In order to understand the general problems and their context, it is necessary to review the literature in the proposed research. Review of literature including management case studies, impact of technology on libraries and librarians role thereof can be seen as a good source for understanding the challenges emerging due to technological changes in a systematic manner. Library professionals have to enhance their skill and professional capabilities for coping with a fast and ever changing ICT environment. It is crucial for future survival of both library and library professionals. The following studies are reviewed to understand change and its management in libraries and information centers.

3.1 Change Management

Pandya and Pandya (2010) in their paper entitled “The Contemporary Changes in the Current Scenario: Change Management in the Libraries and Information Centres” discusses the tools and challenges of change management in the libraries to facilitate their expansion, resources management and service performance. Information services have always been under constant pressure to prove the value of their staff, services and existence to management. The key to success lies in the ability to predict, manage, and exploit change in all areas of work, with change management emerging as a key extended skill which must be added to any information professional’s repertoire. Despite the tendency for information technology, finance and marketing departments to dominate boardroom thinking, the library and information sector still has the opportunity to take control of organizational information strategies, coordinate and drive the technologies and promote library use and benefits. The paper provides useful comprehensive tools to change the traditional libraries. The W4 tool (i.e. why, where, what and who of change) will allow library professionals to determine informally the degree to which their organizational culture is either transformational or transactional in nature.

Prosci and the Change Management Learning Center (2010) in their tutorial entitled “Launching Enterprise Change Management: Building organizational change management capability and competency” explains that with the number and frequency of changes continuing to go up, the capability and competency to manage the people side of change will be crucial in coming years. Leading organizations have made the decision to build change management capability and competency - to deploy change management more broadly across the enterprise. This tutorial looks at how organizations are initiating change management deployment efforts.
Hills (2009) in the article “How to Successfully Change: The Do’s and Don’ts of Change in a Large Company” mentions that Change is a challenge every organization will encounter in its life as a business. If the company does not react to the need to change successfully, they will never survive. Currently, a new joint venture, CLO Inc (a joint venture between Newmont and Silver to create a single rocket-launching program), is undergoing a great deal of change. An analysis was done of what research has been conducted on change, focusing on case studies of changes in other companies, and what was done successfully and unsuccessfully. It was found that companies, who successfully change build trust in the company, create short-term goals, have clear and effective communication, and get the buy-in of employees in the company. In order for CLO to survive the changes involved in the joint-venture, they must put these ideas to work.

“Prosci’s 2009 edition of Best Practices in Change Management” is a benchmarking report that helps to optimize change management approach to achieve business results on change projects with real-world research. With data from more than 570 project leaders and change management practitioners representing organizations from 65 countries, one can learn what is working and what is not working in the field of change management (Prosci, 2009).

Murphy (2009) in the paper, “Leveraging Lean Six Sigma to Culture, Nurture, and Sustain Assessment and Change in the Academic Library Environment” explores the application of Lean Six Sigma, a business improvement philosophy and methodology, in the academic library environment as one means to nurture and sustain a culture of assessment and change. It includes an overview of the philosophy and an example of an actual virtual reference improvement project that was conducted using Lean Six Sigma tools and principles at The Ohio State University Libraries. It concludes with a discussion of the benefits and limitations of deploying a Lean Six Sigma initiative within a library organization.

Brown (2009) in the study, “The Influences of Organizational Change Upon Independent Contractors” states that a company should treat independent contractors the same as employees, when faced with an organizational change. By interviewing eight independent contractors this study attempts to answer that question. John Kotter’s book Leading Change was used as a model of the organizational change process and has been utilized to compare the change by a Taxi company and its independent contractors. This change process from the contractors’ view appears to be similar to an employee based change and provides ways that the company could have completed the change in a more effective manner. Yet, from the company’s perspective the
change was done appropriately and allows the company to continue moving to be the new model for taxi companies in the United States.

Hammoud (2008) in the PhD Theses entitled “Assessing project success: Comparing integrated change management and change management” says managers achieve their long-term business goals or objectives through strategies. They undertake projects to realize these strategies. However, in global businesses, only 2.5% of projects fully succeed. Researchers found empirical evidence that the high failure rate of projects is because managers are not implementing projects that align with the business strategy. Others emphasized the role of change as a key to the survival of the organizations. Many others emphasized the important role of change management as a key to project success. However, none has studied the relationship between change management process or integrated change management process and project success. Furthermore, no known research has been conducted to test if project success in organizations who implement integrated change management process exceeds project success in organizations who implement change management process. The researcher focused on these aspects in the research. The researcher found two reliable, linear, and positive correlations between project success and change management process from one hand and project success and integrated change management process from the other. The research findings also confirmed the hypothesis that organizations who implemented integrated change management process achieved higher project success rates as measured by adherence to project scope, project time, project cost and stakeholders' satisfaction than those who implemented a traditional change management process.

Frahm and Brown (2007) in their paper “First steps: linking change communication to change receptivity” recognised change receptivity as an important factor in successfully implementing organizational change strategies. It examines the process of change in the initial stages of a change agenda within a public sector organization and analyzes the communication of change. It traces the resultant receptivity to organizational change. The paper investigates whether organizational change communication is a crucial element in employees' receptivity to change. A case study design is employed and the multiple methods employed include surveys, focus groups, archival data and participant observation. The findings indicate that the initial change communication is problematic. The employees respond to a lack of instrumental change communication with a constructivist communication approach in order to manage the implications of continuous change. This research provides an overview of the first 100 days of change in a public sector organization only, and so the limitations of single case studies apply. However, the close investigation of this phase provides further research directions to be
addressed. The findings suggest managers need to align employees' expectations of the change communication with understanding of the change goal.

