "expedient to work for change than to allow change to impose itself" (p. 12). The management of change in any organisation is, therefore, a measure of the ability of

those at the helm of affairs of such organisations to plan against the uncertainties of the future. Thus it is vital that librarians must not allow themselves to become totally captive to past decisions. The inescapable of innovation and the cruciality of a methodical way of abandoning obsolete practices is, therefore, a key factor in the renewal and growth of the library and information centers.

Cumulative research shows that anticipating and responding to technological change often leads to complex sets of functional reorganisation and reallocation of human resources. Such restructuring, where necessary, must be thoughtfully planned and carefully implemented. Since its people who determine the success or failure of systems change, the responsibility for making the change is expected to be sensitive and respectful to all that are likely to be affected by it. Structured process, transparency, effective communication (Shepherd, 2000), and participation of those to be hit by the changes (Adeyoyin et al., 2011) have been shown to make the transition easier and the implementation smoother particularly in securing stakeholders commitment and general willingness to accept the consequences of the change process.

Unfortunately, there is no single change management strategy appropriate for all forms and contexts of change. Different authorities have proposed different approaches. For example, Adeyoyin et al. (2011) identify two approaches to change management strategies – participatory and power strategies. According to these authors, participatory strategies is "more appropriate in situations where there is formal, recognized and accepted authority or where personal power arises from the effect of charisma". Whereas, power strategies are best used "where commitment to

the changes process is not essential for its successful implementation or where the resources available are limited or when little resistance is anticipated" (p. 5).

Nickols (2016) on the other hand identifies four categories of change management strategies: Empirical-Rational is based on the premise that people are rational beings and only require an appeal to their self-interest via incentives. Normative-Reductive centers on the balance of incentives and risk management. It assumes that people are social and require a redefinition and reinforcement of the new norms and values. Power-Coercive assumes that people are basically compliant and will generally do what they are told or can be made to do. Successful change is therefore based on the exercise of authority and the imposition of sanctions. Lastly is Environmental-Adaptive that anchors on the assumption that people are readily adaptive to new circumstances and therefore successful change is based on nurturing and finally concretizing the new norms.

In most of these proposed strategies, there are three recurring activities involved in the change management process - preparing for the change, managing the change and reinforcing the change. Whichever change strategy adopted, the ultimate objective has been to modulate and contain the negative consequences arising from the change while drawing strength and renewal from the many opportunities that change provides.

Nickols (2016) proposes consideration of any mix of the following factors when selecting strategy to use: the degree of change, the degree of anticipated resistance, the characteristics of the stakeholders (size, homogeneity), the risks or stakes involved, the time frame for the transition, the presence of change management

expertise and tools, and the level of organisation/employee dependency. These considerations are similarly essential in the context of university libraries. Thus, in their paper on "Developing a corporate culture in the Indian university libraries: Problems and challenges of change management," Malhan (2006) proposes some strategies that university libraries could deploy to manage the emerging changes. Amongst these is a firm commitment by the leadership to develop and sustain a state-of-the-art university library system. Such leadership is expected to accelerate the process of change by constituting staff teams and monitoring the modernization work of the library.

Rendering support to this proposal of strategies Jantz's (2012b) interview of six academic librarians from six institutions established that leadership was the most significant determinant of innovation in libraries. More flattened structures and transformational styles that incorporate more membership was also found to promote successful adaptation of innovations. Leadership style has also been considered central in dealing with resistant to change which is a major challenge in change initiatives. Thus Kotter and Schlesinger (cited in Kaplan financial knowledge bank) propose several leadership styles to deal with resistance (**Figure 7**). While leadership was not a factor directly under investigation in this study, by analysing the ANUL change process, the study hopes to shed some light on the role of the library's management on the change process.

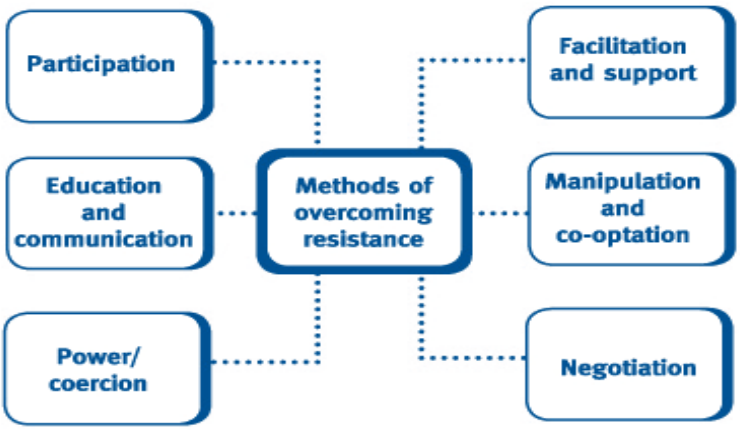

Figure 7: Kotter and Schlesinger Leadership Styles to Overcoming Resistance

Source:Kaplan financial knowledge bank
http://kfknowledgebank.kaplan.co.uk/KFKB/Wiki%20Pages/Managing%20strategic%20change.aspx

Secondly, Malhan (2006) proposes the initiation and execution of continuous training of the library personnel, enhancing their skills and increasing their competencies regarding new methods of handling information arguing that development of ICT infrastructure is of no use and sequence if the personnel are not trained to run the acquired technology. When staff are trained in handling machines and executing new tasks and services, integration of the new changes in their work culture is more smother and faster.

There is also evidence to the fact that most managers conceive change as an event rather than a process. As an event, change stops at the level of restructuring. As a process, it seeks a total turnaround in the structure, culture and the human resource of the organization. Adeyoyin, (2012) stresses that only when every function, office, strategy, goal, process and person is able and eager to rise to every challenge that real agility of an organisation is achievable. As such, Malhan (2006) notes that library personnel are expected to play a vital role in managing the process of change in the libraries. This is irrespective of the fluid information environment and rapidly

changing work performance requirements that are continually creating skill and competency gap amongst the employees).

In support of the extant literature suggesting that for change to be successful, implementation efforts need to fit the organisational context, Hailey and Balogun (2002) developed a change kaleidoscope to help managers design a 'context sensitive' approach to change illustrated in **Figure 8.**

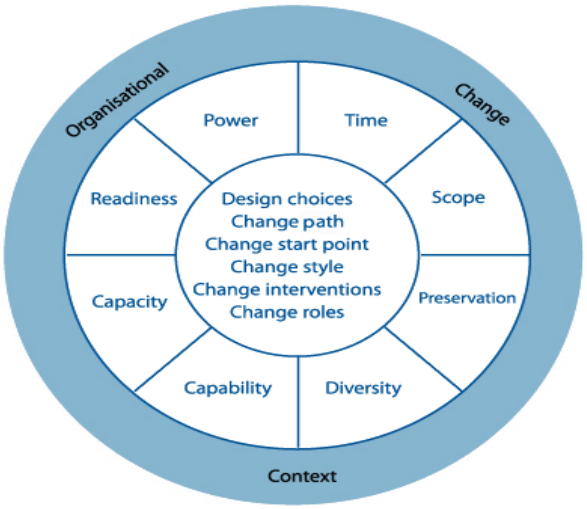

Figure 8: Hailey and Balogunchange Kaleidoscope
Source: Hailey and Balogun (2002)

This change kaleidoscope identifies three levels of change within an organisation. The outer ring relates to the wider strategic change context, the middle ring to specific contextual factors that need to consideration when formulating a change plan while the inner circle gives a menu of choices and interventions ('design choices') available to change agents. They further identify eight contextual factors that can either facilitate or restrict change:

1. Time – availability for longer term strategic development or quickly quick reaction to a crisis
2. Scope – the extent and form (realignment or transformation?) of the effect to the change on the organisation
3. Preservation - aspects of working, culture, competences and people need to be retained
4. Diversity – the sub-cultural differences of the different departments
5. Capability – the individual, managerial or organisational ability to cope with the change
6. Capacity – the availability and investment of resources dedicated to the change process
7. Readiness – level of staff awareness of the need for change and their committed to that change
8. Power – the authority and autonomy that change agents have to make proposed changes

All these perspectives to change management strategies serve to emphasise the need to identify a change approach peculiar to the context, challenges, and opportunities at ANUL.

2.7 Summary

This chapter has examined conceptual, empirical and other related literature on a number of aspects of change management. Four models of change that aid understanding of the nature of change processes and the basis for successful change implementation were examined for their suitability as theoretical framework for the

study. Mapping of Jick Todd's 10 Step Change Model to Kotter's 8 Step Change Model, GE's 7 Step Change Acceleration Process Model and Kurt Lewin's 3 step Model revealed many similarities particularly in activities undertaken even though the order and the steps varied. Out of the four theories, Jick's model of 2003 was selected to inform the study as it was found to be more elaborate and pragmatic.

In addition, the chapter has examined the intricacies of the change management. These include the reasons for the change, the changing library landscape, and change management challenges and strategies. Efforts were made to demonstrate the place of change management in libraries taking account of technological advancements, changing trends in higher education, economic and, political forces that have adversely affecting academic libraries business operation and service delivery. Overall, the reviewed literature indicates that change in libraries has different magnitude; they are both content wise and process wise. A leap in library transformation is the migration from manual systems to an automated system. The decision to go electronic has triggered an entirely new way of organising the library materials, content and as well as document and service delivery not precipitated before.

Further, the chapter has demonstrated the need for developing a context sensitive change strategy following the repeated findings that show that change is a factor of multiple factors and the matrix with which they affect an organisation vary from one to the other. The next chapter will discuss the research methodology adopted for the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter discusses the procedures and methods used in conducting the research. These includes the philosophical stance underpinning the inquiry, the research methodology (otherwise commonly referred to as research approach), the research method, the population of the study, sampling procedure and sample size, the research techniques including (the research instruments –types and their reliability and validity tests). Also, the chapter describes data gathering procedures, data analysis and presentation methods and last but not least, the ethical considerations.

In their paper on Research Methodology, Rajaseka, Philominathan, and Chinnathambi (2006) describe research methodology as "…procedures by which researchers go about their work of describing, explaining and predicting phenomena." (p.5). Thus, we can conclude that the core purpose of research methodology is to provide a blueprint of the approach and tools to be used in an inquiry process.

This study aimed at understanding the change management process at African Nazarene University Library system's migration so as to propose measures that can optimize the change management efforts. The following research objectives guided the study: (1) establish the reasons/drivers for system migration from the manual to the automated system at ANUL (2) examine the migration process (3) assess the support system in place for the migration (4) determine staff and users perception of, and response to, the migration process (5) establish the change management challenges experienced by the library at systems migration and (6) propose a strategy for successful system migration.

The study adopted a post-positivist philosophical perspective of worldview through a mixed method approach (qualitative and quantitative triangulation) using a case study design. In discussing the research methodology elements and their inter-relationship, the study was informed by Pickard and Dixon's (2004) 'research hierarchy' framework (**Figure 9**).

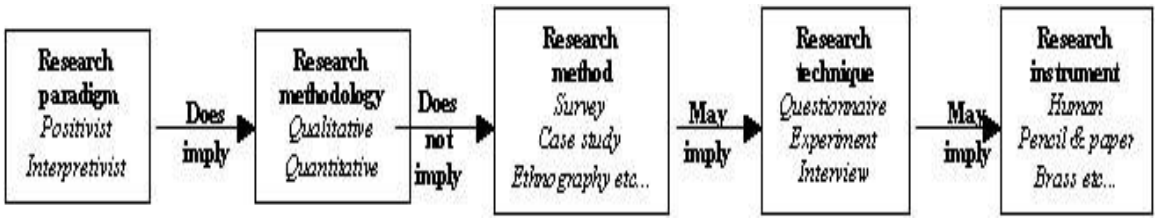

Figure 9: Research Hierarchy
Source: Pickard & Dixons (2004)

3.1 Research Paradigm

According to Pickard and Dixon's (2004) research hierarchy, research paradigm is the first element of research methodology. It defines the philosophical stance of the research inquiry that establishes significant assumptions and interpretative frameworks about the way in which a researcher views the world. Creswell (2014) identifies four philosophical assumptions: ontology, epistemology, axiology and methodology. Ontological assumptions relates to the nature of reality; epistemology relates to what counts as knowledge and how knowledge claims are justified; axiology refers to the role of values; whereas methodology defines the process and language of the research.

Research paradigms are embedded within interpretative frameworks. In its simplest form, Klein (2011, p. 96) define the interpretative framework as "how people process information." In other words, interpretive frameworks are a core set of beliefs that guide action. They include positivism, postpositivism, interpretivism, constructivism,

feminism amongst others (Creswell, 2014). This study adopted a post-positivist theoretical lens. My interest in choosing this interpretative framework was persuaded by Creswell's assertion that this theoretical perspective views research as logically related steps, informed by multiple perspectives of reality espoused from a rigorous and multiple levels of analysis. A post-positivist theoretical lens was thus considered significant to the study as an audit of ANUL's system change process required an in-depth analysis of multifaceted interrelated issues.

Postpositivism is widely regarded as a middle ground between the extremes of theoretical lenses. On the one hand is positivism associated with quantitative approaches while on the other is interpretivism linked to qualitative approaches. Moreover, post-positivism is in accord with the mixed method in that it triangulates the quantitative and qualitative methods. Using this lens, I was able to examine the central question of change management during system migration from the living experiences of multiple respondents, collect data using various data collection methods, and triangulate qualitative and quantitative data for a sound understanding of the change management phenomena.

3.2 Research Approach

According to Pickard and Dixon's (2004), research methodology delineates the two types of dimensions to research inquiry: the deductive and the inductive approach. The Deductive approach begins by establishing the general theory and knowledge base then testing whether the observed phenomena fit within the expectations (Kothari, 2004). It is associated with quantitative studies that aim at formulating hypotheses and statistically testing expected results. The inductive approach, on the other hand, begins with observations and then looks for patterns in the data. It

associates with qualitative research anchored on the premise of a liberal slant to research that is devoid of preconceived ideas, and that has an intention of generating new knowledge (Bryman & Bell, 2015).

Depending on the whether a researcher uses a deductive, inductive or a blend of the two, the research would be considered as a quantitative, qualitative or mixed approach respectfully. These serve as the framework or blueprint for conducting a research project. They specify the precise details of the procedures necessary for obtaining the required information. This study blended the Deductive and inductive research dimensions in drawing an understanding of the change management concept from both theoretical and empirical literature. However, the constructs underpinning the theories used in the study were only applied as guides rather than as a restriction on the scope. The constructs were also used, albeit not exclusively, in developing the codes representing emerging themes from the qualitative data. Consequently, open-ended (through interviews) and close ended (through questionnaires) data collected from multiple respondents including library users, library staff and the ICT staff of ANU, were triangulated to provide a deeper and wider understanding of the phenomena.

3.2.1 Mixed Method Approach

For this study, the mixed method approach, a type of research which combines elements of qualitative and quantitative research methods for the purpose of breadth and depth of understanding and corroboration (Creswell, 2014) was adopted. In a later publication, Creswell (2015) identifies research problems suited for mixed methods as those in which one data source may be insufficient, results require explanation,

exploratory findings need to be generalized, or a second method is necessary to enhance a primary method.

The mixed method permitted triangulation of two distinct approaches embedded in a postpositivist theoretical lens. Considering that the change management process at ANUL is not sufficiently understood, this design facilitated the exploitation of triangulated quantitative and qualitative data collection, analysis, and presentation methods thus permitting an in-depth understanding of the process.

3.2.1.1 The Triangulation Design

The study used a concurrent triangulation design that exploits separate but concurrent collection and analysis of quantitative and qualitative data. This triangulation of the two approaches in a mixed method convergence brought differing strengths and non-overlapping weaknesses of quantitative methods (such as large sample size, generalization) with those of qualitative methods (such as small numbers, in-depth analysis). The qualitative data set was thematically analyzed before being quantified and later brought together with the quantitative data in a descriptive analysis and interpretation.

There are four variants of the triangulation design: the convergence model, the data transformation model, the validating quantitative data model, and the multilevel model. This study adopted a data transformation model of transforming qualitative data into quantitative as modeled by Creswell, Plano, Gutmann, and Hanson, (2003).

Figure 10.

According to Tashakkori and Teddlie (1998), data transformation model involves separating collection and analysis of quantitative and qualitative data sets. After the initial analysis, one data set is transformed into another data type either by quantifying qualitative findings or qualifying quantitative results.

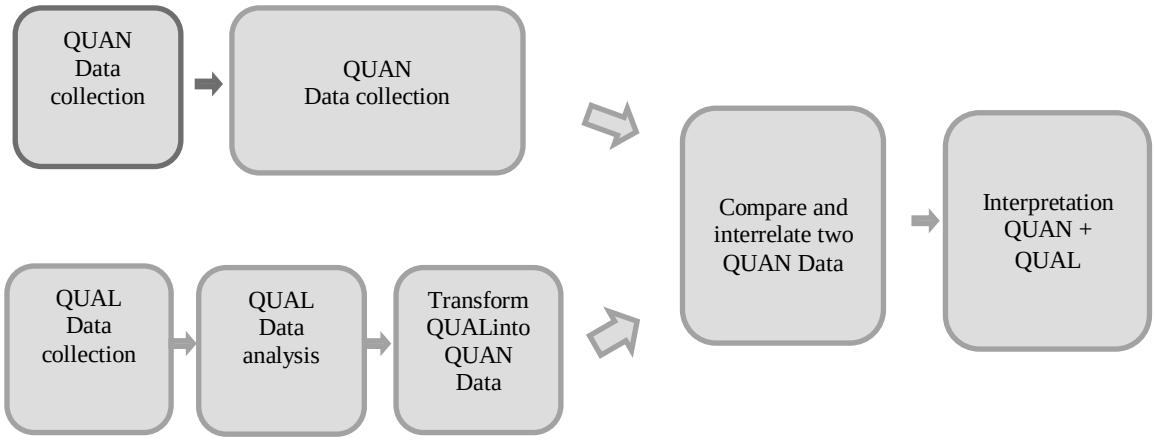

Figure 10: Triangulation Design Model- Transforming Qualitative Data into Quantitative Data
Source: Creswell et al., (2003)

The transformed data may then be mixed at the analysis stage to facilitate the comparison, interrelation, and further analysis of the two data sets. In this study, the derived themes from the thematic analysis of the qualitative data were coded and subjected to descriptive statistics to show frequency and percentages of recurring responses. However, the text descriptions of qualitative responses were also used in the form of excerpts to present and retain the original individualized responses that are a fundamental characteristic of qualitative analysis and reporting.

3.2.2.2 Design Criteria for Timing, Weighting, and Mixing

Triangulation mixed methods approach anchor also on three fundamental decisions that in turn determines the process of data collection and analysis. The first is the order in which the data collected is used in a study. The second is the relative weight

of the quantitative and qualitative approaches based on the emphasis given to each. The third is an approach to mixing the two datasets (Creswell et al., 2003).

At its elementary level, timing (otherwise known as "implementation" or "sequence") is the momentary relationship between the quantitative and qualitative components within a study based on the time when the two data sets are collected (Greene, Caracalla, & Graham as cited in Tashakkori & Teddlie, 1998). In contrast, though, Morgan (1998) is of the opinion that timing relates more to when the data is analyzed and interpreted than to when the data is collected. This study used concurrent timing by implementing both quantitative and qualitative methods during a single phase of the research study.

Weighting refers to the relative importance or priority given to either the quantitative or qualitative method in addressing the study's questions. It can either be equal or unequal weighting. There appears to be no fixed set criteria for determining the relative weights of qualitative and quantitative data in a mixed method research designs are varied. According to Morse (1991), the determinant of the weighting is the theoretical lens used in guiding a study. Consequently, a postpositivist worldview gives more weight to a quantitative approach, a naturalistic to a qualitative approach, and a pragmatic worldview uses either equal or unequal weighting depending on the research questions.

Other factors influencing weighting include the goal of the study, the research question(s), the orientation of the research procedures used - traditional qualitative or quantitative method (Morgan, 1998), and the researcher's relative experience with the two methods and resource devoted to each method (Creswell, 2014). Taking

consideration of these determinants of weighting, this study gives more weight to the quantitative approach, subsequently, quantifying the qualitative data for an enhanced understanding. Additionally, the study takes recognition of postpositivist worldview which not only gives more priority to quantitative approach but also the focus of the research. In this study, such a locus is exemplified by the use of the term 'audit' in the research title.

Regarding **mixing decision** (that is how the quantitative and qualitative methods are combined), the literature provides for three alternatives. First, is merging the two data sets. Second is embedding of one type of data within a design of the other. The third is connecting the two data types from the data collection to data analysis (Tashakkori & Teddlie, 1998). In this study, the merging of the data sets is at two primary levels. In the first level, the data sets are analyzed separately and then merged during the interpretation of findings per research question. Here, the quantitative data was subjected to descriptive statistics such as frequencies and percentages, whereas the qualitative data was subjected to thematic analysis to generate categories of related themes.

At the second level, the study employs a conjunctive combination of quantitative and qualitative data analysis method by using the two to assess the same issues under investigation. This combination involves the quantification of the qualitative data for analysis of frequencies and determination of patterns for recurring responses. The recorded texts collected during the interviews were therefore first coded by aggregating them into smaller categories and then assigning codes. The categories were then further analysed for similarities and overlaps, relapsing the resulting related categories as other sub-categories identified for the larger groups. The final set of

categories were labeled and subjected to quantitative analysis for further interpretation.

3.3 Research Method

Research method, also known as research strategy relates to how a researcher intends to carry out the work (Sounders, Lewis & Thornhill, 2012). The strategy could take different viable approaches such as experimental research, action research, case study research, interviews, surveys, or a systematic literature review.

This study uses a data transformation mixed method approach in a survey within a case study research design, the qualitative and quantitative data was collected from the respondents at one point in time. Choice of mixed method conforms to two postpositivists assumptions; the undertaking of a research inquiry from the natural setting of the respondents and obtaining views from multiple perspectives (Creswell, 2014). Moreover, a case study is considered to be an empirical inquiry that investigates a present-day phenomenon within its actual context, especially when the boundaries between the phenomenon and the context are not clearly evident. According to Yin (2013), a case study design should be considered when: (a) the focus of the study is to answer “how” and “why” questions; (b) you cannot manipulate the behavior of those involved in the study; (c) you want to cover contextual conditions because you believe they are relevant to the phenomenon under study; or (d) the boundaries are not clear between the phenomenon and context. All these factors were pertinent in the study.

There are different types of case studies. They include explanatory, exploratory, descriptive, multiple, instrumental, collective and intrinsic case studies. This study

adopted the intrinsic case study. Stake (1995) advocates for the use of such a case study especially when there is a genuine interest to understand the case better. Intrinsic cases do not necessarily represent other cases, neither do they have to exhibit a particular trait or problem. Instead, in all their particularity and ordinariness, the case itself is of interest. In such a situation, the purpose would not be to understand some abstract construct or universal phenomenon, nor build a theory. In this study, ANU Library presented a unique case particular in its implementation of library systems in remarkably short span difference and without full exploitation of the systems.

Additionally, the intrinsic case study method was considered suitable for the desired in-depth understanding of system migration at ANUL. It also facilitated the use of multiple data collection methods drawn from qualitative and quantitative data collection techniques. These were questionnaires and in-depth interview schedule. The study heavily relied on the recall of the respondents' lived experience. As such, triangulation of data collection techniques was deemed necessary to validate their responses and fill in the missing gap that may have failed the memory of respondents.

3.4 Population of Study

Kothari (2004) describe a population as a total collection of elements whereby reference is made. The target population constituted the ANU library and ICT staff, its full-time faculty members and students totaling to 1060 in the following distribution: 10 ICT staff, 25 library staff, 25 full faculty members and 1000 students.

3. 5 Sampling Design

Sampling design is a framework or roadmap that serves as the basis for the selection of a survey sample and affects many other important aspects of a study as well (Shapiro, 2008). The use of a mixed research approach means that a study can exploit diversified sampling techniques as permitted within the two designs. Accordingly, students were selected using non-proportionate sampling whereas purposive sampling was used in selecting ICT staff, library staff, and faculty members considered to have had some privileged information not available to the rest of the population.

As a criterion for inclusion, the ICT and Library staff were required to have been involved in the actual migration of the system and also to have had direct interaction with the system especially while serving the library users and in troubleshooting of the system. Invoking this criterion was necessary for concentrating on persons who were in a position to provide lived experiences the change management process during the system migration. The criteria for inclusion for faculty members required them to have been employees of ANU before or at the new library system installation. Consequently, only full-time faculty members qualified for inclusion.

In the absence of a ready reference, list, it was necessary to generate a sampling frame listing the students who had interacted with the manual system and the electronic system. In compliance with the set criterion for students' inclusion, this meant excluding students who had enrolled in the university either in the second year of study (diploma holders) or third year (higher diploma holders).

3.5.1 Sampling Size

A sample size refers to the number of items selected from the universe (Kothari 2004). According to Hussey and Hussey (1997), no study can ever be deemed free from error or provide 100% surety. Therefore they propose that an error limit of less than 5% and confidence levels of higher than 90% is considerably acceptable. To this end, Yamane's sample size formula (Israel, 1992) that provides an error of 5% and a confidence level of 90% was used. The study used Yasmine's' sampling formulae of *N*=N/1+N (e) 2 to get sample size, from a total population of 1000, the study drew a sample of 253 students representing all the four years of study. In the case of ANU, the first years were previously products of the pre-university program, therefore, had interacted with the manual system. Since almost every year had approximately the same number of students, non-proportionate sampling method was used to select 62, 62, 64 and 65 students from year one to year four respectfully.

On the other hand, purposive random sampling approach was used to pick 20 faculty members who had met the stated criterion. These were the permanent staff who had experienced both the old and the new system. **Table 7** shows the sample size distribution by respondents' category whereas **Table 8** provide a summary of the minimum sample size recommended for mixed (qualitative/quantitative) designs

Table 7: Sample Size Distribution by Category

Category	Target population	Sample size	Percentage
ICT Staff	10	5	50%
Library staff	25	20	80%
Faculty	25	20	80%
Students	1000	253	25.3%
Total	**1060**	**298**	**28.1%**

Entries in **Table 8** found to be relevant to this study are (1) For research method, minimal sample sizes of case studies - 3-5 participants, (2) For sampling design, minimal sub-group sampling design - ≥ 3 participants per subgroups, and (3) For data collection methods, minimal sample size for interviews – 12 participants. Going by these provisions a total sample size of 298 used in the study is well beyond the acceptable minimum size.

Table 8: Minimum Sample Size Recommendation for Most Common Qualitative and Quantitative Research Designs

RESEARCH DESIGN/METHOD	MINIMUM SAMPLE SIZE SUGGESTION
Research Design	
Correlational	64 participants for one-tailed hypotheses; 82 participants for two-tailed hypotheses (Onwuegbuzie et al., 2004)
Causal-Comparative	51 participants per group for one-tailed hypotheses; 64 participants for two-tailed hypotheses (Onwuegbuzie et al., 2004)
Experimental	21 participants per group for one-tailed hypotheses (Onwuegbuzie et al., 2004)
Case Study	3-5 participants (Creswell, 2002)
Phenomenological	≤ 10 interviews (Creswell, 1998); ≥ 6 (Morse, 1994)
Grounded Theory	15-20 (Creswell, 2002); 20-30 (Creswell, 2007)
Ethnography	1 cultural group (Creswell, 2002); 30-50 interviews (Morse, 1994)
Ethological	100-200 units of observation (Morse, 1994)
Sampling Design	
Subgroup Sampling Design	≥ 3 participants per subgroup (Onwuegbuzie& Leech, 2007c**)**
Nested Sampling Design	≥ 3 participants per subgroup (Onwuegbuzie& Leech, 2007c)
Data Collection Procedure	
Interview	12 participants (Guest, Bunce, & Johnson, 2006)
Focus Group	6-9 participants (Krueger, 2000); 6-10 participants (Langford, Schoenfeld, &Izzo, 2002; Morgan, 1997); 6-12 participants (Johnson & Christensen, 2004); 6-12 participants (Bernard, 1995); 8–12 participants (Baumgartner, Strong, & Hensley, 2002)
	1 to 6 focus groups (Krueger, 1994; Morgan, 1997; Onwuegbuzie, Dickinson, Leech, & Zoran, 2007)

Represent sizes for detecting moderate effect sizes with .80 statistical power at the 5% level of significance Shaded samples represents relevant sample sizes to the study

Source: Onwuegbuzie and Collins (2007, p. 289).

3.6 Data Collection Techniques

Although case study method has traditionally been associated with qualitative methodology (Creswell, 2014; Kothari, 2004), its applicability in quantitative studies is undisputed (Yin, 2003). In consistent with the case study strategy of incorporating multiple data collection methods for a holistic understanding of the phenomena under consideration, two primary data collection methods were used in collecting data from students and staff of ANU: questionnaires and interview schedule respectively.

3.6.1 Questionnaires

A questionnaire is a research instrument consisting of an array of questions and other cues for the purpose of gathering information from respondents. Data from students and faculty members meeting the criteria for inclusion was gathered using an open-ended questionnaire. In general, the questionnaire is revered for several of its attributes (Frary, 2002; Kothari, 2004). They are considered to be particularly useful in capturing unsuspected information, are free from the bias of the interviewer, capture answers in respondents' own words, give respondents' adequate time to think through their responses, reach respondents who may not otherwise be easily approachable, reach large samples conveniently, is effective and efficient in gathering information within a short time and the results can be made more dependable and reliable. Given that the study was in quest for the past lived experiences these aforementioned attributes of questionnaire made it possible for the participants to reflect more on the questions and hopefully provide well-thought answers.

3.6.2 Interviews

Qualitative data collection methods such as interviews are believed to provide a deeper understanding of social phenomena than would otherwise be obtained from purely quantitative methods such as questionnaires (Gill, Stewart, Treasure & Chadwick, 2008). Interview is considered to be a far more personal form of data collection technique than most methods, provides a researcher with opportunity to probe further on a question for clarity or for more detail, are easier for respondents to express themselves especially if what is sought is personal opinions or impressions, and are suitable where there is insufficient knowledge about the study phenomenon or where individual participants' insights into the subject is required (Kothari, 2004). All these attributes were found to be useful in the study as they made it possible for the study to explore the views, experiences, beliefs and motivations of individuals on specific matters related to the change management process.

3.7 Research Instruments

Two popular methods associated with quantitative and qualitative data collection methods were used: interview schedule and semi structured questionnaires.

3.7.1 Interview Schedule

Commenting on the structure and content of interview schedules, Gill, et al. (2008) note that semi-structured interviews consist of a series of questions that help to determine the areas to be explored. It also allows the interviewer or interviewee to veer into other areas deemed important in gaining more details of the problem under investigation. While developing the interview schedule, the following were put into consideration: the focus of the inquiry questions, what was to be learned from the interviewee, time available for the interview and the level of interviewee accessibility.

Thus the semi-structured questions assisted in opening up conversation with the respondents thereby prompting follow-up questions while at the same time providing some structured form of questioning. Interview method was used in collecting data from the ICT and Library Staff.

3.7.2 Questionnaire

Semi-structured questionnaire administered was divided into two sections: The first section looked at the respondent's demographics in terms of year of the study, the department and period of association with ANU. The second part of the questionnaire dwelt with the respondents' lived experiences and perceptions of the system migration process, performance of the new system, challenges experienced during the system migration and their opinion of the corrective actions that need to be taken in future change initiatives. This instrument was used to collect data from students and faculty members.

3.8 Psychometric Tests of the Instruments

Psychometric properties refer to the reliability and validity of the instrument. Reliability relates to the consistency while validity to the results' accuracy. Any data collection tool is expected to accurately and dependably measure what it ought to measure and as Alvior (2013) add, reliability can help achieve valid assessment and provide confidence in making a prediction regarding a phenomenon.

3.8.1 Validity Tests

Golafshani (2003) refers to validity as the extent to which a measuring device measures what is intended to measure, while Salkind (2010) regards it as an argument in support of a construct. In other words, it is the extent to which a measure, indicator

or method of data collection possesses the quality of being sound or true as far as it can be judged. Validity can be considered as the strength of mixed method research as it is used to determine whether the findings are accurate from the standpoint of the researcher, or respondent (Creswell, 2014). Several measures were taken to ensure the validity of the data collection instruments.

First, the questions in both data collection instruments were developed after extensive review of the literature to establish the issues to be addressed. Secondly, to further confirm the sufficiency of the issues asked, a pilot study was conducted in January 2013. The pilot study involved 20 students and five faculty members for the questionnaire testing, and two library and two ICT staff for the interview schedule all drawn from ANU. The pilot tested for several things including:

- The wording, clarity, and order of the questions,
- The adequacy of range of responses received,
- The potential practical and logistic problems in the data collection methods and procedure such as tape recording the interview sessions, distributing and collecting the questionnaires,
- The efficacy of questionnaire and interview as data collection methods for the study,
- The competency of the research assistants, and
- The time it took to complete the questionnaire and interview session.

As a result of the findings from the pilot study, tape recording of the interview sessions was discarded following objections from the respondents. Vague or otherwise out of place questions were revised in the final instrument. For example, the

findings showed that majority of the interviewees were not vast with change management process and activities. Therefore the question was restructured from merely asking them to narrate the change process to providing them with the various phases of Jick's change management process and allow them to explain the activities undertaken in each. Similarly, the open question aimed at testing the change management maturity of ANUL had to be restructured to Prosci's Likert Scale testing tool on organisational change management readiness to elicit more response as opposed to the shallow responses received in the pilot. Also of significance was the reduction in questions asked in the questionnaire and merging of students and faculty members' questionnaire into one rather than introducing variability in the issues asked yet both groups were merely involved in the study as library users.

Given the magnitude of the changes done in particularly the interview schedule, the respondents initially involved in the pilot study were requested to review the instruments and comment on its adequacy. Their response was positive. Those who participated in the piloting were excluded from the main study.

Thirdly, validity was checked through a triangulation of both qualitative and quantitative data collected at roughly the same time, and the information obtained integrated into the interpretation of the overall results. This process allowed for the identification of contradictions and incongruent findings. Since the study deployed a conjunctive combination of both quantitative and qualitative data analysis method in which the two were used to assess the same issues, the qualitative data was coded to allow for quantitative analysis and to ease comparison. However, to ensure that subjective elements of the qualitative data are not lost during the quantification,

efforts were made to conform to the two criteria of qualitative data quantification as advocated by Tam Tim-kui, (1993, p. 26).

The first criterion requires that "in the process of quantification, the interpretive nature of the study should remain untouched." Accordingly, the use of an interpretive type of research questions ensured that interpretative aspects of the study were not lost. The second criterion states that "the subjective and personal elements in qualitative information should not be eliminated or changed in the process of quantification. Consequently, a team of experts comprising of two library staff and one ICT staff who had participated in pilot study examined the derived themes to verify if they were appropriately coded, quantified and described.

3.8.2 Reliability Tests

Notwithstanding the ultimate objective of reliability, qualitative and quantitative research approaches differ in their perspectives on how it presents itself. For quantitative studies, it examines the extent to which the instrument yields the same results on repeated trials thus laying more emphasis on the exact replicability of the processes and the results. In contrast, the essence of reliability for qualitative research lies in consistency. Striking a balance between these two views, Key (1997) observe that a degree of unreliability is always present in data collection instruments adding that for a quality instrument used in collecting data at different times, there cannot fail to be a significant measure of consistency in the results.

In view of the fact that this study employed a mixed approach, the following provisions of promoting confidence in the accuracy of the data recording as proposed by Creswell (2014) were found to be more accommodative of the variant views and

thus observed in the study. Firstly, the study employed the use of interview schedules and questionnaires as the instruments for data collection. These are tools widely used in collecting primary data during research. Secondly, recognizing the significance of an early familiarity with the culture of participating organisations before the actual data collection, I visited the location of study – ANUL before the actual data collection exercise. During the visit, acquaintance with the staff was informally made. Thirdly, a pilot study was conducted to ensure the credibility of the data collection instruments.

3.9 Ethical Consideration

Concerted efforts were made to conform to ethical considerations pertaining to the quantitative and qualitative methods. Before embarking on the actual data collection exercise, written permission from the ANU administration was sought and informed consents from the respondents obtained. Respondents were assured of the privacy of their identities and the use of the obtained data for research purpose only. APA 6th edition of referencing system and Moi University guide to thesis writing have been adhered to in the report writing.

3.10 Data Analysis and Presentation

The study collected two sets of data: quantitative data using questionnaire and qualitative data using interview guides. The two data collection methods are employed in commensurate with the type of data sort. A conjunctive data analysis method that combines quantitative and qualitative methods in measuring the same phenomena is used.

The literature points to an increase in debates on quantification of qualitative data. These discussions stem from the fear that inversion contravenes the very qualities that make qualitative data distinctive. However, a growing body of studies shows otherwise (Culp & Pilat, 1998; TAM, 1993; Ward, 2010; William, 2004; Sauro, 2012). Not disputing the richness of qualitative data, they argue that its quantification facilitates ease of identifying how prevalent a certain phenomenon exists, as well as the pattern and relationship between recurring responses that would otherwise be harder to deduce using textual descriptions. They further argue that the richness of qualitative findings, when amplified by quantitative statistics, collectively provide a clearer answer to the research questions under investigation.