**Brindley (2006)** in the article “Re-defining the library” explore the challenges libraries are facing in the digital age and consider ways in which they need to reshape and rethink their services and skills to maintain their relevance and contribution. It provides a review of a wide range of recently published materials (2003-2006) and gives a broad perspective on the challenges facing libraries. These are then considered within the case study experience of the British Library to identify key themes for redefining the concept of “library”. Through the case study the author identifies seven themes as central to redefining the library in the twenty-first century: know your users and keep close to them; re-think the physical spaces and create a desirable draw; integrate marketing into the organisation; open up legacy print collections to digital channels and through digitisation; reduce legacy costs and continue to improve productivity in traditional activities; invest more in innovation and digital activities; and develop our people and ensure the right mix of skills. This article gives an original view of changes within the library sector from one of the leaders in the field and is rooted in the practical and innovative approaches adopted by one of the world’s great research libraries.

**Fresh (2006)** in the paper, “The Link Between Self-Awareness and Cognitive Creativity: How Change and Ideas Are Shaped” linked the possibility of cognitive creativity to self-awareness. Substantial evidence was collected for this study including examples and a definition of cognitive creativity, supporting communication theories, a definition of self-awareness, details collected from another study of a self-aware sub-culture, and an in-depth interview with an expert in the field of cultural creativity. The results supported the hypothesis, which states that there is a causal link between self-awareness and cognitive creativity. The limitations of this study and suggestions for future research are included in the discussion.

**Malhan (2006)** in the paper “Developing corporate culture in the Indian university libraries: Problems and challenges of change management” discusses the problems and challenges of change management in the university libraries to facilitate their growth, resources management and service performance similar to the work culture of the corporate sector. It discusses the changing face of Indian university libraries and explores the ways the university libraries can manage change. It presents the case study of managing change at the University of Jammu Library. This study reveals the complexities of change management in the university libraries and indicates that the university leadership, the library manager, and the professional staff play a
key role in affecting change in the university libraries. Highlights that change management and staff development go hand in hand. The paper points to the fact that evaluation and review process of the universities for accreditation, grading, and certification also help to a great extent to facilitate and manage change. The university libraries may adopt the work culture of the corporate sector for building their collections, managing their finances, training their staff, upgrading their technologies, ameliorating their operations, but for rendering their services they must ensure humanism in practice. Problem areas identified and strategies tested provide an important input to the university librarians for effectively managing change in the university libraries.

Sinha (2005) in “Access to Information Technology in Modern Libraries” comment that today libraries of all types are challenged to provide greater information access and improve levels of service, while coping with the pace of technological change and ever increasing budget pressure. Access to library digital information is expected all the time, from anywhere. This is forcing a shift in role from repository to gateway, with users expecting online libraries that can provide round the clock service. As a result, connectivity and availability are critical service elements”. She further states that “strong partnership between IT and the library are essential aspects of our ability to create the most productive balance between the old and new. Digital technology can be our greatest tool in this effort.

Ashcroft (2004) in their study entitled “Developing competencies, critical analysis and personal transferable skills in future information professionals” reveals that new technologies mean library and information science is currently characterized by fast-paced change, with staff needing to be flexible in adapting and adopting new skills and levels of awareness. New developments need to be marketed and evaluated, and these are additional skills for information professionals to adopt. Findings of a research project carried out at Liverpool John Moores University into the marketing and management of e-journals demonstrate the need for LIS professionals to develop marketing and evaluation skills and strategies for new technologies. Other emerging skills in the electronic information environment are communication, negotiation and collaboration, with information professionals being called upon to teach new skills.

Baker (2004) in “The Strategic Management of Technology: A Guide to Library and Information Services” states that technology is not separate from other activities within an organization, but should be the concern of everyone within an organization, as technology is being applied to new functional areas and the requirement for integration means that no person
or department can remain unaffected or detached. As such, it is important to ensure that staffs have the correct technology skills in order to make it work for the good of the organization.

Goman (2004) in the study entitled “The 10 question change leaders must answer first” suggested that change managers need to answer certain questions before they set out to shake things up. And, it is also essential to analyze certain factors. The factors to be considered include knowing the perspective of employees, finding out whether they are prepared beforehand for change, and is the management able to answer the questions of employees with honesty.

Larance (2003) in the study “The Post-Acquisition Period: Gauging the Success of Communicating Organizational Change Relevant to the Aftermath of a Corporate Acquisition” says that organizations whether large and small go through constant and continuous change. With change comes a wide gamut of emotions; from frustration, uncertainty, and conflict to newfound challenges, opportunities, and new success. But often ignored is the powerful necessity to understand, manage, and effectively communicate change. Even small, seemingly insignificant change can create a drastic impact to organizational stability, cultures, and group dynamics. This project explores the process of communicating organizational change relevant to a corporate acquisition, yet specific to a post-acquisition period currently two years in the making. CompFlight (pseudonym) is a successful organization that has been in a constant state of organizational change over the past two years. In a relatively short time CompFlight has been acquired by two large corporations, endured layoffs, and most recently has undergone management reorganization. These changes have required a great deal of communication and yet there remains the potential for uncertainty and confusion. This project provides research and analysis into organizational change, exploring concepts of change, and the necessity of information sharing to support change initiatives, with a special focus on corporate acquisitions and the importance of communication during changing times. Employees at CompFlight were surveyed about the communication during and after the acquisition period. Results are presented and discussed. Conclusions describe the elements necessary to support a successful change initiative relative to a post-acquisition period.