According to Onwuegbuzie and Combs (2011), qualitative and quantitative analysis involves labelling and coding all of the data so that similarities and differences can be recognized. They explain that responses from even an unstructured qualitative interview can be entered into a computer for it to be coded, counted and analysed. In their opinion, analysis of quantitative research involving frequencies of variables, differences between variables, and other statistical tests designed to estimate the significance of the results and the probability that they do not occur by chance is only achievable by counting and comparison. However, qualitative studies have no mechanism for pre-coding. Consequently, a mechanism for identifying and labelling or coding data is essential. This means that a procedure for the categorization of verbal or behavioural data, for purposes of classification, summarisation and tabulation can be used when qualitative data has been collected through, Interviews, focus group discussion or even images.

Onwuegbuzie and Combs (2011) further proposes various methods of achieving this. They amplify that mixed analysis involving both quantitative and qualitative analytical techniques within the same framework are guided by decisions arrived at either prior to the study or during the study. These prior, a posteriori, or iteratively analytical decisions are often based on one of the existing mixed methods research paradigms aimed at meeting one or more of the following rationales/purposes: triangulation, complementarity, development, initiation, and expansion. Taking all these factors into consideration, the analysis of the mixed data in this study was done concurrently and in no chronological order as discussed below.

3.10.1 Quantitative data analysis

Quantitative data collected from students was analyzed using descriptive statistics. First, the data was checked-in through a Microsoft Excel data file, and each response was allotted a case number and filed in a numbered order. A codebook consisting of variable labels and value labels was then created. Second, the data entered in the Microsoft Excel was transferred into a Statistical Products Services and Solutions (SPSS) file. The titles of variables and value labels were entered in the SPSS data file. Thirdly, a frequency analysis of the entire variable list was run in the SPSS for detection of errors and missing numbers in the data file. Errors and incompleteness in the data set were detected and removed. Finally, the cleaned and coded information was subject to descriptive analysis and the results presented in the form of frequencies and percentages.

3.10.2 Qualitative Data Analysis

Thematic analysis was used in identifying themes and categories that emerged from the interviews. Thematic analysis promotes the precise determination of relationships between concepts as well as the comparison between them with the replicated data. Describing its strength in analyzing qualitative data, Namey et al. (2008, p. 138) cited in Alhojailan, (2012, p. 138) aptly states

> "Thematic Moves beyond counting explicit words or phrases and focuses on identifying and describing both implicit and explicit ideas. Codes developed for ideas or themes are then applied or linked to raw data as summary markers for later analysis, which may include comparing the relative frequencies of themes or topics within a data set, looking for code cooccurrence, or graphically displaying code relationships."

Three circumstances under which thematic analysis is considered appropriate as identified by Alhojailan (2012) were found to be applicable in this study. These include:

(a) When there is need to draw meanings consistent with the data that is collected. Prior to the research, little was known about ANUL change management process and strategy. It was, therefore, necessary to provide interpretations that most appropriately explain the behaviours, actions, and thoughts of the study participants

(b) When a research has applied both inductive and deductive methodologies. This study used a mixed methods research approach which is accommodative of the two research dimensions. The study was built on some theoretical understandings of the change process. Analysis of ANUL's case was done in

light of assumptions underpinning these theories albeit with a flexibility of interpretations. Later, the findings were analyzed to establish appropriate solutions in the context of ANUL

(c) When there is a desire to code and categorise data into themes. In this case, issues that best explain the change process had to be identified to build a clear picture of how they played out in ANUL.

The first process involved open coding. This step included reading and comparing the interview transcripts of the principle researcher with those of the research assistant and making notes that summed up what was in the text. The output of this exercise was a summary statement or words for each element discussed in the transcript. Secondly, the data from all the interviews was collected together onto a clean set, examined and duplications crossed out. In doing this, the numbers of categories and themes were reduced. The third process further re-examined the generated list of categories compiled for overlapping and related categories and subsequently regrouping related categories. Although the qualitative data was significant in providing in-depth insight into the problem area, to summarize repetitive responses, determine emerging patterns and relationships between categories, the generated themes were quantified and subjected to descriptive statistics for frequencies and relationships. The two datasets were then combined in answering the research questions.

3.11 Data Collection Procedure

Two research assistants were identified and walked through the study objectives and data collection procedure and instruments. The research assistants were involved in

both the pilot and final data collection exercise. Following the implementation of the pilot study findings, appointments with the library, ICT staff and faculty members were made. A concurrent data collection method was employed in which the questionnaires were distributed to the students with the help of the class representatives at the same time as the interviews were being conducted. Given the low response rate associated with questionnaires, a research assistant was also engaged to assist in following up and in collecting the questionnaires from the students.

The pilot study established that the respondents were uncomfortable with being tape recorded. Therefore to capture the interview responses as accurate as possible, a research assistant was engaged. Although the standard procedure for interviews recommend the use of tape records for accurate capture of the responses, the pilot study established that the respondents were uncomfortable with them being recorded. A second research assistant service was therefore engaged in recording the responses so as to capture the verbal narrations/responses as correctly and comprehensively as possible. Nevertheless, as the principle researcher, I took short notes of the answers on a standard form which contained the date, time, designation and experience together with a number clues to the questions. Most interviews lasted between 30-40 minutes except two interviews that stretched close to one hour due to disruptions (for example when a respondent required to attend to an urgent matter). All the interviews were conducted in the respondents working stations. Notes taken by both the researcher and the assistant were compared at the end of every second day of interviews.

3.12 Summary

This chapter has described the methods and procedures adopted in conducting the study to answer the research objectives raised in chapter one. A postpositivist theoretical interpretative framework embedded in a concurrent triangulation mixed design within a case study was adopted. From a population of 1060 students, a sample size of 253 students using Yasmine's' sampling formulae of *N*=N/1+N (e) 2 was drawn whereas in selecting the 20 faculty members, 5 ICT staff and 20 library staff, purposive sampling was used.

Mixed method of data collection using questionnaires and interview guides were used as the primary tools in a bid to obtain holistic, in-depth data. While questionnaire data from the various groups of respondents were collected concurrently and were later quantified before being subjected for analysis and interpretation. Triangulation of the data gathered from multiple users and data collection methods were also instrumental in determining the credibility of the data. Before the data collection, a pilot study to validate the clarity and reliability of the instruments was conducted. Other ethical considerations observed included seeking permission from the relevant authorities to carry out the study, providing clear explanations of the intent of the study to the respondents, eliminating private information that could be associated with a particular respondent and adherence to the APA referencing style and Moi University prescribed method of thesis writing.

The next chapter will present data presentation, analysis and interpretation.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter presents, analyses and interprets the research findings in line with the study research questions. The findings are presented in the form of frequencies and percentages in tables and charts. Not to lose the verbal richness of qualitative data, direct quotations (excerpts) are used where appropriate, for emphasis and direct presentation of the respondents' voice. Data from the various groups of respondents have been integrated around the study research questions.

According to Singh and Bajpai (2008), data presentation involves organising data in the form of scores in a systematic way for understanding the meaning and deriving some useful conclusion. Analysis, on the other hand, consists of examining, categorizing, tabulating or otherwise recombining the evidence to address the initial propositions of a study. Interpretation, on the contrary, is considered to be the process of making sense of data that has been collected, analyzed, and presented. It is also the process of detaching meaning to the data. Yin, (1994) adds that interpretation depends on the insight and informed deduction of the researcher drawing on collected information or reference to the literature.

The study aimed at examining the change management process at African Nazarene University Library system's migration with a view to suggesting measures that can be taken to optimize the change management efforts. The study was guided by the following research questions: What necessitated the need to change from manual system to the automated system?; how was the transition from manual to automated systems carried out?; what structures were in place to support the library system

migration?; what are the staff and users opinion of, and reaction to, how the change was handled during the system migration?; what factors derailed the change management and how?; and what measures can be put in place to facilitate a successful system migration?.

Interview schedules (Appendix 1) were used in obtaining qualitative data from 5 ICT staff, 20 library staff whereas questionnaires (Appendix 2) were used to collect quantitative data from 20 Faculty members and 253 students. The questionnaires constituted both closed and open-ended questions. Data was analyzed using both qualitative and quantitative data analysis methods to provide a holistic presentation, interpretation and explanation of the central issue under investigation. A transformative mixed method design was used to both triangulate and complement findings from both paradigms. However, as presented in chapter four of this report, during the research conceptualization, a prior analytical decision was made to give priority to the quantitative analysis strand.

4.1 Study Participants

The participants in the study were purposeful (library staff, ICT staff and faculty members) and randomly sample (students) drawn from ANU community. The criteria for participation required them to have had personal lived experience in the actual system migration and direct interaction with the both the manual and the automated system. Analysis of the composition of the respondents was done to establish their representation, distribution, and eligibility as per the sampling criteria. These analyses include the response rate by category, faculty representation, and years of service/stay of both staff and students.

4.1.1 Response Rate

A summary of the response rate by category is presented in **Table 9**. Following Onwuegbuzie and Collins (2007) minimum sample size recommended for mixed (qualitative/quantitative) designs (**Table 8**), the response rate, just as the sample size initially selected, was above the minimum threshold.

Table 9: Response Rate by Respondents Categories

Respondents' Category	Target Population	Sample Size	Actual Respondents
ICT Staff	10	5	5
Library staff	25	20	20
Faculty	25	20	20
Students	1000	253	253
Total	1060	278	278

The actual respondents included five ICT, the University librarian, one system librarian, five heads of the sections, thirteen library staff, twenty lecturers who were at ANU during the transition from the old system to the new system, and, two hundred and fifty-three students who had interacted with the previous system as well as the new system.

4.1.2` Distribution of Teaching Staff by Faculty

While majority of the users were from the business faculty understandable being the largest department, **Figure 11** shows that all the academic faculties were represented.

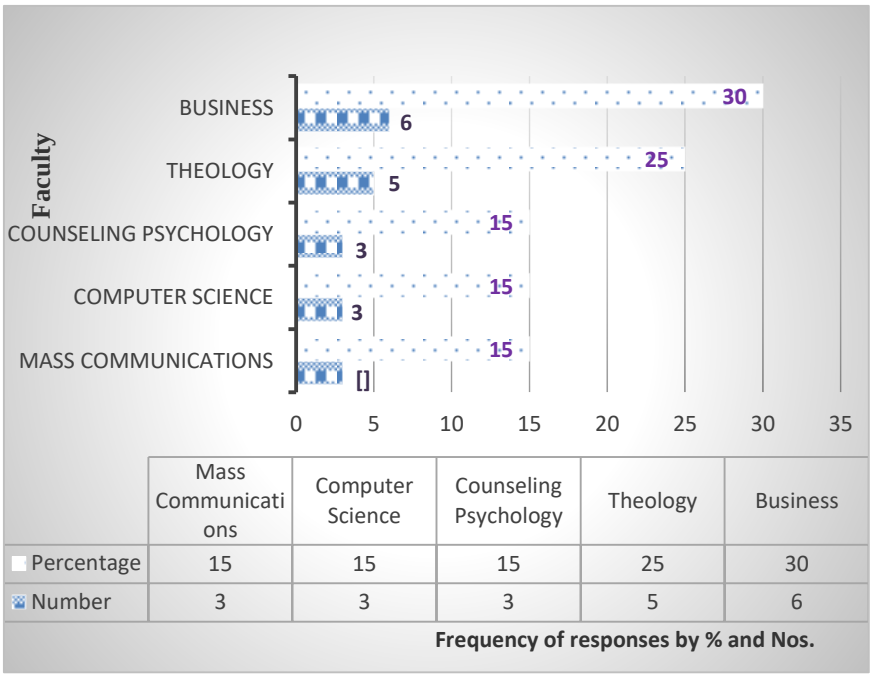

Figure 11: Distribution of Teaching Staff by Faculty

4.1.3 Eligibility of Respondents by Year of Stay at ANUL

The criterion for inclusion in the study required the respondents to have lived through the old manual system and the new electronic system and therefore must have had first-hand experience of the transition period. Students year of study was used as an indicator of the number of their years at the university, while for faculty members, their years of service at the University. The respondents' distribution by the length of stay in presented in **Table 10** shows little difference between the numbers of students who participated in the study from year 1-4.

Table 10: Respondent Duration of Stay at ANU

Category	Period of Association with ANU	Response Frequency	
		No.	%
Students	First years	62	23
	Second year	62	23
	Third year	64	23
	Fourth year	65	24
Faculty	Between10-14 years	5	2
	Between 5-9 years	15	5

Further, the findings shows that majority of faculty members (*N*=15) who participated had worked for ANU for 5-9 years with a few (*N*=5) having worked for over 10 years. At the time of data collection, the new system had been in place for six years. This further confirms that all the respondents had indeed lived through the transition period.

4.2 Drivers for the System Migration from the Manual to the Automated System

It is well documented that the need for change in an organisation set up is a critical success factor to change management. Consequently, the first research question undertook to understand the driving forces for system migration. Library staff including the librarian, the system librarian and heads of sections were asked to explain the need for the change from manual to the automated system. Their response presented in **Table 11** shows that despite the fact that the system was a donation

(R_{11}), and by which it may be construed to mean that they had little input in the decision to migrate, the respondents still cited multiple drivers for system migration. Most of the reasons cited related to improving the library services and products. This is not surprising considering that conventional wisdom holds that a contented employee is a productive employee. The majority of the respondents were optimistic that the new system would improve efficiency in service delivery and working condition as well as pave the way for the introduction of new services and products. These findings collaborate Arnetz's (as cited in Pryor et al., 2008) that established the dominant factor necessitating a change to be the need to improve productivity and efficiency.

Though not directly indicated, these findings suggest that there was a sense of urgency for change. This recognition of a need for change is a positive step towards effective change management and comes as no surprise for an information environment characterised by a rapid change in new products and forms of service delivery.

Other reasons cited include the need to improve the working environment, a factor that is closely associated with improved service delivery. The least cited reason was to enhance marketing and communication (N=10).

Table 11: Factors Influencing the Library System Migration

	Reasons for system migration (sample excerpts)	Reasons for Migration from respondents view	No of multiple response
R_1	"The system was supposed to provide access to electronic journals"	Improve the library services and products	20
R_2	"The manual system took almost five to seven minutes to serve one patron unlike in the new system where it takes an average of two minutes and below"		
R_3	"It made it possible for users to look for library resources via the OPAC since in the manual system all the services were manual"	Provide new services and products	15
R_4	"The manual system did not have provision for other products only print products this denied library users access to electronic products"		
R_5	"With the electronic system communication between library and its users is very easy, users can enquire about services via email which is connected to the new library system and the library is able to remind its users about overdue items, update then on new arrivals in the library"	Provide better communication channels between the library and the users.	10
R_6	"Library statistics is no longer tasking since the system automatically does it"	Enabled efficiency and effectiveness in the library services and process	15
R_7	"The new system makes the processing of library materials very easy and very fast compared to the manual way of processing library materials"		
R_8	"The new system provides better access to the library stock and it is possible to find out areas that need more materials"		
R_9	"It made the work enjoyable and satisfying"	Better working environment and boost the morale of the staff	15
R_{10}	"The new system brought more users to the library and made the place user conducive"	Marketing the library	10
R_{11}	"The new system was donated by friend of university"	Donation	1

Overall, these findings mirror the works of Hallmark and Garcia (as cited in Clarke & Morris, 1998), Adeyoyin et al., (2012), and Borgman (1997). Collectively these authors identified reasons for libraries system migration as a response to user complaints, unresolved system problems, desire for improved services and products and need for enhanced efficiency and productivity amongst others.

Significant in this finding, however, is the absence of any indication suggesting that the initiative for change was driven by feedback from a needs assessment. Moreover, going by the response that the new system was a donation to the library, it can be inferred that there was no needs assessment. This finding contradicts propositions advanced by change management models that a needs assessment of the gaps in the current system or operations and review of the nature of magnitude change and its impact are essential in planning a desirable change management strategy. Such is the centrality of a needs assessment as driving force for successful change management that Jick's 2003 10 step change model, GE's 7 step change acceleration process and Kurt Lewin's 3 step change model, all propose needs analysis as the first phase of a change process. The underlying assumption is that is that when stakeholders see the significance of the change, they are likely to implement it more successful.

4.3 Process of Migration from Manual to Automated System

To answer the second research question on migration process from the manual to the automated system, the respondents were required to respond to two related issues: (1) how they were involved in the system migration process and (2) what change management phases, and their respective activities were undertaken during the migration process. The responses of the library staff (N=15), the librarian, the system librarian, and the ICT staff (N=5) are presented below.

4.3.1 Level of Staff Involvement in the System Migration Process

On the level of involvement in the change process, the survey established that the senior library staff, (that is, the heads of sections and the librarian) were involved in the planning stage while the system librarian participated in the training of the library staff. The rest of the library staff were only involved in data transfer – converting the data from manual to electronic. The ICT staff, on the other hand, took part in the technical aspects of the migration including computerization of all house-keeping operations along with net enabled integrated library software, the creation of OPAC, networking library resources on the institute's website, and development of library server(s) and databases.

There is a double sided inference to this results. On the one hand, the findings suggest that the process of system migration was not all involving. The level of participation of most of the library staff (N=10) was minimal and sidelined to only data entry and transfer contrary to required levels of engagement for a smooth transition. Several authors (Malhan, 2006; Cohn, Kelsey, & Fiels, 1997) emphasis on representation of staff and users involvement in the planning for library automation. They add that the purpose of such participation is to provide more stakeholders to articulate their interests and concerns, share their perspectives and learn about the new system. They suggest that group interaction is an important contributing factor to the success of institutionalising and sustaining library automation years after its implementation and in realigning the new system to the staff daily duties. As previously noted, early engagement of staff in the change process is critical in demystifying rumours and opposition that may arise in an organisational change initiative.

On the hand, the involvement of the library management, albeit minimal, cannot be disputed. All the library section heads (*N*=5) confirmed their participation in the planning stage. Kotter (2007) in his first phase of 'creating a sense of urgency' suggests that over 75% of a company's management must honestly be convinced that business, as usual, is totally unacceptable. The sheer involvement of this cadre of staff in the planning stage may be taken as an indicator of their commitment to the change initiative.

4.3.2 Stages of the Transition Process from Manual to Automated System

Most change management models attest the various steps involved in a change process even though they differ regarding the number of stages, the actual activities in each stage and the order of the steps. Findings from the pilot study suggested that the respondents were largely not familiar with the activities undertaken in a change process. Consequently, to stir up their recall, the respondents were required to identify against Jick Todd's 10 step change model, which phases and activities they participated in. However, not to influence the objectivity of the respondents, the activities within the phases were not included in the instrument. This exclusion meant that the respondents had to specify what activities were done at what stage. **Figure 12** presents their response. The study, however, could not ascertain the sequence of execution of these activities as the respondents could not agree on at what point and in what order the events occurred. Disparities in their narratives suggest that there was no strict adherence to a particular sequence of events. In most cases, activities were executed when a need arose.