Stueart and Moran (2002) in “Library and Information Center Management” states that the library and information centers and other knowledge based organizations are faced with the rapidly evolving rate of change. This change is evolutionary because task, technologies and even
organizational structure are dictated by constantly changing environmental pressures and relationships.

Horn (2002) in the case study entitled “Change Management: A Training Designed to Support Echostar Managers through Organizational Chaos and Change” was of view that with the potential merger between EchoStar and DirecTV, managers are faced with the difficult challenge of asking their employees to be flexible and support the upcoming changes. In most cases, when major organizational changes are first announced, employees have negative perceptions and worry about their job security, possible demotion and a fear of the unknown. Managers must become supportive communicators during this time and also be passionate advocates of the change, otherwise it will be difficult convincing employees to move ahead. The goals of this project were to gain a richer understanding of how people react to major organizational change and to better understand the communication needs of managers and employees. From this knowledge, training curriculum will be designed and delivered for EchoStar’s managers. To accomplish this task, the author interviewed five people who had undergone major change. Additionally, five managers from Echostar were also interviewed to study their perceptions towards the upcoming merger and to discover training needs. From the responses of interviews, the author created a four-hour training outline. The learning objectives are to explain the change process, the internal effects of change, the importance of effective change communication and skills for assisting employees. From this knowledge, managers will be prepared to support their employees’ reactions and communicate with clarity and understanding. Employees will feel valued and more willing to embrace transition. To EchoStar’s benefit, when employees and managers exchange effective communication and embody positive perceptions of change, overall quality will improve and it will take less time to accomplish the desired results.

Julia and Mark (2002) in their study titled “Re-conceiving Change Management: A knowledge based perspective” have focused that change may involves significant alteration to strategy, structures, systems, process and culture. Most organization still sees change as something done to individuals- that individuals are passive recipients and are told what to do. The Central argument of this paper is that change can usefully be conceived as a process of knowledge generation of organizational transformation to occur, an organization’s members need to evolve new tacit knowledge about the way they interact better with each other and external stakeholders and how they co-ordinate their activities. This paper used a case study of organizational transformation to illustrate how concepts from knowledge generation can be used to reframe some of the typical issues that arise during planned organizational transitions. The knowledge
generation perspective views change more as a process of innovation and creativity— not just for those who are responsible for leading change and developing new organizational vision and blueprints, but also for change recipients. The recipients need to be enabled to recreate their ways of working, their daily routines and practices.

**Brindley (2001)** opened the session on “*Managing the Change Process towards your Library of the Future*” by providing the context for change. In this she focused on the knowledge society and knowledge economy. She talked about technological drivers and changes in publishing. Her conclusion was that libraries must change to survive. She advised librarians to analyze their own contexts for change, to monitor external trends as contexts for change and planning, to position their own institutions and their libraries in new contexts, and to learn to manage change to move from now into the future. Brindley also warned that change is continuous process, not something which can be completed.

**Geleijnse (2001)** in his study regarding Change Management Process at Tilburg University and the Library of the European University Institute (EUI) discussed the development of a digital library at Tilburg University and the development strategy closely connected with the university’s strategy. It has contributed significantly to the positioning of the university. The involvement of the library staff and the changes in culture, attitudes, skills and responsibilities can be identified as the most important success factors. The EUI library is at the beginning of a process of strategic and organizational change. The involvement of an international user community and a multinational staff in the development of a new strategic plan was discussed and the various conditions for a successful implementation were identified. Geleijnse concluded with important recommendations for human resource management.

“The future for academic and research libraries can be an exciting and challenging one, at least for those libraries that are both able and open to change”. This article presents highlights from the sixth ‘International Summer School on the Digital Library’ held in (2001). The course focused on managing the actual change process towards a new kind of library. Conclusions from the International Summer School on the Digital Library were as follows:

Fundamental changes are occurring in society, education, technology and publishing. If academic/research libraries want to survive, they must also change. Libraries should, of course:

- Provide electronic access to scholarly material;
- Customize and personalize information services
The case study entitled "Implementing Change Process in a Decentralised Library Environment - Recent Redesign of the Organisation of Library and Information Services" was presented by Bjoernshauge (2001), Director of Libraries at Lund University Libraries in Sweden. Until 2001, Lund University had one university library, one big library for medicine, science, and engineering, and numerous faculty and departmental libraries, some 60 of which were without qualified staff and had inadequate opening hours. Currently, the library organization is in the beginning of a change process, the aims of which are to implement quality library services for students, teachers, and researchers, to develop electronic library services, and to focus on the demands and needs of the students. A choice was made for a decentralized library organization, or a network of libraries, with a minimum service level for all libraries in the network.

Prime (2000), Manager of Corporate Libraries at Hewlett-Packard Company, through the study entitled "Visioning and Strategic Planning for a Library: Case Study" gave a truly inspiring presentation about the importance of developing a vision for change, and illustrated this with examples from her own work at HP. Prime said, "the future is not what it used to be". Since nothing is predictable anymore, she asked why we should feel the need to plan. But then she argued that "planning is needed to shape [the] future," and "a vision gives the framework within which to make decisions." Strategic visioning is critical when the environment is dynamic and changing radically, which is the case for all libraries today. Prime talked about the characteristics of a good vision and the phases through which the strategic visioning process goes. She described a library's vision as a mental picture of one's library in the future.