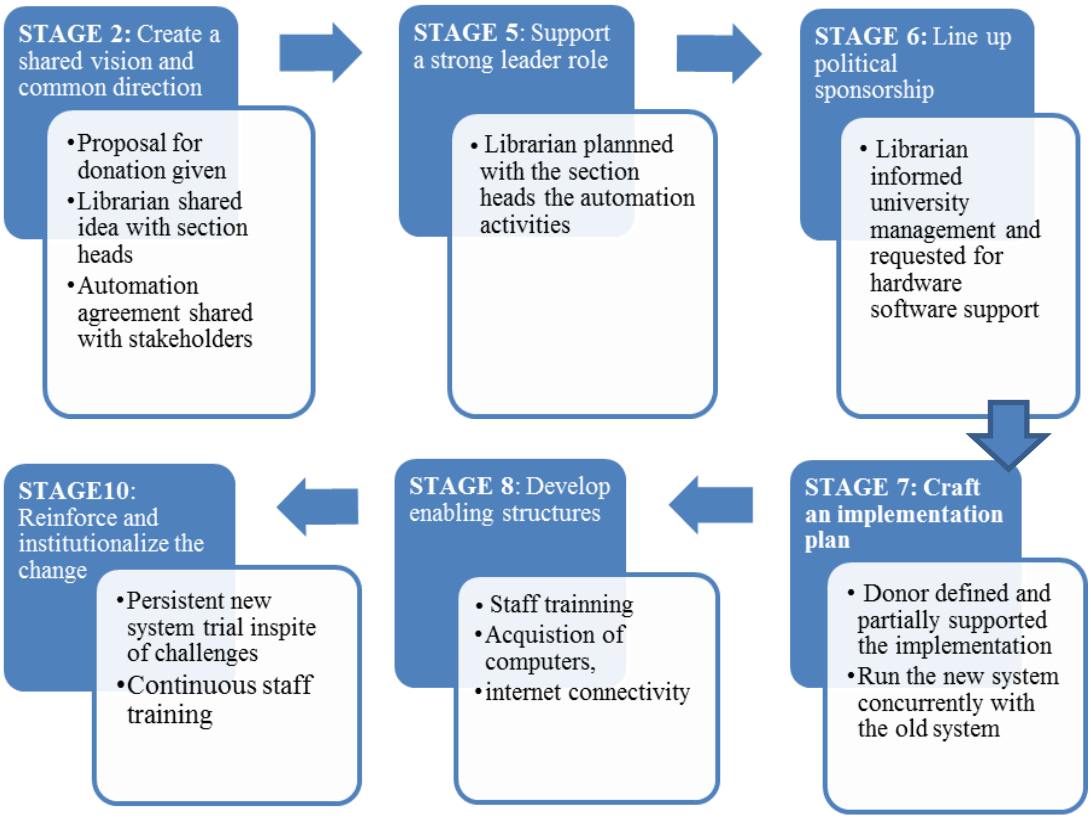

Figure 12: ANUL Change Process

It is apparent from these findings that stage 1 (analyse the organisational need for change), 3 (Separate from the past), 4 (Create a sense of urgency) and 9 (Communicate, involve people and be honest) of Jick Todd's 10 step change process were not executed. Besides, the activities undertaken at each of the stages were not as exhaustively carried as suggested by Jick Todd. Notable amongst these are:

Stage 1- Absence of a needs assessment, partially explained by the fact that the new system was a donation,

Stage 2 - Limited involvement of majority of the shareholders in the new system vision with only the library management being involved in the planning phase,

Stage 3 – Continued use of the old system, thereby limiting full transition from old to new,

Stage 4 - Absence of a sense of urgency as exemplified with the time lapse taken for the system to be fully implemented,

Stage 5 - Partial leadership role seen in the library management in the planning phase and training of staff,

Stage 6- Decimal political sponsorship as exhibited by a significant figure head to spearhead and advocate for the change,

Stage 7 - Unstructured implementation plan as the change initiative was largely donor driven and the two system left to run concurrently without a spelt out programme,

Stage 8 - Minimal development of an enabling structure as evidenced by the minimal acquisition of computers, unreliable internet connectivity and inadequate staff training,

Stage 9 - Adhoc communication of plans and progress for the change process, and

Stag 10 – Incomplete transition to the new system with the occasional relapse to the old system mainly due to an insufficient enabling environment.

The study was unable to establish whether all the phases not executed deliberately omitted clearly or if the respondents were just not aware of what each step of a change management process entails, and therefore could not articulate the actual activities at each phase. Any further probing on this matter was deemed to be leading the responses potentially, and the study abstained from what would seem like influencing the respondents' thoughts and answers. Nevertheless, the findings strongly suggest that there was not sufficient staff involvement at all the stages of the change process,

no structured approach to the change process and there was no framework guiding the change process.

4.4 ANUL Change Management Readiness

To assess the support system in place for the change management, this study adopted and modified Prosci's (2016) organisational change management readiness assessment tool. This tool anchors on five pillars of successful change each comprising of six Likert scale items. These pillars are communication, sponsorship, stakeholder's management, organisation support and training. Self-assessment responses of library and ICT staff (*N*=25) to how ready they thought the library was for the system migration are presented in **Table 12a-f**.

4.4.1 Communication

Communication is an engagement mechanism for building positive change. It helps frame how the stakeholders are introduced and kept informed of the what, how, when and why questions related to the change. The findings presented in **Table 12a** shows that the respondents have a low opinion (ẍ=1.24) of the communication efforts put in place during the transition period.

Table 12a: ANUL Communication Strategy Maturity

	Communication Informing who is affected and impacted regarding the change.	1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree						
	ITEMS	**1**	**2**	**3**	**4**	**5**	**6**	**(x̄)**
1	The library had a clearly defined vision and strategy and changes are continually communicated with all stakeholders.	23	1	1	0	0	0	**1.12**
2	Priorities were set and continually communicated regarding change projects and other competing initiatives	20	3	1	0	1	0	**1.36**
3	The library used multiple communication methods to keep stakeholders informed	18	5	0	1	0	0	**1.28**
4	The library's messaging about new system was clear, concise and consistent.	20	4	0	0	1	0	**1.32**
5	Mechanisms were put in place to identify lapses in effective communication.	24	0	0	1	0	0	**1.12**
	Weighted Average Communication Score	**21**	**2.6**	**0.4**	**0.4**	**0.4**	**0**	**1.24**

The findings indicate an absence of clear structures for regular communication of updates to the stakeholders. There was no evidence of mechanisms put in place to identify lapses in effective communication neither were priorities set concerning change projects and any competing initiatives. Jick's (2003) 10 Step Change Model stresses on the need for disseminating an exact message amongst the change agents and the recipients of change. Similarly, the fourth stage of Kotter's 8 step change model emphasizes on communicating the vision of change management to all

stakeholders. It emphasizes on the significance of quality communication without which the stakeholders will not have the required level of awareness and understanding they need to commit to and implement the change successfully.

Effective communication should, therefore, be deliberate and well thought out. These findings show that ANUL lacked any of these with the respondents strongly disagreeing that the library kept those affected and impacted by the change informed ($\ddot{x} < 2$ in all items). Inadequate change management communication strategy is not unique to ANUL only. In a study conducted on "change management strategies at United States of America University – Africa" (Gichohi, 2015), similar results were obtained. The study established that proposed changes were not promptly and regularly communicated to the library users neither was there open discussion with stakeholders.

4.4.2 Sponsorship

Organizational Change Management Readiness Guide (n.d) acknowledges the potential role of sponsorship in making or breaking a change initiative. They further note the link between successful projects with active sponsors who "champions the change, mitigates change resistance and builds organisational alliances". Such sponsors particularly those in a strategic managerial position can help draw the support of key players. A $\ddot{x}$ score of 2.2 on sponsorship assessment (**Table 12b**) scored by the respondents suggests that there was no active participation by senior management of ANUL in the change initiative.

Table 12b: ANUL Change Management Active Sponsorship Maturity

Sponsorship: Ensuring there is active sponsorship for the change at a senior management level and engaging this sponsorship to achieve the desired results							1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree
ITEMS	**1**	**2**	**3**	**4**	**5**	**6**	**(ẍ)**
6 Change initiatives in the library had an executive sponsor identified.	15	5	5	0	0	0	**1.6**
7 The executive sponsor had the necessary authority over the people, processes and systems to authorize and fund change initiatives.	1	1	1	2	5	15	**5.16**
8 The executive sponsor built awareness of the need for change (why the change is happening).	17	5	0	1	1	1	**1.68**
9 The executive sponsor actively and visibly participated with the new system team throughout the entire change process.	19	4	2	0	0	1	**1.56**
10 The executive sponsor resolved issues and made decisions relating to the library system change schedule, scope and resources.	25	0	0	0	0	0	**1**
Weighted Average Sponsorship Score	**15.4**	**3**	**1.6**	**0.6**	**1.2**	**3.4**	**2.2**

However, there was high score recorded on item seven (ẍ 5.16) showing respondents' agreement with the statement that "the executive sponsor had the necessary authority over the people, processes and systems to authorise and fund change initiatives." This probably underscores the staff expectations of the central role that sponsors need to

play rather than how they actually performed if the earlier findings that established decimal roles of the librarians and the system sponsors.is anything to go by. All the other items scored ẍ < less than average.

The absence of active sponsorship at ANUL can partially be explained by the fact that the new system was a donation resulting in low enthusiasm on the part of ANUL community little sense of obligation on the part of the donors. Such a situation collaborates Prosci's (2016) research report that established a direct correlation between the electiveness of sponsorship and the likelihood of meeting project objectives. According to their findings, 72% of organisations with extremely effective sponsors had their projects meeting or exceeding their set objectives compared to only 29% of organisations that had ineffective sponsors. In their successive previous nine benchmarking studies, effective sponsorship was identified as the top contributor to change success. It provides the vision and the required resources and facilities to see to the success of an introduced innovation. Their findings serve to demonstrate that active and visible sponsorship is a significant contributor to the successful transition.

4.4.3 Stakeholder Management

Stakeholder management relates to the early and routine efforts made to engage key players in a change cycle. It is based on the premise that identifying and managing key player's relationships often directly correlates to successful change efforts. This pillar received a ẍ 0.2 as shown in **Table 12c**.

Like sponsorship, actively engaging stakeholders often helps gain and maintain stakeholder buy-in. In any change processes, there are a number of stakeholders each playing different roles. The approach to each stakeholder category is therefore

expected to be different. A ẍ of 0.2 suggests that the parties concerned were not widely involved, their needs not identified, their potential contribution not considered nor were their special tactics put in place for handling resistance to change from the various stakeholders. This result come as no surprise considering that the level of staff participation was found to be low as indicated in 4.3.1

Table 12c: ANUL Stakeholder Management Maturity

Stakeholder Management -Gaining buy-in for the changes from those involved and affected, directly or indirectly. Involving the right people in the design and implementation of changes, to make sure the right changes are made.		1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree						
	ITEM	**1**	**2**	**3**	**4**	**5**	**6**	**(ẍ)**
11	The executive sponsor was willing and able to build a sponsorship coalition for change, and was able to manage resistance from all stakeholders.	18	2	0	3	1	1	**1.8**
12	Change was managed effectively and change successes were celebrated, both in private and in public.	23	1	0	0	1	0	**1.2**
13	Stakeholders heard a consistent and unified message from various levels of executives	20	3	1	1	0	0	**1.32**
14	Change initiatives were accurately tailored to the particular needs and concerns of each stakeholder group.	10	3	4	0	0	0	**1.12**
15	Special tactics were developed for handling resistance to change from various stakeholders.	23	1	1	0	0	0	**1.12**
Average Stakeholder Management Score		**17.2**	**18.8**	**2**	**1.2**	**0.8**	**0.4**	**0.2**

4.4.4 Organisational Support (Readiness)

The organisational pillar (originally referred to as readiness pillar) examines an organisation's ability to marshal everyone to accept and advance with change. Factors considered include support accorded to those affected, the culture and history of change in the organisation, accountability, resource availability, and availability of staff with change management knowledge and experience. A ẍ of 1.9 was scored on the level of organisational support by the respondents as shown in **Table 12d** suggesting that the institution did very little in adapting the stakeholders to the new system.

Table 12d: ANUL Organisational Support Maturity

Readiness- Getting people ready to adapt to the changes by ensuring they have the right information and tool sets.		1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree						
	ITEM	**1**	**2**	**3**	**4**	**5**	**6**	**(ẍ)**
16	A structured change management approach was communicated and applied to change process.	20	2	3	0	0	0	**1.32**
17	Change management team members were identified. Managers and staff were trained on change management.	0	5	0	5	15	0	**4.2**
18	Project team and change management teams tracked progress and were able to resolve related issues through set project management processes. A project plan had been integrated with a change management plan.	20	0	5	0	0	0	**1.4**

19	Resources for change projects were identified and acquired based on a project plan. Resources had the necessary time to complete the work for the change.	22	0	3	2	0	0	**1.56**
20	Feedback processes were continually used to determine how effectively change was being adopted by stakeholders.	24	0	1	0	0	0	**1.08**
Weighted Average Readiness Score		**17.2**	**1.4**	**2.4**	**1.4**	**3**	**0**	**1.9**

Prosci (2016) explains that a successful change management strategy is a product of assessments, analysis of the characteristics of a change and custom solutions for the unique situations of the change. Thus structured process, transparency, effective communication and participation of those to be affected by the changes have been shown to be significant in soliciting support of the various stakeholders and consequently ensuring an easier, smoother and general acceptance and willingness to accept the consequences of the change process (Shepherd, 2000; Adeyoyin et al., 2011). Though not asked directly, the absence of a monitoring system at ANUL may explain why the new library system had not fully functioned at the time of data collection as informed decisions could not be arrived at in the absence of an assessment of progress made.

4.4.5 Training

The primary goal of training is to understand gaps in stakeholders' skills and bridge these skills before the change is implemented. One way of minimizing resistance and ensuring a successful transition is by enabling all users to work with and build their

confidence in the new processes/systems. Providing adequate training and communication about the change is essential in demystifying rumours and opposition to the change initiative. Training scored highest as indicated in **Table 12e** with a ẍ of 3.82 suggesting a general acceptance of the level of training received about the new system.

This result collaborates initial findings that showed the system librarian having been involved in the training of the library staff. Although the tool used to assess the readiness for change did not offer much room for elaboration, the participants' rating suggest that the library management realised the need for reinforcing skills and behaviors required for the change effort (ẍ = 5.76) and provided for flexible methods of training effort (ẍ = 5.8) suggesting that the library management saw the need for, and acted on reinforcing skills and behaviors required for the change effort (ẍ = 5.76) as well as provided flexible methods of training effort (ẍ = 5.8).

Table 12e: ANUL Training Facilitation Maturity

Training the appropriate resources on the change.		1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree						
	ITEMS	**1**	**2**	**3**	**4**	**5**	**6**	**(ẍ)**
21	Library recognizes and reinforced skills and behaviors required for the change effort.	0	0	0	1	4	20	**5.76**
22	Skills and knowledge needed for transition were identified.	10	10	3	2	0	0	**1.88**
23	Skills assessments were continually conducted for	21	0	2	15	2	0	**3.88**

	change projects and gaps were identified for transition.							
24	Training was developed and scheduled proactively, based on gaps and need assessments.	18	0	2	5	0	0	**1.76**
25	Flexible methods were employed for training	0	0	0	0	5	20	**5.8**
Weighted Average Training Score		**9.8**	**2**	**1.4**	**4.6**	**2.2**	**8**	**3.82**

When the library and ICT staff were prompted further on kind of training they had received in relation to the new system, they identified three forms of training as shown in **Figure 13**: on job training, one-on-one training and module training. On job training was mainly in the form of observing other members of staff using the system. Module training took place mainly during installation and targeted staff who were directly using that specific module.

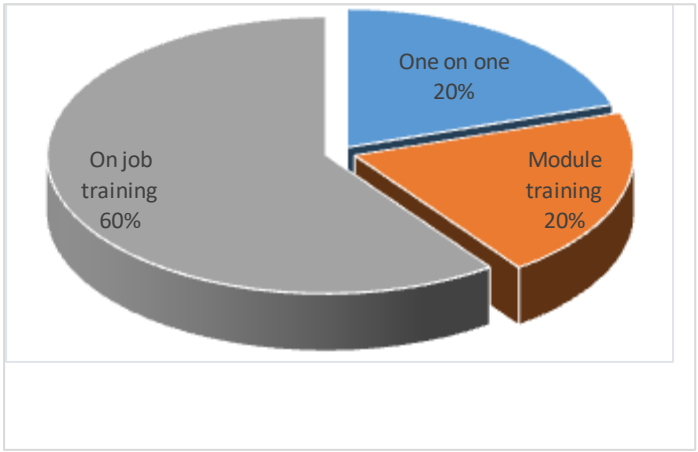

Figure 13: Forms of Training Respondents Underwent

The study further established that the library management was responsible for spearheading the training through a phase to phase strategy as was affirmed by one of the respondents: It was the librarian's idea to automate the library, and he made sure all the members of staff would undergo training for the new system **(R_{12})**

According to Paton and McCalman (2008), the Librarian has various options in managing the library and introducing innovative services and facilities. Such training and knowledge transfer should aim at helping the staff have the necessary technical and business knowledge skills and abilities to use the new system. To this end, ANUL staff were largely (60%) initiated to the new system through continuous on-job training suggesting that much of the training may have been informal. The study, however, did not determine if the individual staff initiated the training or were planned strategy. Only 20% of respondents had undergone formal module training.

Further, although the findings show that the librarian rightfully took the initiative of organising the training, there is no indication that the respondents received any other training other than those related to their routine operations nor was there a continuous skills assessments to establish gaps in competencies required ẍ=1.88 & 1.76 for item no. 22 and 24 respectfully-(**Table 12e**). A planned and strategic change management training requires that in addition to the organisational leadership (herein, the librarian), a team of change agents should be trained on change management methodologies such as ADKAR or project management as well as well as the specifics on the change itself (Prosci, 2007). Thus it may be concluded that there were weaknesses in the training strategy adopted by ANUL despite the sentiments of satisfaction with the transition process shared by the majority of the respondents as earlier noted.

Overall, the respondents rated ANUL's level of change management readiness (**Table 12f**) as very low (ẍ=1.56). With the expectation of training pillar (ẍ=3.82), all the other pillars were found to be far below average. Prosci's nine benchmarking on change management in successive studies established the following as the top seven contributions to the change (Prosci, 2016: p.9): 1. Active and visible executive sponsorship 2. Structured change management approach 3. Dedicated change management resources 4. Integration and engagement with project management 5. Employee engagement and participation 6. Frequent and open communication 7. Engagement with middle managers. ANUL fails to meet the expected thresholds in all of these areas.