Clayton and Micheal (2000), in their study entitled "Meeting the challenges of Disruptive Change" have offered the managers a framework to show them how to recognize different kinds of changes and make appropriate organizational response to the opportunities that arise from each of them. The author have highlighted that the disruptive innovations create a entirely new market through the introduction of a new kind of product or service, one that is unable to address the needs of the mainstream customers and are inconsistent with the company's values. Such change occurs so interestingly that no company would normally have a routine process of handling them. Thus to cope with managers have to develop new capacities by - creating new organizational structure within corporate boundaries in which new process can be developed.

Pugh (2000) in "Change Management in Information Services" opines that changes which library and information services face are of an unknown and unpredictable nature. He states that
it is impossible for library managers to predict future trends accurately. He feels traditional change management techniques are inadequate to deal with the changing environment that libraries are facing. For him it is a scenario where one has to brace oneself for whatever occurs. Under these conditions it is crucial that libraries make optimal use of the entire workforce. It is of fundamental importance that customer service be given top priority. It is also essential that flexible organizational structures be created where workloads and responsibilities are shared and trust and responsibility are the norm rather than control.

**Durkin (1999)** in his study, *Building Cross-Cultural Communication Skills for the Multicultural Workplace*, cites Simons, Vasquez and Harris (1993) which says Change cannot be ignored within organizational settings. A downsized workforce is being asked to do more with limited resources in less time. It is clear that the workforce is the key to organizational success. There is an increasingly apparent change in the diverse composition of the workforce and multicultural interactions abroad. This global change affects almost every business, but it is inescapable at Marriott International. They are competing in an industry that is multicultural by nature and have moved abroad with a combination of joint ventures, strategic alliances, and full ownership of hotels around the world. Currently, there is no structure in place at Marriott to manage the multicultural nature of the new workforce. There are communication misunderstandings due to cultural differences masquerading as conflict. The inability to see the true nature of the misunderstandings means that people are being asked to function as global managers without understanding the need for cross-cultural communication training. I not only must make them aware of the need for these skills, but train them to see themselves or their own culture from the outside and think more objectively as a consequence (Lewis, 1996). A training manual and corresponding all day workshop will be designed to decrease the conflict caused by cultural differences in the way people communicate. In addition to the these materials, I will provide justification for implementing such a program at Marriott, recommend where it will be most effective within the organizational structure, and assess the needs of their unique multicultural composition through surveys, interviews, and examination of the organization's culture. The result of greater awareness and the skills to deal with cultural diversity within the workforce will create a more collaborative environment where people's needs and concerns are heard and valued, regardless of how divergent they are from the mainstream. People perform better when they see that their diverse needs are met, and the future belongs to organizations that value people's differences and bring diversity to the surface.
Farley, Broady and Hayward (1998) in the study “Academic libraries, people and change: a case study of the 1990s” states that the effective management of change is a crucial issue for academic libraries in the 1990s and beyond, as change is impinging on every aspect of their work. Through a consideration of aspects of organisational theory, changes in academic libraries, and human resource management, this paper demonstrates the pressing need for attention to change and its effect on people, in an organisational setting. A case study is used to illuminate a literature review, and to ground the conclusions of the study in the experiences of staff in an academic library in a time of change. The structure of an organisation and the people within it are identified as the two primary concerns which should be central to any strategy to manage change. The structure should be flexible and organic to allow for innovation and creativity. Additionally, human resource management should aim to minimise the negative impact of change by responding to the needs of staff through communication and information sharing, staff involvement, training and development, and job design.

Barsody (1998) in the capstone project entitled “Communicating Organizational Change: A New Role for Training Professional”, examines the role of training professionals in communicating organizational change. To play an integral role in connecting the communication strategy with the business strategy, training professionals need to understand the factors that influence the communication process during large-scale change. By looking at the factors of culture, leadership, strategy, alignment, teams, and commitment, the project identifies opportunities for training professionals to communicate change and participate in the implementation of multidimensional and multilevel change initiatives. The project evaluates information and ideas from published literature and interviews about communicating organizational change. As organizations change, the role of training professionals will undergo transformation as well. The project and the related handbook redefine the communication role of training professionals and prepare them to participate in organizational change.

Lovaas (1996) in “A Workshop on Change and Personal Mastery for Lovaas and Associates” states that we live and work in an age of numbingly rapid change. If we are to cope with the turbulence of today it is necessary to understand change and be able to deal with change in a constructive manner. The objective of the workshop is to equip participants with the insights and tools necessary to develop personal mastery so they can they utilize these same principles in dealing with change.
Burnes (1996) in his article entitled “No such thing as ... a “one best way” to manage organizational change” States that the ability to manage change is now recognized as a core organizational competence, and this is reflected in the large number of books and articles devoted to prescribing how success in this area can be achieved. He further sates that although these prescriptions may vary significantly, they all tend to argue that their way is the “one best way” for all organizations. He Challenges the idea that there can be a “one best way” and instead seeks to replace prescription with choice. He begins by reviewing the two main models of change - the planned and emergent approaches - before moving on to discuss the merits of adopting a contingency model of change. However, he argues that such an approach does not offer real choice: instead it merely seeks to replace one set of prescriptions with another. Concludes by calling for recognition that organizations do have real choices in what they change and how they change it.

Pittman (1995) in the study “The Impact of Communication on the Organizational Change Process”, states change is an inherent part of organizational life. The accelerated rate of change in the past decade is a result of an expanding global marketplace, increased competition and continual advances in enabling technologies. Analysis of a select group of organizations which have recently undergone significant change suggests the probability of success in implementing change is significantly greater when companies communicate clearly with their employees. Omission or lack of proper consideration of the affect of communication in implementing organizational change can increase the risk of failure. This paper will address how communication relates to the implementation of change within the organizational context. Effective organizational communication will be defined by constructing a model based on the synthesis of both classical and contemporary theories of organization and communication. This organizational communication-flow model will provide the conceptual framework or profile within which to evaluate the effect communication has in the change process. This profile will identify key communication factors which significantly influence the successful implementation of change. This research provides a basis for improving success rates in the change process through effective communication.