In a study to establish the perspectives of six university librarians from six academic institutions on innovation in academic libraries, Jantz (2012b) determined that leadership was regarded as the most significant determinant of innovation.

Table 12f: ANUL Change Management Readiness

Pillars	Strongly Disagree	Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree	ẍ
Communication	21	2.6	0.4	0.4	0.4	0	1.24
Sponsorship	15.4	3	1.6	0.6	1.2	3.4	2.2
Stakeholder Management	17.2	18.8	2	1.2	0.8	0.4	0.2
Organisational Support	17.2	1.4	2.4	1.4	3	0	1.9
Training	9.8	2	1.4	4.6	2.2	8	3.82
				Change management maturity weighted average score			**1.56**

Further, the findings revealed that a firm commitment on the part of the university leader to develop and sustain a state-of-the-art university library system was necessary. Table 12f: Overall Mean Scores of ANUL Change Management Readiness According to this work, a leader can accelerate the process of change by constituting staff teams and by personally monitoring the modernization work of the library. In a different study on “strategic management practices in academic libraries in Kenya: The case of USIU", Gichohi (2015) underscores the critical role played by library management. The study concludes that, amongst other factors, strategic behaviour in academic libraries is being inhibited by the leadership, clearly showing that library leadership underpins much of the success or failure of a change process.

In the case of ANUL, the study findings shows leadership failure in multiple areas as exemplified in the limited or absence of the following: (1) A structured change management approach, (2) a change management team, (3) training on change management strategies, (4) tactics for handling resistance, (5) structured feedback process, (6) special tactics for handling resistance to change from various stakeholders, and (7) resources for change projects set aside. All these studies lend support to Adeyoyin et al., (2012) observation that organisational swiftness is only achievable when every unit, functions, and employee are able and eager to rise to every challenge.

4.5 Response to the Migration Process

The fourth research question was tailored to determine user’s opinion and response to the migration process. To achieve this, the library users, that is the students, and faculty members were required to respond to questions constructed to not only elicit

their opinion of the transition process but also their assessment of the status of the library services and products after the migration.

4.5.1 Perceptions and Opinion of the Migration Process

Figure 14 shows minimal variation in library and ICT staff and users opinions ANUL users (faculty and students) opinion of the migration process. Most significantly though is the findings that show that majority of the respondents (over 50%) had negative view regarding the migration process suggesting that the users were disappointed with the change process.

First, the users expressed their concern over the absence of a user needs analysis. According to Dorner, Gorman, and Calvert (2015) analyzing and assessing the information needs of clients is key to the provision of effective service and appropriate collections. Jicks' 2003 10-step model of change management also emphasize the importance of analyzing an organizational need for change so as to create a shared vision and common direction.

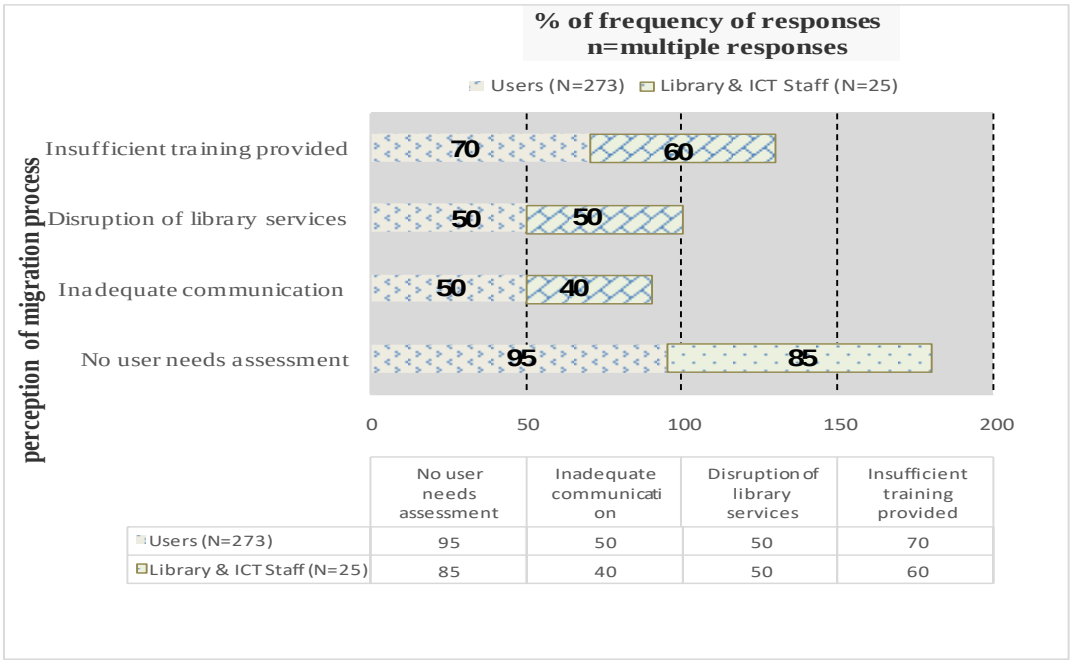

Figure 14: Users' Opinion of the Change Management Process

The results reiterate respondents' disappointment with the adequacy of training offered to both the users and staff of the library and a majority (70% and 60% of Users and Library and ICT staff respectfully). Malhan (2006) emphasizes that while adopting new technology, training and orientation for staff and users should be an integral part of the migration. The respondents also recorded their disappointment with the disruption of service during the transition and the low communication shared regarding the new system which left most of them unsure of what to expect.

4.5.2 Perceptions and Opinion of the New System

The respondents were further asked to view their opinion of the new system. The responses for the library users (faculty and students) and those of the library staff are presented in **Figure 15** and **Table 13** in page **124 and 125** respectfully. Overall, both user groups were of the opinion that the change from manual to automated library system had enabled the provision of more services and products, facilitated effective and efficient services and improved the library's status (**Figure 15**) thus fulfilling the central purpose of libraries as envisioned by Chisenga (2006).

The students explained that the new services and products greatly assisted them in their academic work especially in the writing of assignments and term papers:

> I now can access a wide variety of electronic databases much easily and this has improved the way I write my CATs [Continuous Assessment Tests] **R_{13}**

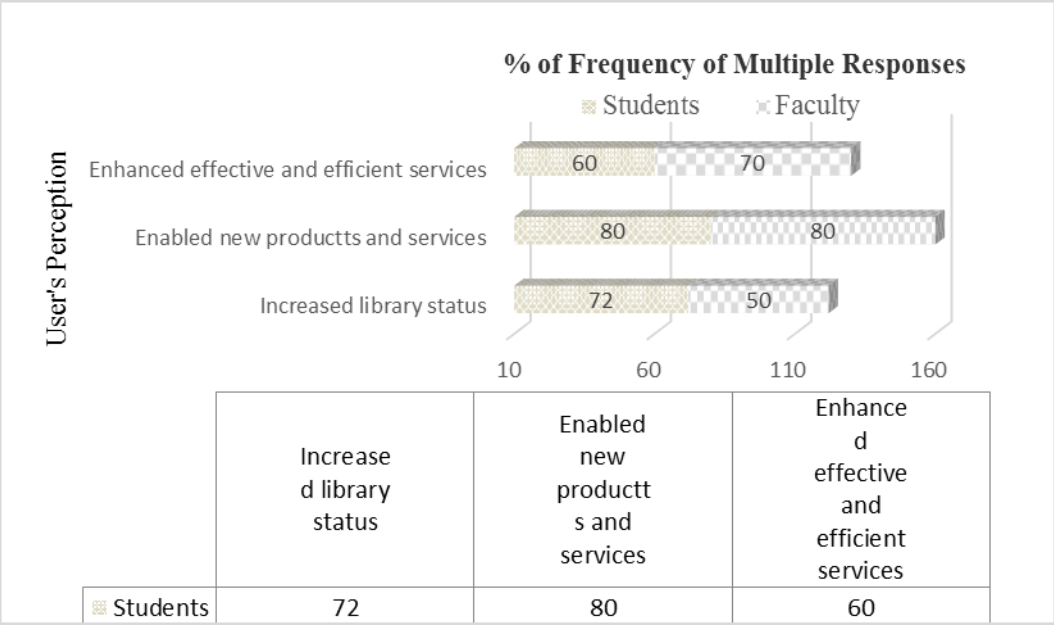

Figure 15: User's Perception of the New System

Both user groups expressed that the transition to electronic system had transformed their perception of the library:

> Today, when you walk into the library you are almost certainly sure that you will leave satisfied. **R14**
>
> I have come to be more dependable on the library as I realise it has much to offer.**R15**

On the other hand, the library staff cited boosting of individual morale as one of the positive effects experienced by the introduction of new services **(Table 13)**. As a result, they were able to provide quick services and explore other areas assisted by the new technology. They also acknowledged that the new system had improved the general efficiency and effectiveness of service delivery and operations such as speed of completing assignments -"It's easier and faster for me to verify bibliographic details as I catalogue the books"**R16** to widening the outreach of their services to remote users –"I think the greatest beneficiaries are our distance learners. They now

don't need to physical come to the library to receive services as basic as access to information resources." **R_{17}**

Unlike the library users, the library staff also identified some negative aspects experienced with the system transition notably, the disruption of library services, which agrees with users earlier complain of interruption in service delivery **(Figure 14).**

Table 13: Library Staff Perception of the New System

Perception of the new automated system	**Response**	
	Frequency multiple responses	% multiple responses
Has made work easier and boosted morale	90	31
Favourable for most student especially distance learning student	20	7
Encounter challenges such as internet downtimes	30	10
Effective, and efficient,-easy to use and access	70	24
Reliable, saves time, quick/faster and more access to variety of related books	80	27

4.6 Change Management Challenges Experienced

To understand the factors that could have derailed the change management process, only the opinion of the library and ICT staff were sort. Restricting the question to this group rests on the assumption that the responsibility for the execution of the change rests on the library even though other stakeholders participate in the process. The library and ICT staff identified seven forms of challenges as presented in **Figure 16**.

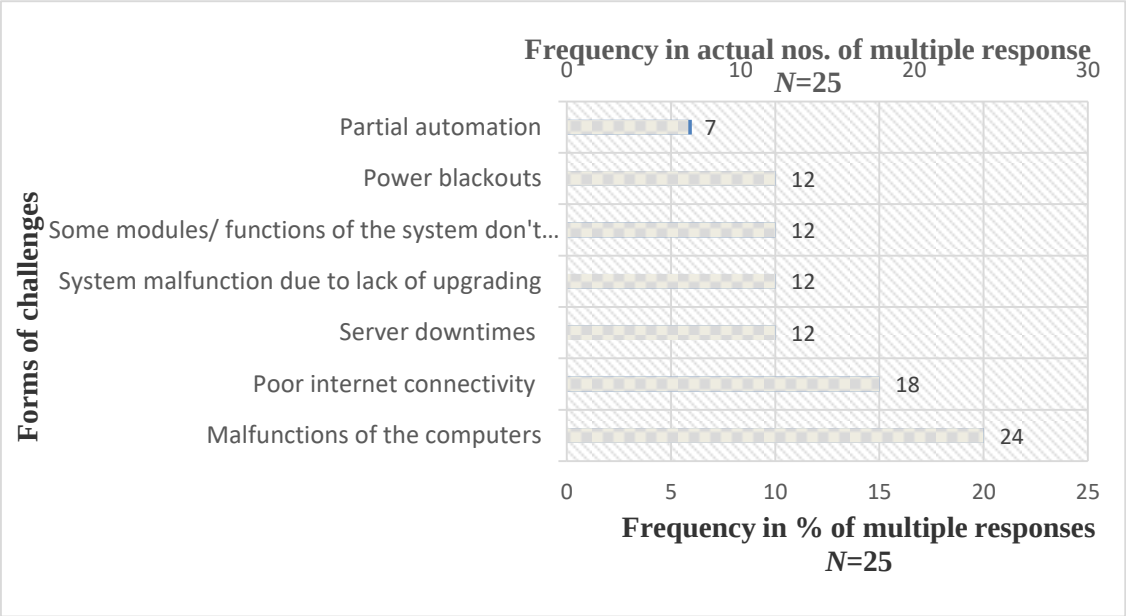

Figure 16: Challenges Associated with Change Management Experienced During the System Migration

Categorizing them by their potential root cause, they fall into three broad categories. They include those associated with 1. Poor enabling infrastructure such as power blackouts. 2. Server downtimes and poor internet connectivity. 3. Libraries administrative/managerial failure to attend to the system such as partial automation and malfunction of the computers and server due to lack of upgrading of the software. 4. The new system's functionality such as some modules not functioning well. However, for this latter reason, the respondents were not able to confidently say if the inadequate system capacity was a result of system's limitation in totality or whether it was due to poor installation of the system.

The majority of the respondents regarded malfunctioning of the computers and poor internet connectivity as the greatest challenge. This finding is in contrast to popular association of unsuccessful change management process to poor human resource administration and resistance as brought out in Adeyoyin et al. (2012).

The study findings instead established that technological challenges such as malfunctioning of the computers and poor internet connectivity were the major impediments. Noteworthy to the study is the association of these obstacles to poor enabling infrastructure. The fact that the new system was a donation may explain why ANUL was not sufficiently prepared with the prerequisite support infrastructure; most probably they had not sufficiently planned for it. Moreover, initial findings also suggested that ANUL had no change management plan and consequently had not factored in resources to support the change process.

4.7 Respondents' Proposals on Ways to Promote Successful System Migration

When asked to suggest ways of improving the system migration process, the library and ICT staff had various suggestions as captured in **Table 14**. The respondents' opinions on the matter, however, did not vary much. Of the six suggestions put forth, the respondents sharing the same idea was over 75% in each case. None-the-less, the most cited proposal was training on the use of the system and acquisition of right hardware and software as well as their upgrading. The number of students and faculty members who offered suggestions on this matter were comparatively few. Of the few who responded, they too indicated the need to provide more training to the stakeholders, engage the users by continuously updating them on the progress, and ensuring that services are not disrupted during the period.

Table 14: Proposed Strategies for Facilitating a Successful System Migration

Respondents' view on successful System migration	Study's Interpretation of action to be taken	Frequency Multiple Responses n=25
Acquisition of right hardware and software and provide upgrading of system	Prevent breakdown and malfunction of the computers and system	22
Assurance of job security	Provide adequate communication and understanding of the impact of the system to the individuals	19
Include Library and ICT staff in planning stage	Involve the stakeholders in the initial planning phase of the migration process	19
The two systems should run parallel to each other	Ensure continuity of processes and services	20
Provide adequate awareness/ communication of the proposed changes	Adopt an effect communication and market strategy	22
Train the students and the staff on how to use the system	Empower the stakeholder through structured training programmes	23

The implication of these findings is that ANUL needs to empower the stakeholder more through structured training programmes. To minimise the malfunction of the systems the library needs enhanced maintenance and upgrading of hardware and software. Other proposals suggested include enhanced stakeholder communication, parallel running of the two systems until the new system stabilises, assurance of job security, and more inclusiveness of Library and ICT staff in the initial planning stage.

These proposals support earlier findings that established ANUL's change management process was not adequately structured: Communication, stakeholder involvement, stakeholder training, and level of preparedness were wanting. The planning stage which provides a platform for creating awareness about the change, provide project specific information and explain the goals and purpose of the change was not adequately executed. This resulted in respondents' feeling of exclusion in the initial decision making phase and apprehensiveness over their job security. A communication strategy is expected to inform the stakeholders of the change impacted on the business processes, clarify roles of various stakeholders, outline the implementation approach, determine training need and communicate the timelines and planned rollout activities. No such a strategy was in place.

All in all, the library's change management readiness was significantly low accounting largely for the unsuccessful full migration to the new system experienced by ANUL.

4.8 Summary

This chapter has detailed findings from data analysis of 278 respondents. The aim of this study was to examine the change management process at African Nazarene University Library system's migration with a view to suggesting measures that can be taken to optimise the change management efforts. The findings are based on data collected using questionnaires and interview schedules from 5 ICT staff, 20 library staff, 20 lecturers, and 253 students of ANU. Qualitative data was quantified after initial thematic analysis for ease of comparison and other descriptive analysis alongside the quantitative data thereby providing an enhanced understanding and interpretation of the research questions.

Over and above, the findings showed that there was an absence of a structured change management process particularly regarding the process and the prerequisite enabling support system. Opinions of faculty members and students regarding the change process and the new system were not far apart; sharing both apprehensions and optimisms.

The next chapter will provides a summary of these findings, draws conclusions and makes recommendations on both strategies for enhancing the change process and areas of future research.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This study set out to analyze the change management process during African Nazarene University Library system's migration with the intention of proposing measures that can be taken to optimize the change management efforts. Triangulation of the two approaches in a mixed method convergence was used to obtain different but complementary data on the change management process at ANUL. Questionnaires and interview schedule were used to collect data from 253 ANU students, 20 faculty members, 20 library staff and 5 ICT staff. The study employed a conjunctive data analysis method that combines quantitative and qualitative methods. Thematic and descriptive analysis were used to analyse the data later presented in the form of frequencies, percentages, arithmetic means, narratives, and excerpts. This chapter provides a summary of the findings, conclusions, and recommendations.

5.1 Summary of Findings

The preceding summary is based on the following research questions: What necessitated the need to change from manual system to the automated system?; How was the transition from manual to automated systems carried out?; What were the existing structures and support systems for library system migration in place?; What are the staff and users' opinion of, and reaction to, how change management process was handled during the system migration?; What factors derailed the management of change and how?; and what measures can be put in place to facilitate a successful system migration?

5.1.1 RQ1 -Factors Necessitating the Need for Change from Manual to Automated System

The results showed that the ANUL community had a desire for a library system change not-with-standing-that the new system was a donation. In their opinion, various factors necessitated the migration **(Table 11**). The principal reasons cited were the need to improve the library services and products, the desire to improve the working environment and the optimism that the new system would improve efficiency in service delivery and provide a broad range of services and products. Marketing and communication had minimal influence on the migration decision. There was, however, no evidence of a needs assessment as having been conducted to establish gaps in the existing system. Never-the-less, the mere fact that the respondents could list a range of factors they perceived significant to justify the transition from the manual to the automated system is a positive indicator of a sense of urgency for change.

5.1.2 RQ2 - The Transition Process from Manual to Automated System

Two constructs were used to measure how the system migration process took place: the level of participation of the stakeholders in the process and the stages and activities that took place in the process. Response from the library and ICT staff indicates that different groups played different roles. The senior library staff, that is, the heads of section and librarian were involved in the planning stage while the system librarian participated in the training of the library staff. The rest of the library staff took part in the conversion of the data from manual to electronic whereas the ICT staff was involved in the technical part of the migration (**4.3.1**). Overall the level

of these stakeholders involvement was inadequate with very minimal participation in the initial decision making phases except for the management staff of the library.