Mecca (n.d.) in the module “Successful Institutional Change—The Human Dimension” summarizes essential concepts about organizational change, defines key roles that need to be assumed for a successful change process, and examines the skill set needed for effective change leadership. The author says minimal attention is paid to the human dimension of change initiatives—the psychological adjustments that participants need to make if the change is
to be integrated into the life of the organization. He concludes that for a successful change initiative, it is essential to fill all four roles described in this module. It is also wise to have different people fulfill each role. A change advocate is needed to envision a productive direction for change. A change sponsor is necessary to legitimize and provide resources for the change. Change agents are needed to facilitate organizational growth in a manner that engages all change participants. The level of commitment and training of the entire change team is frequently the most critical factor in the success of a change initiative.

3.2 Technological Change

Eng (2011) in his book Managing Technology and Managing Change in Libraries provides a thorough examination of the impact of technological change in libraries. This comprehensive guide covers a wide range of timely topics such as how to create a high performance website, electronic reserves, streaming video, inventory through wireless technology, proxy services, usability studies, online surveys and server log analysis. Since library technology has given birth to a new reality where resources allocation, office routines, service delivery, and staff skill sets are impacted in significant ways, successful implementation of technology necessitates careful consideration of how to manage change to achieve a soft landing. The topics covered in this title are timely and universal for library managers and practitioners. Library managers will find guidance for balancing conflicting new expectations and mediating staff stress in their own work settings.

Shoham and Perry (2009) in their study entitled “Knowledge Management as a Mechanism for Technological and Organizational Change Management in Israeli Universities” has examines the organization-wide technological changes that have infiltrated every aspects of life at all universities that are part of the higher education system in Israel during the last 7 years: the introduction of on-line instruction, e-learning and Enterprise Resource Planning (ERP) technology for university work process. The research findings show that there is a mechanism for managing organization-wide technological changes at Israeli universities but it is not a rational one. This study proposes a model for managing organization-wide technological changes in universities on the basis of the existing mechanism, using knowledge management strategies for the purpose of change management: KM-M-CM (Knowledge Management as a Mechanism for Change Management) Implementation of this model will make it possible to realize the challenge of transforming the university from a "knowledge institution" to a "learning institution." It will come life to the extent that the higher education system in Israel, its leaders
and decisionmakers understand the need for a permanent mechanism to manage change and adopt this rational model in order to establish it.

According to Whitford (2008) Change is something that affects everyone, everyday, and everywhere. His paper, “Change Management: The Effects on Generations X & Y” looks at change including how to manage change, communicate change, and the psychological affects of change. The research conducted shows how change affects individuals from generation to generation; focusing on X and Y generations, Baby Boomers, and older generations. The results of a survey are given and discussed to examine any correlations between age and change, and finally what considerations need to be thought of when planning change.

Mutula (2007) in the paper Paradigms shifts in information environment: Prospects and challenges African libraries trace the revolution in information and communication technology (ICT) and changes in this wake such as globalization, digital divide, information society, Millennium Development Goals (MDGs) and e-government and how these changes impact on the provision of library and information services. The paper is largely based on review of literature both online and print. The paper concludes that the paradigm shifts occurring in the information environment have affected the concept of library; the perception of ownership versus access of library resources; the nature of information resources and services; and the role of the information professional among others. The paper advocates for a proactive strategy on the part of information professionals in order to re-engineer and adapt the library to the volatile global information environment in order to remain relevant in the wake of new paradigm occurrences. Effective access and use of information will inevitably have great influence on the realisation of positive effects that the new paradigms occurrences engender in the global environment. It is desirable at this point in time to research into how information access and use can be brought to bear on the attainment of MDGs, bridge digital divide, enhance attainment of information society, promote e-government, etc. Despite, the rapid changes within the global information environment that has been occasioned by ICT, there is lack of critical mass of information science literature that addresses issues such MDGs, globalisation, information society and digital divide from the perspective of the information professional.

Long (2007) in the case study entitled “Technology-driven change management: Motivation and stakeholder acceptance in virtual supply chains” explores the dynamics of change management and organizational effectiveness and the experiences of a government agency with oversight authority in implementing a major technology initiative are discussed. The introduction of
change is frequently met with resistance, especially if that change involves a re-engineering of basic work process. Research suggests that employee motivation and morale in the face of major change initiatives can be impacted by leadership style. The normative decision model outlines how situational variables such as communication patterns, timing, and perceived need for change alter the level of participative decision making required for employee acceptance. Organizational change management strategies that include clear communication plans and training will meet with higher levels of employee satisfaction and acceptance. Traditional organizational structures should be adapted to accommodate the needs of increasingly virtual, technology-based work process and structures. The man-machine interface poses challenges in both systems design and application. A fully integrated sociotechnical system may be impossible. Most often, the technology is the driver and the human elements of relationship management are under-evaluated in terms of system design. Managing stakeholder expectations in the face of this type of technology initiative are explored as interface points in the system. Systems engineering heuristics provide excellent guidance for the development of this type of sociotechnical system. Lessons learned offer guidance for increased effectiveness and risk reduction for technological change management.

Haneefa (2007) in the study entitled, “Application of information and communication technologies in special libraries in Kerala (India)” investigate the application of information and communication technologies (ICT) in special libraries in Kerala, India. The questionnaire methods were used to collect data for the study. The other methods used are survey of librarians and library users, semi-structured interviews with librarians, and observational visits in the libraries. This study was confined only to the automated special libraries in Kerala. The analyses revealed that though the libraries had hardware, software, and communication facilities to some extent, ICT-based resources and services were not reaching the users to the expected extent. Library automation in special libraries in Kerala was largely commenced during the period 1990-2000. CDS/ISIS was used more in the libraries than any other software. The library catalogue found to be the most popular area for automation. The ICT-based resource used by the largest percentage of the users was the e-mail. Most of the libraries were hampered by lack of funds, lack of infrastructure, and lack of skilled professionals to embark on automation of all library management activities and application of ICT. A good number of the library users were not satisfied with the application of ICT in their libraries and indicated "inadequate ICT infrastructure" as their major reason for dissatisfaction. They proposed a variety of measures of formal orientation and training on ICT to become more effective users. The study provides recommendations to enhance library automation and effective and efficient application of ICT.
Smith (2005) in the study entitled “The impact of information and communications technology change on the management and operations of academic libraries” investigate the impact of Information and Communications Technology (ICT) change on the management and operations of academic libraries, how academic libraries deal with this phenomenon and strategies that could be considered to help deal with an environment where technology constantly change. In this study the researcher has focused holistically on the impact of ICT driven change on the academic library e.g. staff, clients, physical resources and information resources.

Stevens (2004) conducted a research study entitled “An investigation of the change process and its effect on employees: A case study of Antalis (Pty) Ltd” This research study was an investigation into the change process and its effect on employees, a case study of Antalis (Pty) Ltd. The objective of the research was to achieve a better understanding of how the company had changed and whether or not the change process was the correct one to have undertaken under the circumstances, and to investigate the effects the change had on the employees and the culture of the company. The rationale of the study was to assist the company in adjusting certain procedures of the change process that might have not been implemented correctly. To influence employees’ perceptions about the change process and the results achieved by the research, will assist with ongoing changes within the company. The research was conducted via a hybrid study, which involved qualitative and quantitative techniques. This was accomplished by means of a triangulation approach, which involved personal interviews with the executive committee of Antalis (Pty) Ltd, a confidential questionnaire sent to all the employees and an analysis of the historical documentation of Antalis (Pty) Ltd. This triangulation process would increase the validity of the research. The overall findings of the study were that the perception of the employees had changed from a positive attitude towards the change and the management who led it, to that of uncertainty for the future of the change process and where it was leading the company. The recommendations, based on these findings, are that the executive committee, through the regional managers, needs to communicate the process of regionalisation to all the employees. The process needs to be monitored via a new system and documented so that it is available for all employees. Future plans should also be mapped out to ensure a buy-in from employees and to avoid resistance to change that is present in the post-change cultures of First Paper House and Haddon’s.

Andrews (2002) in “Managing Change When Technology Changes” suggests that librarians need to perform research studies to determine how to best deal with or manage the continuously changing environment. Librarians also need to report their failures in adapting to technological
change so we may learn what not to do. Most of the difficulties library staff has adapting to change can be corrected with improved communication. An acronym was developed by the author to help managers deal with technological change, i.e. COMMUNICAEN

- **C** Count everyone in- All employees need to take part in decisions about technology.
- **O** Organization matters- Plan for training needs in advance.
- **M** Maintain an atmosphere of trust, honesty, and open communication.
- **M** Make sure all staff understand your expectations about technological skills. Make sure your expectations are reasonable.
- **U** Use good judgment and be fair when reassigning work after a change.
- **N** Never be afraid to admit failure.
- **I** Ignoring problems doesn’t solve them. Plan for and deal with employees stressful reactions to change.
- **C** Creative solutions can be found- Ask your employees for some.
- **A** Accept that performance can vary greatly when change is implemented.
- **T** Training helps staff accept technology- Provide adequate training before technology is implemented, and make sure employees acquire adequate skill sets.
- **E** Everyone is important- Pay attention to your employees. Know how they spend their time, and what they need to succeed.

**Audeoud (2002)** in the study “The Management of Technological Change within Faculties in International American Schools” has focused on the management of technological change within the schools’ faculties. The faculty has been considered as being at the core of the Human Resource Management of these educational institutions. The study focused on 'professional development' and 'instructional leadership' primarily in terms of technology and looked for some answers to the following question: How are international school managers going to manage staff development dynamics within their institution in order to comply with a global world more and more driven by technology? The study looked for factors that affect success in the management of technological change within a school faculty. Cultural richness, connection to the community outside and a high degree of exposure to technology seem to be the major keys to the success of the management of technological change in international American schools

**Tam and Robertson (2002)** in their study, “Managing change: libraries and information services in the digital age” says libraries and information services face many challenges from changes in the information environment, most of which have occurred as a result of developments in electronic information resources and the evolution of the “digital age”. This
paper outlines the characteristics of the information society, describes various aspects of the challenges facing libraries, both externally and internally, and makes suggestions as to how library managers can make changes within their organisations in order to ensure that they retain their place in the information world. Examples of changes taking place in the authors’ own workplace, the University of Hong Kong Libraries, are outlined.