Mapping of ANUL's change management process against Jick Todd's 10 step change model revealed that the library did not undertake many of the phases expected in an efficient change process. Additionally, the depth of the activities within these phases executed was wanting. There was no evidence of stages 1 (analysis of the organizational need for change), stage 3 (separating from the past), stage 4 (creating a sense of urgency) and stage 9 (communicating honestly and involving people) being executed **(Figure 12).** The change process was largely unstructured and unplanned for with the majority of the respondents demonstrating little mastery of knowledge of what strategic change management entails.

5.1.3 RQ3: Existing Structures and Support Systems for Library System Migration

On the question of the support system in place for the migration, the library and ICT staff self-assessed ANUL's change management maturity level using a five pillar tool of organisational change management readiness. Each pillar comprised of six Likert scale items **(Table 12a-e**). Overall, the weighted average score was below average (ẍ = 1.56). Except for training pillar (ẍ = 3.82), all the other components were found to be far below average **(Table 12f).** Firstly, ANUL lacked a communication strategy that would promote effective stakeholder communication (ẍ=1.24). Secondly, the library did not have (ẍ=2.2) an active, supportive sponsorship to champion, change, mitigate change resistance as well as build organizational alliances even though the librarian played a minimal role in advocating for resources and planning for the training. Thirdly, it lacked an active stakeholders' management (ẍ =0.2) that

identifies, engages and acknowledges the contribution of different stakeholders needs and contribution. Fourthly, there was no structured organisational mechanism for supporting the people nor promoting cultural practices necessary for the adaptation of the change while documenting and accounting for progress made (ẍ=1.9).

The only area of change management that ANUL seemed to have got it right was training (ẍ =3.82). The library management appeared to realise the need for reinforcing skills and behaviors required for the change effort (ẍ = 5.76) and provided for flexible methods of training effort (ẍ = 5.8 **Table 12e**). The library staff received three forms of training; on-job training, one-on-one training, and module training (**Figure 13**). Although the library management spearheaded the training and the systems librarian conducted the training, most of the training received was informal with 80% of the respondents indicating that they had received their training through on-job and one-on-one interactions. Much, if not all these training, was limited to the use of the system in daily operational routine jobs. There was no indication that the respondents had received change management training, nor was there a regular skills assessments to identify gaps in competencies required. Thus despite the high sentiments of satisfaction with the score on training efforts by the respondents, these deficiencies point to some weaknesses in the training strategy adopted.

5.1.4 RQ4: Staff and Users' Opinion of and Reaction to the Management of Change during the System Migration

The findings of the study found little variation in the respondents' perception of the migration process **(Figure 14).** They all expressed dissatisfaction with the training they had received with some reckoning that this had negatively influenced their use of the new system. Further, the findings revealed that indeed no needs assessment was

conducted to establish the stakeholders' needs nor gaps in the old system. Similarly, the users were of the opinion that there was no effective communication to induct them adequately to the new system. They also expressed their disappointment with the disruption in the service delivery during the migration.

Despite their discontent with the system migration process, the Staff (library and ICT staff) and users (faculty and students) were relatively satisfied with the new system. According to the users, it had expanded the services and products offered by the library and enhanced service delivery **(Figure15)** changing their perception of the library (**R_{14}, R_{15}**). The library staff collaborated these findings **(Table 13)** adding that the new system had boosted their morale thereby motivating them to be more productive, efficient and proactive in extending their services to remote users. They none-the-less voiced their concern with the internet downtime which implied disruption in service delivery.

5.1.5 RQ5: Factors Derailing the Change Management Process

An analysis of the data related to impediments to the change process identified three categories based on the root course of the problems experienced **(Figure 14).** The first group links to poor infrastructures such as power blackout, server downtimes, and poor internet connectivity. The second, with the libraries oversight such as lack of upgrading software, incomplete implementation of the system's applications/modules, poor maintenance of the computers rendering some of them malfunction. The third relates to reduced functionality of some of the modules. Of these, the major challenges were poor malfunctioning of the computers and the poor internet connectivity as purported by a majority of the respondents.

5.1.6 RQ6: Proposed Measures to be put in place to facilitate a Successful System Migration Process

In partial fulfillment of the study's objective of proposing ways of enhancing the change management process for successful migration, the respondents were asked to suggest what they thought would facilitate a successful system migration. While there was no significant difference in opinions on this, more respondents proposed expanded training on the use of the system, acquisition of right hardware and software and upgrading of the system **(**Table 14**).** Other interventions proposed included an effective stakeholder's communication, more involvement of library and ICT staff in the initial phase (planning) of the migration, and a phase implementation where the two system would run parallel to each other thus allowing for business continuity.

5.2 Conclusion

The motivation for this study stemmed from the fact that ten years after the acquisition of Sirs Mandarin library information system, ANUL had yet realised full implementation of the automated system. The library kept relapsing back and forth to the manual system. While extant literature has attributed such transformative initiatives failures to a range of factors, poor change management strategies is considerably amongst the principal possible reason. Consequently, the study undertook an assessment of the change management process of the library system's migration. Engaging in an audit of the change process was informed by extensive literature that shows that such reviews are critical for the development of informed decisions and corrective actions to be taken in any transformative initiatives.

The study findings vividly established that ANUL lacked a structured change management approach in its system migration. The process of change either required some critical phases or activities to be incorporated. Notably lacking were a needs assessment to establish gaps in the manual system, and analysis of stakeholders' needs, and infrastructural requirements. Except for modest training that the library staff and users received, the library ranked poorly in all the other change management maturity indicators - communication, sponsorship, stakeholders management and readiness pillars. No wonder users' perception of the change process was negatively skewed. The over-arching challenges derailing the change management were inadequate supporting infrastructure, administrative/managerial laxity, and malfunctioning of the new system. These findings broadly support the study's original assumption that the change management approach taken by ANUL considerably accounted for the non-optimal operation of the automated system.

Change, however, is expected to bring about positive impact. Thus in spite of the deficiency in the change management process and support system, the staff and users were enthusiastic and optimistic about the positive impact in service delivery, ease and enhanced access to information services that the new system promised.

Overall the findings of study contribute and broaden knowledge and discussions on change management in a highly transformative environment such as libraries. It demonstrates the need to independently examine contextual environment surrounding the change process and design 'context sensitive' approach to change management strategies. Above all, it shows that without a structured approach to change management, realizing successful library system migration becomes a challenge.

5.3 Recommendations

The ultimate objective of this study was to propose a change management strategy that ANUL could use for its future projects based on the lessons learned from their experience in the current system migration process. Am convinced that such a strategy would not only greatly addresses most of the challenges that ANUL is currently facing, but it would contribute widely towards its change management maturity.

5.3.1 Proposed Change Management Strategy for ANUL

The proposed change management strategy **(Figure 17)** borrows from the extant literature while taking cognizance of the contextual setting of ANUL as established in the study findings. It also takes on board the proposed suggestions by the respondents. This proposed change management strategy can be used for most change initiatives that ANUL may undertake in the future with minimal alterations.

5.3.1.1 Components of the Proposed ANUL Change Management Strategy

The proposed ANUL Change management strategy constitutes four phases. The following section provides a description of each of these phases:

Phase 1 – Change analysis: The proposed change management strategy revolves around change process analysis. This phase has four components: Analysis of the type of change, change specification, change approach and change management readiness assessment. Successful strategies for change management include evaluations of the characteristics of the change and identification of custom solutions for any unique situations of the change. The findings of this study showed that ANUL did not engage adequately in this preliminary analysis before implementing the change leading to an

unstructured and largely unplanned change approach. The output of these activities plays a significant role in identifying principle decision-making considerations for any change initiative as well as informing further decisions on the change implementation framework.

Whether the new system is a donation or not, does not exempt the library from conducting this initial analysis. Such an exercise is crucial if a full understanding of the implication of such a large scale change initiative is to be achieved. It would expose the potential and limitation of alternative approaches that could be adopted, the potential risks to be expected and their impact, and an overall institution's capacity to manage and sustain the change initiative. Observing this phase would mean that the ultimate approach adopted by the library would be founded on a robust and objective assessment of the library's ability to implement the desirable changes as well as establish how the new system could best be customized to meet the library's needs.

In the same way, a risk analysis would project potential challenges such as disruption of services due to internet and power downtime, staff resistance, resource limitation amongst others. Based on these findings, the library can then devise appropriate modalities of circumventing them, an undertaking that would promote smoother transition and ensuring business continuity.

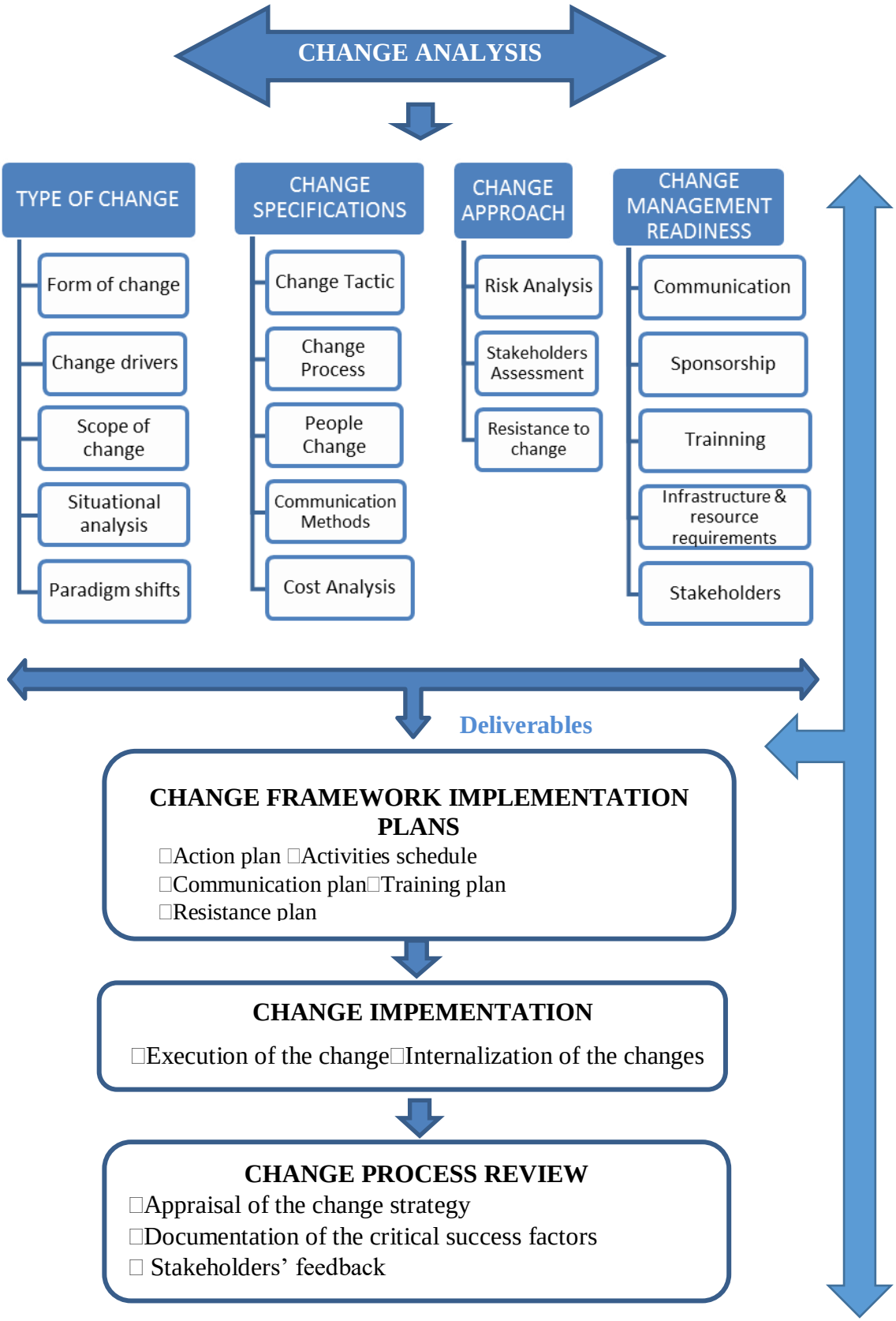

Figure 17: Proposed ANUL Change Management Strategy

Phase 2 – Change framework implementation plan: From the findings of the study, ANUL did not appear to have comprehensive plans that take account of the required resources for the change process, activities schedule, communication strategy, resistance management, and training schedule. The change process decisions were largely based on individuals' intuitions and gentle man consensus agreements arrived at by library management during board meetings. The result was the impartial transition to the new system. Consequently, the second phase of the strategy requires ANUL to develop several change management plans for use as reference guides to the change process. These may include the action plan, activities schedule, communication plan, training plan and resistance plan. Such plans would ensure that the change process is built on a change road map that recognizes the organisational strengths and weaknesses.

Phase 3- Change implementation: Change efforts are incomplete if the intended objectives are not entirely realised. The findings of the study established challenges experienced with the new automated system, many of which could have been avoided if concerted proactive efforts had been made to address them. Allowing for relapse back and forth to old library system implies that not enough is being done to transit totally from the old ways to the new norms of conducting business. Thus in the third implementation phase, I propose that the library engages in executing the change plans developed in the second phase. Change disturbs the framework by which people make sense of their daily lives and work activities Adherence to the suggested plans would promote the internalization of the changes into the organisation structure, systems, process and individuals' attitudes thereby ensuring a smooth and fruitful

transition. Successful change management should result in the complete change in behaviours or practices.

Phase 4 – Change process review: It is widely accepted that libraries are learning organisations and that learning from the past is essential to prevent repeated mistakes. Findings of the study did not provide any evidence of concerted efforts by ANUL to diagnose their change experience. It is precisely this that drew the study interest to examine the change process and determine if it did contribute to the dismal achievement of the system change initiative. Review of the literature indicate that change experiences are not the same. However, use of the knowledge acquired in one change process to inform future change process decisions could prevent reinvention of the wheel while at the same time fast track future change initiatives.

For this reason, the study proposes that the last phase should include monitoring and evaluation of the change process. This can be achieved by documenting the critical success factors as well as the challenges experienced. The same evaluation reports could additionally be shared with the various stakeholders as this would most likely build healthy relationships and buy-in their willingness to support the new changes as well as extend their support for future projects.

As a result of the aforementioned observations, I propose a framework for change management strategy detailing the decisions and direction of activities undertaken at different stages of the change process. This framework can be used when implementing any change initiative in the library and not just library system migration. It is my conviction that formulating such as a change management strategy

is the first critical step towards implementing a sustainable change management methodology.

Today organisations must continuously conduct environmental scan for threats and opportunity and take prompt action if they are to remain competitive. Change is constant and organizations need to be flexible and ready to respond at any time. The proposed framework therefore proposes that ANUL should, over time, allow for more flexibility that would enable them to readily react to any emerging issues at any point of the change process. This means that change management must be integrated into the organisation culture. The library must strive to identify and build on the critical success factors.

5.3.2 Recommendations for Further Research

Based on the findings of the study as well as the extant literature reviewed, the study makes the following recommendations for further areas of study:

5.3.2.1 Situational and Environmental Scan Analysis

The findings of the study established that the decision to migrate from the manual system to the automated system was not founded on a needs or gaps analysis. While the respondents were able to identify change drivers that collaborate the larger literature on forces that necessitate a change in libraries, the extent to which the stated factors influenced the system change decision in ANUL still needs to be further investigated. On the basis of this, I recommend that future research be conducted to assess the appropriateness of the present library systems and process as well as an environment scan to establish the form and extent to which internal and external forces is exerting pressure on any change initiative in the library.

5.3.2.2 ANUL Change Management Readiness Assessment

This study based its assessment on the respondents' self-assessment of change process during library system migration. Their level of recall and objectivity cannot be ignored particularly considering that the findings showed that majority had little knowledge on change management. Drawing on the reported low ANUL change management readiness, I recommend further research on the subject. Such a study should adopt a different methodological approach that would include on-ground practical assessment of the presence or absence of organisational change management readiness indicators and an expanded evaluation criteria that would document content analysis of the change management deliverable documents. Amongst the factors to look out for are the critical success factors, nature of communications, identifiable risks indicators, challenges encountered amongst others.

5.3.3.3 Expanded Investigation of Factors Influencing Change Management at ANUL

Change management is multifaceted. Persuaded by empirical literature that suggests that change process significantly accounts for the success or failure of a change initiative, this study only focused on the change process. However, there is a need for accounting for the other factors that may have influenced the change management process. Consequently, I propose future studies not constrained in scope so as to establish the individual and collaborative influence of these factors and their inter-relationship. These may include, but limited to, organisational factors, stakeholders influence, the role of the sponsors, leadership style, communication strategies.

REFERENCES

Adebayo, O., Fagbohun, M., Esse, U., & Nwokeoma, N. (2019) Change Management in the Academic Library. *Digital Curation*, 19-40. doi: 10.4018/978-1-5225-6921-3.ch002

Adeyoyin, O.; Imam, A.; & Bello, T., (2012). Management of Change in the 21st Century Libraries and Information Centres. *Library Philosophy and Practice. 8(*2). Retrieved from http://digitalcommons.unl.edu/libphilprac/695

Adeyoyin, S.O. (2006). Managing the Library's Corporate Culture for Organizational Efficiency, Productivity, and Enhanced. Service. *Library Philosophy and Practice. 8*(2). Retrieved from http://www.webpages.uidaho.edu/~mbolin/adeyoyin.htm

Adolphus, M. (2019). Managing in a digital age. *Managing Your Library Viewpoints*.

Alhojailan, M. I. (2012). Thematic analysis: A critical review of its process and evaluation. *West East Journal of Social Sciences, 1*(1), 39-47.

Aljohani, M. R. (2016). Change Management. International *Journal of Scientific and Technology Research, 5*(5), 319-323.

Alvior, M. G. (2013).What are the Psychometric Properties of a Research Instrument? Retrieved on June 14th 2015 fromhttp://simplyeducate.me/2013/10/17/what-are-the-psychometric-properties-of-a-research-instrument/

American Library Association (1983). *The ALA Glossary of Library and Information Science*. Chicago: ALA.

Appelbaum, S. H., Habashy, S., Malo, Jean-Luc, &Shafiq, H. (2012). Back to the future: revisiting Kotter's 1996 change model. *Journal of Management Development, 31(*8), 764 – 782.

Baker, K. A. & Branch, K. M. (2002). Concepts Underlying Organizational Effectiveness: Trends in the Organization and Management Science Literature, In: *Management Benchmark Study*, Chapter 1, Office of Planning & Analysis, Department of Energy, USA, http://www.sc.doe.gov/sc-5/whatwedo/com-benchmark.html.