Adkins (2000) in the study entitled “Information Technology Change and Asset Management” is of the view that the information technology change and asset management programs available within the information technology industry do not meet the requirements necessary to accurately track the usage of computers and software in today's business environment. The following is a guide to design, implement, and provide systematic procedures for the management of information technology changes and the management of the assets in which the hardware and software reside. The topics to be discussed are how to plan for the management of information technology change, how to implement these technology information changes, how to provide meaningful management reports and how to manage the information technology assets. Change is a way of life. As human beings, we change every day-physically and mentally. Typically, change happens without much thought. The world of information technology is similar to change in humans, as it is also evolving. We do, however, have more control over how and when information technology changes. The segments of information technology referred to in this paper are hardware and software changes. In the past decade, information technology has changed more than any other industry known to humans. This paper will identify how businesses and corporate America must respond to the fast-paced information technology changes. Although there are information technology change programs available in the industry, none seem to provide a clear, specific process. This paper provides a systematic procedure for the management of information technology changes.

In the paper, An Improvisational Model of Change Management: the Case of Groupware Technologies, authors Orlikowski, Wanda J. and Hofman, J. Debra (1997) present an alternative way of thinking about technological change in organizations. This alternative approach is motivated by a recognition that traditional models for managing technological change - in which the major steps of the change are defined in advance and the organization then strives to implement these changes as planned in a specified period of time - are not particularly useful given the more turbulent, flexible, and uncertain organizational situations that many companies face today. Traditional models are also not particularly useful for helping the implementation of technologies such as groupware whose unprecedented, open-ended, and
context-specific nature make it difficult to predefine the exact changes to be realized and to predict their likely organizational impact. Authors suggest an alternative model of managing technological change, one that reflects the dynamic and variable nature of contemporary organizations and technologies, and which accommodates iterative experimentation, use, and learning over time. We label such a model of managing technological change "improvisational," and suggest that it may enable organizations to take advantage of the evolving capabilities, emerging practices, and unanticipated outcomes that accompany use of new technologies in contemporary organizations.

Biggs (1982) in the study "Resistance to Change" states that the academic libraries (particularly research libraries) will soon be compelled to engage in more comprehensive, efficient, structured resource sharing that has been afforded by traditional interlibrary loan systems. This will require profound changes in collection policies and concepts of institutional responsibility and autonomy. Because human responses to change have rarely been explored in the library literature, this paper discusses individual, group, managerial, and organizational responses which have been described by researchers from other disciplines and which should be taken into account by resource sharing planners.

3.3 Impact of Technological Change in Agricultural Library

Kalusopa (2005) in the paper "The challenges of utilizing information communication technologies (ICTs) for the small-scale farmers in Zambia" attempts to discuss some of the key challenges that Zambia faces in the application of information communication technologies (ICTs) for the small-scale farmers. A survey of information needs of small-scale farmers in two selected provinces was carried out in order to establish and prioritize their information needs. Evaluation of the existing information infrastructure provided insights into the type of ICTs that can support the provision of information to small-scale farmers in Zambia. The paper highlights some of the salient findings of the research carried out under the African Technology Policy Studies (ATPS), Zambian Chapter and financed by the International Development Research Foundation (IDRC) from 2001 to 2003. These, among others, include: weak human capital and technical infrastructure, lack of clear national information policy and lack of a coordinated agricultural information support system for small-scale farmers anchored on ICTs. This study illustrates that it is becoming increasingly evident that the success of any agricultural development programme in Zambia requires a well-organized and functionally integrated information delivery system propelled by the application of appropriate ICTs. The paper presents
recommendations for this to be realized. The changes in the socio-economic and political arena in Zambia have had a drastic effect on the management of the agriculture sector. Further, even though it is widely acknowledged that information plays an important role in agricultural and rural development in Zambia, this conception has received less pragmatic attention and seems to have been less consolidated over time. The central role of information in this sector has thus been largely superficial. The need for a clear national policy framework on the use of ICTs for the small-scale farmers to enhance national development is thus articulated in this paper.

Singh (2005) in the paper “Revamping agriculture library and information services in India” discusses the state of agriculture libraries in India and evaluates parameters such as need for Agriculture Library Association, Automation and Networking, Agriculture Documentation Centre, professional development of library staff, professional status etc., and suggests measures for improvement of library services.

Sreenivasulu (2001) in “Networking agricultural information systems and services in India” provides an overview on the networking of the Agricultural Information Systems and Services in India. Covers a range of issues related to Agricultural Research Information System (ARIS) of ICAR in India. It discusses in detail the Agricultural Research Information System Network (ARISNET) for India and its modules consists of Agricultural Research Personnel Information System (ARPIS), Agricultural Research Financial Information System (ARFIS), Agricultural Research Library Information System (ARLIS), and Agricultural Research Management Information System (ARMIS) and ARISNET management. It reviews the strength and development of Agricultural Libraries in India including institutional system of ICAR, State Agricultural Universities, and ICAR Institute Libraries. It also covers information technology applications in agricultural libraries and information technology infrastructure in the Agricultural Libraries in India.

“Sustainable management of library and information systems in agricultural universities” The paper presented by Raman (1998) at 43rd All-India Conference of the Indian Library Association explains the importance of library and information systems in agricultural education, research and development. Points out the challenges offered to library executives by information explosion, developments in computer and communication technology, and information awareness. Author opines that agricultural library systems in India as they exist now are not sustainable. They have to be totally recast and made more productive to the needs by application of modern management techniques. Paper discusses in detail the concept of sustainable library
management, its functions, techniques, TQM, and Automated Management Information System for the library. Stresses that the success of the library system in an agricultural university depends on how appropriately it could conceive the university's information requirements and develop appropriate strategies for providing effective information, support to agricultural research, development and extension.