Berube, D. (2012).Management-of-change-vs-change-management. Retrieved on 23rd Nov 2014 from http://www.plantservices.com/articles/2012/10-management-of-change-vs-change-management/?start.

Boote, D. N., &Beile, P. (2005). Scholars before researchers: On the centrality of the dissertation literature review in research preparation. *Educational researcher, 34*(6), 3-15.

Borgman, C. L. (1997). From acting locally to thinking globally: a brief history of library automation. *The Library Quarterly, 67*(3), 215-249.

Bridges, K. (2003). *Expectations of librarians in the 21st century*. Libraries Unlimited.

Bryman A. & Bell E. (2015). *Business research methods*. USA: Oxford University Press

Burnes, B. (2004). Kurt Lewin and the planned approach to change: A re-appraisal. *Journal of Management Studies 41*(6), 977-1002. doi: 10.1111/j1467-6486.2004.00463.x

Cameron, K. S., & Quinn, R. E. (2005). *Diagnosing and changing organizational culture: Based on the competing values framework*. John Wiley & Sons.

Castiglione, J. (2007). Self-managing work teams and their external leadership. *Library Management, 28*(6/7), 379-393.

CBSE Class XII Modern Library and Information Services (n.d). Available at https://www.studiestoday.com/node/220701/viewfile.html

Chapman, A. (2013). Change management: organizational and personal change management, process, plans, change management and business development tips. Retrieved on 22nd September 2015 from http://www.businessballs.com/changemanagement.htm

Chisenga, J. (2006). *Information and communication technologies: opportunities and challenges for national and university libraries in eastern, central and southern Africa*. Paper presented at the Standing Conference of African National and University Libraries of Eastern, Central and Southern Africa,, Dares Salaam Tanzania,9 – 10 July 2006. Retrieved from http://eprints.rclis.org/9579/

Clarke, L. & Morris, A. (1998). Library system migration: A case study of change management. *Libri, 48*(3), 153–162. doi: 10.1515/libr.1998.48.3.153

Cohn, J. M., Kelsey, A. L., & Fiels, K. M. (1997). *Planning for Automation: A How-To-Do-It Manual for Librarians. Number 78*. Neal-Schuman Publishers, Inc., 100 Varick St., New York, NY 10013-1506.

Collins, T. (2012). The current budget environment and its impact on libraries, publishers and vendors. *Journal of library administration, 52*(1), 18-35.

Connell, J., & Burgess, J. (2006). The influence of precarious employment on career development: The current situation in Australia. *Education+ Training, 48*(7), 493-507.

CQUniversity Library (2016). What is literature review. Retrieved 15th October, 2016 from http://libguides.library.cqu.edu.au/litreview

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th Ed). California: Sage Publication.

Creswell, J. W. (2015). Revisiting mixed methods and advancing scientific practices. In Hesse-Biber S.N., Burke, R. & Johnson, R. (Eds.). *The Oxford handbook of multimethod and mixed methods research inquiry*. doi:10.1093/oxfordhb/9780199933624.001.000

Creswell, J. W., Plano C., Gutmann, V. L. M., & Hanson, W. (2003). Advanced mixed methods research designs.IN Tashakkori & C. Teddlie (Eds.). *Handbook of mixed methods in social and behavioral research* (pp. 209–240). Thousand Oaks, CA: Sage.

Culp, K., & Pilat, M. (1998). Converting qualitative feedback into quantifiable categories. *Journal of Extension, 36*(5). Retrieved from https://www.joe.org/joe//1998october/iw3.php

Darga, R., & Hu, S. (2012). A case study of changing management: how we radically evolved library processes from information technology impact. Retrieved from https://www.ifla.org/past-wlic/2012/150-darga-en.pdf

Delice, A. (2010). The Sampling Issues in Quantitative Research. *Educational Sciences: Theory and Practice, 10(*4), 2001-2018.

Dervitsiotis, K. (2003). The pursuit of sustainable business excellence: Guiding transformation for effective organizational change. *Total Quality Management and Business Excellence, 14*(3), 251-267.

Doerscher, T. (2011). Streamlining change at the speed of business. *The Journal for Quality and Participation, 33*(4), 21.

Dorner, D. G., Gorman, G. E., & Calvert, P. J. (2015). *Information needs analysis: principles and practice in information organizations*. London: Facet.

D'Ortenzio, C. (2012).*Understanding change and change management processes: a case study*. University of Canberra.

Drake, M. A. (2000). Technological innovation and organizational change revisited. *The Journal of academic librarianship, 26*(1), 53-59.

Düren, P. (2013). Leadership in libraries in times of change. *IFLA journal, 39*(2), 134-139.

Firestone, W. A. (1993). Alternative arguments for generalizing from data as applied to qualitative research. *Educational researcher, 22*(4), 16-23.

Frary, R. (2002). Test scoring: A brief guide to questionnaire development. *Test Scoring Services: Questionnaires*.. Retrieved on 26th April 2015 from http://ericae.net/ft/tamu/vpiques3.htm

Gichohi, P. M. (2015). The Strategic Management Practices in Academic Libraries in Kenya: The Case of USIU Library. *Library Philosophy and Practice*, 1, 1-17.

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: interviews and focus groups. *British dental journal, 204*(6), 291-295.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report, 8*(4), 597-606.

Guy, G. R., Beaman, K. V., & Weinstein, C. (2005). *Effecting change in business enterprises: Current trends in change managemen*t. New York: The Conference Board Inc.

Hailey, V. H., & Balogun, J. (2002). Devising context sensitive approaches to change: the example of Glaxo Wellcome. *Long Range Planning, 35*(2), 153-178.

Hamilton, M. J. (1995). The Great Migration: Second Generation Acquisition and Library Management Systems. *The Acquisitions Librarian, 7*(13-14), 5-33.p

Harper, G. R., & Utley, D. R. (2001). Organizational culture and successful information technology implementation. *Engineering Management Journal, 13*(2), 11-15.

Heerwagen, J., Kelly, K., & Kampschroer, K. (2016). *The Changing Nature of Organisations, Work, and Workplace*. Retrieved 18th June 2016 from https://www.wbdg.org/resources/changing-nature-organizations-work-and-workplace

Hilb, M., & Dubs, R. (n.d). Organizational Change: Formulating, Implementing, and Sustaining a Fundamental Organizational Change in South American Central Banks Pilot Study Colombia. Retrieved from http://www1.unisg.ch/www/edis.nsf/SysLkpByIdentifier/2766/$FILE/dis2766.pdf

Housewright, R. (2009). Themes of change in corporate libraries: considerations for academic libraries. Portal: *Libraries and the Academy, 9*(2), 253-271.

Hussey, J. & Hussey, R. (1997). *Business research. A practical guide to undergraduate and postgraduate students*. Houndsmills: Macmillian

Israel, G.D. (1992). Determining sample size. Gainesville: University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences, EDIS

Jantz, R. C. (2012a). Innovation in academic libraries: An analysis of university librarians' perspectives. *Library & Information Science Research, 34*(1), 3-12

Jantz, R. C. (2012b). A framework for studying organizational innovation in research libraries. *College & Research Libraries, 73*(6), 525-541.

Jick, T. (1993). *Managing change: Cases and concepts*. Richard d Irwin.

Jick, T. D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative science quarterly, 24*(4), 602-611.

Johnson, Spencer. (1998). *Who moved my cheese? An amazing way to deal with change in work and in your life*. GP Putnam's Sons, New York.

Johnstone, D & Peeraji, J.V. (2014). *Quality Improvements and Change Management in the British Nuclear Industry: A Case Study*, Lunds University, Degree Project.

Kamila, K. (2009). Managerial Change for the Survival of Library and Information Centres in Information and Communication Technology Era. *ICAL 2009-CHANGE MANAGEMENT*.

Kamila, K. (2009). Managerial Change for the Survival of Library and Information Centres in Information and Communication Technology Era. *ICAL*.

Kanji, G., & Moura e S. P. (2003). Sustaining healthcare excellence through performance measurement. *Total Quality Management and Business Excellence*, *14*(3), 269-289.

Kanter, R.M. (1992). *The change masters: Corporate entrepreneurs at work*. London: Cengage Learning EMEA.

Kaplan financial knowledge bank. Business strategy: Strategy into action. Retrieved 26th June 2014 from http://kfknowledgebank.kaplan.co.uk/KFKB/Wiki%20Pages/Managing%20strategic%20change.aspx

Key, P.J. (1997). Research design in occupational education: Reliability and validity. Retrieved 27th June 2015 from https://www.okstate.edu/ag/agedcm4h/academic/aged5980a/5980/newpage18.htm

Khan, M. (2015). Change Management in Academic Libraries: An Experience. *Asian Journal of Multidisciplinary Studies*, *3*(5), 174-179.

Klein, D. B. (2011). *Knowledge and coordination: a liberal interpretation*. Oxford University Press.

Kophuting, T., & Mutshewa, A. (2017). Analyzing Critical Incidents Stories to Understand Change Management Process in the Adoption of e-Resources at the University of Botswana Library. *International Information & Library Review*, *49*(4), 249-265. doi: 10.1080/10572317.2017.1301236

Kothari, C. (2004). *Research Methodology: Methods and Techniques* (2nd rev. ed.). New Delhi: New Age International Publishers.

Kotter International (2014) The 8-Step Process for Accelerating Change eBook. Retrieved 26th April, 2015 fromhttp://go.kotterinternational.com/8-Steps-Process-Accelerating-Change-eBook/

Kotter, J. R. (2007). Leading change-Why transformation efforts fail. *Harvard business review*, *85*(1), 1-9. Retrieved 19th August, 2015 from https://cb.hbsp.harvard.edu/resources/marketing/docs/95204f2.pdf

LIS.BD.NETWORK, (n.d). ICT: Concepts and meaning-definition. Retrieved 22nd February 2015 from http://www.lisbdnet.com/ict-concepts-and-meaning-definition/

Lynch, C. (2000). From automation to transformation: Forty years of libraries and information technology in higher education.[enlínea]. 2000. [Consulta: 23 de Junio de 2010] Disponibleen Internet: http://net. educause. edu/apps/er/erm00/pp060068. pdf M. REITZ, Joan."Library automation". *On-line dictionary of library and information science*.

Malhan, I. V. (2006). Developing corporate culture in the Indian university libraries: Problems and challenges of change management. *Library management, 27*(6/7), 486-493.

Manjunatha, K., & Shivalingaiah, D. (2003). Information access in libraries. *Annals of Library and Information studies, 50*(2), 85-90.

McMillan, E. (2004). *Complexity, organizations and change*. Routledge, London: Routledge Taylor & Francis Group.

Mento, A., Jones, R., & Dirndorfer, W. (2002). A change management process: Grounded in both theory and practice. *Journal of Change Management, 3*(1), 45-59.

Metre, C. (2009). *Deriving Value from Change Management* (Doctoral dissertation, University of Pennsylvania). Retrieved 16th March 2014 from http://repository.upenn.edu/od_theses_msod/28/

Morgan, D. L. (1998). Practical strategies for combining qualitative and quantitative methods: Applications to health research. *Qualitative health research, 8*(3), 362-376.

Morse, J. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, (40) 120–123.

Munassar, F., Ghanim, A., &Dahlan, A. R. A. (2013). Change management and its contribution to the success of IT project implementation. International *Journal of Information and Communication Technology Research, 3*(4), 134-140.

Nadler, D. A., & Tushman, M. L. (1995). Types of organizational change: From incremental improvement to discontinuous transformation. *Discontinuous change: Leading organizational transformation*, 15-34.

Nicholas, D., Rowlands, I., Jubb, M., & Jamali, H. R. (2010). The impact of the economic downturn on libraries: With special reference to university libraries. *The Journal of Academic Librarianship, 36*(5), 376-382.

Nickols, F. (2000). Change Management 101 a Primer. Retrieved 21st November, 2016 from http://www.nickols.us/change.htm

Nickols, F. (2004). Change management 101: A primer. Retrieved from http://home.att.net/~nickols/change.html

Nickols, F. (2016). Four Strategies for Managing Change. Retrieved 26th November, 2016 from www.nickols.us/four_strategies.pdf

Nkagisang M.G. (2007). *The impact of impala platinum's corporate social responsibility in the Rustenburg are*a. (Doctoral thesis, School for Human Resources Sciences at the North West University (Potch Campus). Retrieved 17th June 2014 from file:///C:/Users/doc%20odero/Downloads/nkagisang_monyaneg(1).pdf

Normandin, B. (2012). Three types of change management Models. Retrieved 16th March, 2015 from http://www.quickbase.com/blog/three-types-of-change-management-models

Nozero, V. A., & Vaughan, J. (2000). Utilization of process improvement to manage change in an academic library. *The journal of academic librarianship, 26*(6), 416-421.

O'Donnell, O., & Boyle, R. (2003). Understanding and managing organisational culture. Retrieved 26th July, 2015 from https://www.ipa.ie/pdf/cpmr/CPMR_DP_40_Understanding_Managing_Org_Culture.pdf

Onwuegbuzie, A. J., & Collins, K. M. (2007). A typology of mixed methods sampling designs in social science research. *The qualitative report, 12*(2), 281-316.

Onwuegbuzie, A. J., & Combs, J. P. (2011). Data analysis in mixed research: A primer. *International Journal of Education, 3*(1), 13.

Organizational Change Management Readiness Guide. (n.d.). Retrieved 27th April, 2015 from http://www.cio.ca.gov/opd/pdf/itla/21/OCM-FISCal-Readiness-Guide.pdf

Passenheim, O. (2010). Change management. Bookboon.

Paton, R. A., & McCalman, J. (2008). *Change management: A guide to effective implementation*. New Delhi: Sage.

Peña-López, I. (2001). Creating a Development Dynamic: Final Report of the Digital Opportunity Initiative. Retrieved 16th January, 2017 from http://www.optinit.org/framework

Pickard, A., & Dixon, P. (2004). The applicability of constructivist user studies: How can constructivist inquiry inform service providers and systems designers? *Information research, 9*(3).

Prosci (2007). Prosci change management methodology overview. Retrieved 23rd March, 2016 from www.**change-management**.com/**Prosci-Methodology**-Overview.pdf

Prosci (2012). The why and how of a change management strategy. Retrieved on 12th June 2015 from https://www.prosci.com/change-management/thought-leadership-library/change-management-strategy

Prosci (2013).Change management ROI calculations guide. Retrieved on 12th June 2015 from https://www.prosci.com/change-management/thought-leadership-library/roi-of-change-management

Prosci (2014).Executive sponsor's importance and role. Retrieved on 12th June 2015 from https://www.prosci.com/change-management/thought-leadership-library/importance-and-role-of-executive-sponsor

Prosci (2016). Best practices in change management. Retrieved on 31st July 2016 from https://www.prosci.com/best-practices-in-change-management-2016-edition.html

Pryor, M. G., Taneja, S., Humphreys, J., Anderson, D., & Singleton, L. (2008). Challenges facing change management theories and research. *Delhi Business Review, 9*(1), 1-8.

Pugh, L. (2016). *Change management in information services*. Routledge: Taylor & Francis.

Rajasekar, S., Philominathan, P., & Chinnathambi, V. (2006). Research methodology. arXiv preprint physics/0601009. Retrieved https://arxiv.org/pdf/physics/0601009.pdf

Reitz, J. M. (2014). ODLIS: Online dictionary for library and information science. Retrieved May 25, 2015, from http://www.abc-clio.com/ODLIS/odlis_A.aspx

Rick, T. (2011). 12 reasons why people resist change. Retrieved on 16th June, 2015 from https://www.torbenrick.eu/blog/change-management/12-reasons-why-people-resist-change/

Robbins, S.P. (1990). *Organisational theory: Structure, design, and application*. Englewood Cliffs, NJ: Prentice Hall.

Roberts, S. A. (2003). Financial management of libraries: Past trends and future prospects. *Library Trends, 51*(3), 462.

Rockford Consulting group (1999). Managing Change. Retrieved 26th August 2015 from http://rockfordconsulting.com/change.htm

Ruteyan, J. O. (2006). Proceedings of the 24th Annual Seminar/Workshop of the Nigerian Library Association, Cataloguing, Classification, and Indexing Section. *Library Philosophy and Practice, 8*(2), 16

Salkind, N. J. (Ed.). (2010). *Encyclopedia of research design (Vol. 1*). London: Sage.

Sarayreh, B. H., Khudair, H., &Barakat, E. A. (2013). Comparative study: The Kurt Lewin of change management. *International Journal of Computer and Information Technology, 2(*4), 626-629.

Sardella, D. (2014). Change acceleration process from GE. Retrieved 15th November 2015 fromwww.tparents.org/Library/Unification/Talks/.../Sardella-141003.pdf

Sauro. J. (2012). 5 Examples of quantifying qualitative data. Retrieved on 16th June 2015 from http://www.measuringu.com/blog/quantify-qualitative.php

Schein, E. H. (1985). *Organizational culture and leadership: A dynamic view*. San Francisco: Jossey-Bass.

Shan, S., & Shaheen, M. A. (2013). Change management in the information age: approaches of academic library administrators in Pakistani Universities' Libraries. Library Philosophy and Practice (e-journal) Retrieved 14th June, 2016 http://digitalcommons.unl.edu/libphilprac/1037/

Shapiro, G.M (2008). Sample design IN Lavrakas, P.J (Ed) *Encyclopedia of survey research methods* AM (Vol.1). Sage: Singapore. doi: 10.4135/9781412963947

Shepherd, M.C. (2000). Strategies for Working with Library Staff Members in Embracing Change caused by Library Automation. *Proceedings of the IATUL Conferences 2002*. Retrieved from http://docs.lib.purdue.edu/iatul/2000/papers/22/

Singh, Y.K. & Bajpai, R. B. (2008). Research Methodology data presentation. New Delhi: APH Publishing.

Singha, K. (2017). Change Management in New Age Libraries: A Case Study of Central Library, Nit Silchar (pp. 167-179). Guwahati: MRB Publishers.

Soehner, C. B. (2014). Change Management in Libraries: An Essential Competency for Leadership. Proceedings of the IATUL Conferences. Paper 14. Retrieved from http://docs.lib.purdue.edu/iatul/2014/plenaries/14/

Sounders, M., Lewis P., & Thornhill, A. (2012). *Research methods for business students*. London: Pearson Education.

Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

Sunday, C.E. (2013). The role of theory in research. Retrieved 21st April 2014 from https://www.uwc.ac.za/Students/Postgraduate/Documents/The%20role%20of%20theory%20in%20research.pdf.

Tam Tim-kui, P. (1993). The Role of quantification in qualitative research in education, *Educational Research Journal*, (8), 19-27.

Tam, L. W., & Robertson, A. C. (2002). Managing change: Libraries and information services in the digital age. *Library Management, 23*(8/9), 369-377.

Tangient LLC (2016). Kotter's 8-step model. Retrieved 9th August 2016 from http://tie575changemodel.wikispaces.com/Kotter%27s+8-step+model

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.

Tebbetts, D. (2002.). Your next system: Planning for migration. Retrieved 12th June 2016 from http://web.simmons.edu/~chen/nit/NIT'92/335-teb.htm 21/8/2013

Tichy, N.M. (1983). *Managing strategic change: Technical, political, and cultural dynamics*. New York: John Wiley.

Troll, D. (2002). How and why libraries are changing: What we know and what we need to know. *Libraries and the Academy, 2*(1), 99-123.

Venkateswaran, D. (2014). A critique of kotter's 8 step model for leading change – part 1. Retrieved 23rd June 2015 from https://dineshvenk.wordpress.com/2014/05/19/kotter-critique-part-1/

Walls, I. (2011). Migrating from Innovative Interfaces' Millennium to Koha: The NYU Health Sciences Libraries' experiences. *Oclc Systems & Services: International Digital Library Perspectives*, *27*(1), 51-56. Doi: Org/10.1108/10650751111106564.

Ward, T. (2010). Quantifying qualitative data. Retrieved 9th December 2010 from http://www.uniteforsight.org/global-health-university/quantify-research

Weiner, S. (2003). Resistance to change in libraries: Application of communication theories portal: *Libraries and the Academy*, *3*(1), 69–78.

William M.K. (2004/). The qualitative-quantitative debate. Retrieved from http://quali-quant.com/news.phphttp://documentslide.com/documents/trochim-2006-the-qualitative-quantitative-debate.html

Wood, P. & Walther, H. (2000). The future of academic libraries: Changing formats and changing delivery. *The Bottom Line: Managing Library Finances*, *13*(4), 173-181. Available at http://www.emerald-library.com

Yi, Z. (2013). Change in the information age. *Library Management*, *34*(1/2), 5-19.

Yin, R. K. (2003). *Case study research: Design and methods*. Sage publications.

Yin, R.K. (1994). *Case study Research: Design and methods*. Sage: publications.

Youngman, D. (2008). Library Staffing Considerations in the Age of Technology: Basic Elements for Managing Change. *Issues in Science And Technology Librarianship*.

APPENDICES

APPENDIX I : PERMISSION TO CONDUCT RESEARCH

Caroline Gicuku Nyaga

P.O. Box 4845-00506,

Nairobi.

10/09/2011

To.

The Vice-Chancellor,

Thru.

The University Librarian,
Africa Nazarene University,

P.O. Box 53067-00200

Nairobi

Dear Madam.

RE: Permission to Conduct Research Study

I am writing to request permission to conduct a research study at your institution. I am currently enrolled in the Masters of Philosophy Program, School of Information Science at Moi University and am in the process of writing my Master's Thesis. The study is entitled; **Managing Change in A Digital Environment: A Study of Africa Nazarene University.**

The research results will be pooled for the thesis project and individual results of this study will remain absolutely confidential.

Upon completion of the study, I will provide the University library with a bound copy of the full research report. Should this study be published, only pooled results will be documented.

Your approval to conduct this study will be greatly appreciated.

Sincerely,

Caroline Nyaga

APPENDIX II : INTERVIEW SCHEDULE FOR UNIVERSITY LIBRARIAN, HEAD OF SECTIONS AND SYSTEM LIBRARIAN

AFRICAN NAZARENE UNIVERSITY LIBRARY

CHANGE MANAGEMENT STRATEGY

FRAMEWORK

PROJECT DETAILS

Project Name: ----------

Business unit:----------

Project Endorsement:

Destination	Name	Signature	Date
Project Manager:	……	……	……
Project Sponsor	……	……	……
Key Stakeholders			
Portfolio Manager	……	……	……
Finance Manager	……	……	……
ICT Director	……	……	……

TYPE OF CHANGE

A. Form of change anticipated

- Form of change [Process change, Policy change, System change, Job change]
- Scale of change [Large or small]
- Speed of change [fast or slow]
- System change

Others ----------

B. Reason for the change e.g.

- Operational cost reduction
- Advances in technology
- Improved service delivery
- Globalisation
- Marketing strategy
- Heightened competition

Others ----------

C. Scope of change (who and how far reaching will the effect be)

- Work groups
- Business units
- Departments
- Systems

Others ----------

D. Situational analysis

- Current status of the library
- The problem
- Root cause of the problem
- Context and challenges surrounding proposed initiative

E. Future projection including brief description on:

- What is the anticipated future state?
- What it will look like?
- What will be done differently?
- What will be improved?
- What are the anticipated paradigm shifts? –
- What mind shifts do you expect of the people to be affected?

CHANGE SPECIFICATION

A. Change Tactic
   - Rational - Is there need for new organisational structure, new systems, and new process?
   - Non-rational - what relationships, culture, and knowledge sharing will change?

B. Process Change
   - Will the change will represent a new process or different application of the existing process?
   - What are the significant changes to processes?
   - What is to be done differently and how?

C. People Change
   - What roles within the library are likely to be affected and how?
   - What pre-requisite knowledge or training is required?
   - What work practices will be affected?
   - What new relationships, and work groups are required?
   - What new behavioural areas are required?

D. Communication methods
   - What channels of communication are used to share information with the different stakeholders groups?
   - Which kind of information is to be shared and how frequently?
   - What processes are in place to manage the knowledge about the change?

E. Cost analysis
   - What is the estimated cost for change initiative activities?
   - What is the source of funds?
   - What are the sponsors, management and stakeholders negotiated arrangement

RISK ASSESSMENT

Assessment of both the actual and the unintended consequences from conception of the change to its implementation including:

- Risks that may occur upfront, during and after implementation, and
- The significances and contingency plan put in place.

RISK ASSESSEMENT AND PLANNING

OCCURRENCE IN THE MIGRATION PROCESS	LIKELI-HOOD	CONSEQUENCES					MITIGATION ACTION
		Insignificant-	Minor	Moderate	Major	Catastrophic-hic	
Upfront During After	Almost certain						
Upfront During After	Likely						
Upfront During After	Possible						
Upfront During After	Unlikely						
Upfront During After	Rare						

Stakeholder Assessment

Identification of the categories of stakeholders and their level of participation aimed at establishing each stakeholder's needs, expectations, possible reaction to the change process, and potential areas of engagement in the change process and appropriate methods of buying their support.

STAKEHOLDERS' DESCRIPTION		
Level of Participation	**Category Individual or group**	**Description**
Driving		These are directly affected by the change, have some form of responsibilities for the change process and are expected to lead the implementation of the modification either at actual point of change or at a strategic level.
Advocate		These are directly affected by the change, have some form of responsibilities for the change process and are expected to facilitate the change process through support, encouragement and influencing others
Active participation		These are directly affected by the change and are expected to alter some aspects of their daily role and work activities
Willingness		These are not directly affected by the change but are expected to provide some assistance in the change process
Understanding		These are not directly affected by the change but are expected to have some basic awareness for the change

Resistance To Change Assessment and Plan
Proactive assessment of potential reasons for resistance to change, their root causes, persons and units affected and mitigating strategy.

RESISTANCE ASSESSMENT TEMPLATE			
POTENTIAL STATUS LEADING TO CHANGE RESISTANCE	**POTENTIAL ROOT CAUSE**	**GROUPS/ PERSONS AFFECTED**	**MITIGATION ACTION**
Inadequate understanding of the purpose-drivers for the change	▪ Low stakeholders involvement ▪ Poor communication ▪ Lack of a needs assessment		▪ Stakeholder analysis and engagement ▪ Communication strategy
Apprehension feelings	▪ Low stakeholders involvement ▪ Poor communication strategy ▪ Inadequate training		▪ Stakeholder analysis and engagement ▪ Communication strategy ▪ Structured training
Inadequate management support	▪ Poor communication ▪ Low advocacy		▪ Communication strategy ▪ Appointing project & project team
Inadequate knowledge and skills	▪ Inadequate or unstructured training ▪ Poor monitoring of change progress ▪ Poor communication		▪ Adopting a communication strategy ▪ Periodic needs & gaps assessment ▪ Structured training
Disruption in business operations	▪ Inadequate planning ▪ Inadequate supporting infrastructure ▪ Inadequate training		▪ Present status assessment ▪ Change assessment ▪ Structured training
Adverse changes in roles and business operations	▪ Radical changes ▪ Inadequate training		▪ Incremental implementation – phase to phase ▪ Structured training

ORGANISATIONAL CHANGE MANAGEMENT READINESS

A. Communication

- Are there clearly defined vision and strategy of continually communicating with all stakeholders?
- Are priorities and mechanism of continually communicating change projects and other competing initiatives set
- Are there multiple methods of communicating decisions and progress of change available
- Do the forms and channels of communication to the various groups of stakeholders meet their preferences
- Is there a system of regulating the content of the messages to ensure that they are clear, concise and consistent?
- Are there mechanisms were put in place to identify lapses in effective communication.

B. Sponsorship

- Has an executive sponsor been identified for each project
- Does the executive sponsor have the necessary authority over the people, processes and systems to authorize and fund change initiatives.
- Are their mechanisms of ensuring that the executive sponsor actively and visibly participates with the project team throughout the entire change process?
- Are there mechanisms of ensuring that the executive sponsor is involved in resolving issues and making decisions relating to the proposed initiative, change schedule, scope and resources?
- Are institutional managers involved and supportive of the change
- Has a sponsor coalition describing the leaders and managers who need to be onboard and actively engaged in leading the change been identified?

C. Training

- Have the skills and knowledge needed for transition been identified?
- Are there mechanisms for continually conducting skills assessment for change projects?
- Have the training been developed and scheduled proactively, based on gaps and need assessments.
- Are there flexible methods and schedule for conducting the training?
- Are their sufficient resources (hardware, software, human resource, training rooms) identified and allocated for the training?

D. Infrastructure and Resource Requirements

- Has change management team members been identified and trained on change management?
- Have resources for the new initiative, including hardware and software, been identified and acquired?
- Are there sufficient resources required to complete the change process successfully and in time?
- Have the other support units been notified of the change and their expected roles?
- Have stakeholder's roles in the change process been identified and communicated?
- Have the change initiatives been accurately tailored to the particular needs and concerns of each stakeholder group?
- Have the various stakeholders been identified?
- Are the stakeholders' needs, expectations been identified?
- Are there special tactics developed for handling resistance to change?

IMPLEMENTATION STRATEGIES

For a smooth transition to occur, there need to be a number of plans that can serve as guide to the change process. This includes an action plan, a schedule for the activities, a communication plan and a training plan.

A. ACTION PLAN

Activity	Action	Responsible person	Timeframe
IT Activities			
Project Team activities			
Communication Activities			
Training Activities			
Monitoring and evaluation activities			

B. ACTIVITIES SCHEDULE

Task	Duration	Start Date	End Date	Resources

C. COMMUNICATION PLAN	
Sender	Person/group responsible for sending the message Justification for sending the message
Recipient	Target audience Their needs, preferences, special interests Preferred format and channel of communication Need for tailoring the message to specific audience Potential reaction to sent message
Purpose of the communication	What is to be achieved by the communication Expected action to be taken by the audience
Risk	Worst thing that may happen if you communicate the message Worst thing to happen if you do not communicate the message What are the chances of the communication being misinterpreted and how? How can you minimize the misinterpretation
Activities	What method and medium would you use to communicate the message What communication networks would you use
Key messages	What are the essentials of the message What is the most positive and negative interpretation and response it may receive
others	Availability of required resources How do you gain sponsor-buy in to the communication Message censorship, controls Reactions to positive and negative feedbacks mechanisms

COMMUNICATION PLAN

Sender	Recipient	Key messages	Delivery Method	Location	Date
Sponsor	Library management	Hardware acquisition	Vendor supply	Technical department	July 2014

D. TRAINING PLAN

To obtain structured training, the following training requirements should be considered:

- Establishment of the level of skills and knowledge required by specific individual and groups
- Establishment of the current gap in the required skills and knowledge
- Training strategies to be adopted
- Training program requirement
- Source of funding and resources for the training
- Time schedule for the training
- Method of delivery

TRAINING PLANTEMPLATE

Session modules	Learning objectives	Learning outcomes	Training duration	Target audience	Delivery mode	Facilitator

CHANGE INSTITUTIONALIZATION

Successful change management results in complete change in behaviours or practices. Change disturbs the framework by which people make sense of their daily lives and work activities. Institutionalization seeks to stabilize the group adoption of the new norms in order to ensure that the new behaviors are relatively safe from regression. To achieve this requires persistent reinforcement of the new change either by persuasion or coerce.

CHANGE PROCESS REVIEW

The objective of this last phase is to assess the

- The extent to which the objective of the change objectives have been met
- Assess the final deliverables produced
- Reviewing the project against schedule
- Comparing the expenditure against budget
- Identifying the key project achievements and milestones
- Documenting any lessons learned for future projects
- Communicating its success to stakeholders

CHANGE PROCESS REVIEW TEMPLATE

Change Required	Business Unit	Changes Made	Resources Used

Description of the benefits/milestones accrued from the change

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Description of challenges experienced in the course of the change process

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Description of critical success factors and lessons learnt

APPENDIX III: INTERVIEW SCHEDULE FOR UNIVERSITY LIBRARIAN, HEAD OF SECTIONS AND SYSTEM LIBRARIAN

1. Why did the library move from manual system to an automated system?

2. How was the transition from manual to automated systems carried out?

   - Please comment on what activities were executed in each of the this phases

     - Analyze the organizational need for change
     - Separate from the past
     - Support a strong leader role
     - Craft an implementation plan
     - Communicate, involve people and be honest
     - Create a shared vision and common direction
     - Create a sense of urgency
     - Line up political sponsorship
     - Develop enabling structures
     - Reinforce and institutionalize the change

   - How were you and other stakeholders involved in the change process?
   - Has the library put in place any human, legal and infrastructural capacity to enable the system migration? If there any please state them.
   - Does the library have any policy guideline concerning the transition?

3. Did you face any problems during the transition? What are some of the issues/factors that derailed the migration process?
4. Are there any measures or procedures that the library has put in place to help the staff manage changes that have emerged due to the transition from manual system to an automated system?
5. Please take some time to assess the change management maturity level of the library using Prosci's (2016) organisational change management readiness assessment tool.

Communication Informing who is affected and impacted regarding the change. **ITEMS**	1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree					
	1	**2**	**3**	**4**	**5**	**6**
1 The library had a clearly defined vision and strategy and changes are continually communicated with all stakeholders.						
2 Priorities were set and continually communicated regarding change projects and other competing initiatives						
3 The library used multiple communication methods to keep stakeholders informed						
4 The library's messaging about new system was clear, concise and consistent.						
5 Mechanisms were put in place to identify lapses in effective communication.						

Sponsorship: Ensuring there is active Sponsorship for the change at a senior management level and engaging this sponsorship to achieve the desired **ITEMS**	1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree					
	1	**2**	**3**	**4**	**5**	**6**
▪ Change initiatives in the library had an executive sponsor identified. ▪ The executive sponsor had the necessary authority over the people, processes and systems to authorize and fund change initiatives.						
▪ The executive sponsor built awareness of the need for change (why the change is happening).						
▪ The executive sponsor actively and visibly participated with the new system team throughout the entire change process.						
▪ The executive sponsor resolved issues and made decisions relating to the library system change schedule, scope and resources.						

Stakeholder Management -Gaining buy-in for the changes from those involved and affected, directly or indirectly. Involving the right people in the design and implementation of changes, to make sure the right changes are made	1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree					
ITEMS	**1**	**2**	**3**	**4**	**5**	**6**
▪ The executive sponsor was willing and able to build a sponsorship coalition for change, and was able to manage resistance from all stakeholders.						
▪ Change was managed effectively and change successes were celebrated, both in private and in public.						
▪ Stakeholders heard a consistent and unified message from various levels of executives						
▪ Change initiatives were accurately tailored to the particular needs and concerns of each stakeholder group.						
▪ Special tactics were developed for handling resistance to change from various stakeholders.						

Readiness- Getting people ready to adapt to the changes by ensuring they have the right information and tool sets.	1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree					
ITEM	**1**	**2**	**3**	**4**	**5**	**6**
▪ A structured change management approach was communicated and applied to change process.						
▪ Change management team members were identified. Managers and staff were trained on change management.						
▪ Project team and change management teams tracked progress and were able to resolve related issues through set project management processes. A project plan had been integrated with a change management plan.						
▪ Resources for change projects were identified and acquired based on a project plan. Resources had the necessary time to complete the work for the change.						
▪ Feedback processes were continually used to determine how effectively change was being adopted by stakeholders.						

Training Training the appropriate resources on the change. **ITEMS**	1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree **1**	**2**	**3**	**4**	**5**	**6**
▪ Library recognizes and reinforced skills and behaviors required for the change effort.						
▪ Skills and knowledge needed for transition were identified.						
▪ Skills assessments were continually conducted for change projects and gaps were identified for transition.						
▪ Training was developed and scheduled proactively, based on gaps and need assessments.						
▪ Flexible methods were employed for training						

APPENDIX IV: QUESTIONNAIRES FOR ANU LIBRARY USERS [FACULTY AND STUDENTS]

I'm a student at Moi University pursuing a Post–graduate degree in Master of Philosophy (In Library and Information Studies). I'm doing research on 'An Audit of Change Management Process in Library Systems Migration at Africa Nazarene University Library (ANUL), for my thesis. I'm requesting you to answer the questions below which will assist me in collecting the data needed for my research. All information provided will be treated with total confidence.

Department ----------

1. Time period at ANU

Students

a) First Year ☐
b) Second Year ☐
c) Third Year ☐
d) Fourth Year ☐

Faculty members

a) Below 5 years ☐
b) 5-9 years ☐
c) 10-14 years ☐

2. Have you been trained in the use of the library automated system?

a) Yes ☐ b) No ☐

3. How did you find out about the automated functions

a) Library Webpage ☐ b) Informed by library staff ☐
c) Library Orientation ☐ d) Fellow colleague/student ☐

Any other (please Indicate) ----------

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4. Do you prefer the automated system to the manual system?

a) Yes b) No ☐

If no please give your reasons----------

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5. What is your view of the automated system? ----------

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6. What is your general view of the library in relation to automation? ----------
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7. Were there any problems you experienced during the transition?

a) Yes ☐ b) ☐

If yes please explain ----------

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8. How has the automated system assisted you in the use of library services and functions?----------
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9. How has the transition from the manual system to automated system affected your use of the library? ----------

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10. What would you like done in future in any change initiative?----------

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THANK YOU VERY MUCH