The report “Enhancing Competitiveness in the Information Age: Strategies & Tactics for Special Librarians & Information Professionals” presented by Kenneth B. Allen (1997) explains about change, the future & competitive success. The purpose of this study is to look at the environment within which corporation & special libraries now operate; & to provide information & strategies that will enhance the ability of special librarians & information professionals to address tomorrow’s challenges while the primary focus of the study has been the corporate environment, it is hoped that these analyses & recommendations will be of value to special librarians in every type of organizations.

Raman (1996) in “Priorities in Information Management Systems for Agricultural Research and Development in India” surveys the application of computer and communication technology to manage information for agricultural research, education, extension and development in India. Covers the institutions supported by CGIAR, ISNAR, ICAR and similar organizations. Critically evaluates existing research and development systems in the agricultural sector under Government of India, State Government and State Agricultural Universities. It Points out that the failure to modernize library systems to function as the heart of agricultural information systems has resulted in the ineffectiveness of our major programmes in the agricultural field. The need for integration of library, information and extension is stressed. Attitudinal changes required are discussed and suggestions for improving the situation put forward.

Raman and Francis (1996) in the paper “Information Needs of Agricultural Scientists in India: Problems and Prospects” evaluates how far the existing information systems can meet the research, education and extension needs of Agricultural Sector in India based on a survey conducted among agricultural scientists working in Kerala. It points out the wrong concepts about information systems and services, puts forward suggestions for improvement and recommends the establishment of a central agency to monitor the utilization of resources allotted for agricultural information services.

Majid (1996) in the paper “Employers' perceptions about subject specialist agricultural librarians in developing countries” explores the perceptions of employers about the recruitment
and retention of subject specialist agricultural librarians in certain developing countries. Not surprisingly, employers rated the performance of library professionals with a science background higher than those without it. Most the employers supported incentives for professionals with a science background but also indicated lack an inability to implement them. Problems in the recruitment and retention of library professionals with a science background included: the limited number of library professionals with a science background, unattractive salary and limited career development opportunities as compared to mainstream scientific disciplines, and lack of awareness among science graduates about job opportunities available in scientific and technical libraries. Some measures are suggested to encourage the recruitment and retention of professionals with a science background in agricultural libraries.

3.4 Challenges before Library Professionals

Omekwu (2007) in his study “Library and information service delivery in an era of change and reform: librarians and needs” investigate librarians' level of responsiveness in an era of policy change and reform. The approach adopted was to introduce and describe the National Economic Empowerment and Development Strategy (NEEDS) as a major policy framework in Nigeria. A purposive sampling approach was used to survey librarians' familiarity and knowledge of the NEEDS concept. Findings of the study revealed that majority of the respondents did not understand fully the NEEDS concept; were not familiar with the NEEDS document, institutional and macroeconomic frameworks, NEEDS vision, values and principles. Many of the librarians had neither seen or read the document; less than 50 per cent of the respondents knew where to obtain the NEEDS document; knew that the NEEDS document can be accessed online and downloaded from the web. Majority did not know that the NEEDS secretariat is located at the National Planning Commission. Only five indicated that they responded to the invitation for comments and suggestions during the formulation of the NEEDS document. It is critical for the Nigerian Library Association to heighten its information advocacy role in an environment of change and reform. Librarians must be proactive in an environment of change and reforms. It challenges librarians to relate to the change and reforms occurring in the organizational, transactional and contextual environments of their work.

Kodradjaja (2005) in “The Effect of Human Resources on Change Management in the Context of Effective Sales Management” says change can be happen in every layer of life, institution and organization and that is why people have to learn to adapt, to change, gracefully in order to catch up with the globalization competitively. Change has a strong relation with the "people" issues, it
starts from each individual on how they perceive a change, and embrace the change as an opportunity to creating something great. As a matter of fact, organization must have a big and clear of the concept as people can clearly see the big picture and concept and start to believe and act and embrace the change successfully to survive and become the competitive one.

Huffman (2005) in “Leadership Practices Elevate Organizational Performance” states that because an organization is susceptible to omnipresent change, leaders have to develop and distribute higher order leadership practice which prepares the organization to adapt. Comparing two industries with similar change problems reveals that leadership is critical. Leaders distill best practices to find the unique attributes of their organization and then innovate according to need. The organization’s mission can be achieved through advanced principles that elevate everyone toward a goal. The leadership art is to achieve higher order of values, people, purpose, and goals for sustainable competitive advantage. Learning means adapting to change and adopting the culture necessary to get to the next level. Leaders adhere to a discipline which involves leadership at all levels of the organization.

Culpepper (2003) in the paper “Needed Energetic Librarian Willing to Work in Challenging Arena!” opines that librarians are educators who perform in a challenging arena. Individuals who like their profession will hold an extensive knowledge of librarianship. They will be adaptable to a variety of responsibilities in combination with keeping an open mind toward learning, exhibit excellent customer-service skills, be adept with managerial and supervisory tasks, and maintain a motivated outlook combined with an energetic work style. Librarians will confidently face the challenges, used good judgment in handling the problems and work with a solid intent to meet research/information needs of clientele. This profession is one of constant change. In applying professional learning such matters as cataloging rules and classification schedules for organizing information will continually. Means of storing and making information available to customers will change with innovations in the commercial world. The library will gravitate toward providing resources and services resembling activities of an information broker. Consequently, organizational skills and time-management skills combined with talent in self-education will weigh more than can be predicted. Many jobs will require excellent oral, written, and interpersonal communication skills and the ability to work effectively in both a team-based environment and independently. In addition, managerial jobs will require effective leadership, and supervisory and managerial skills.
Jones (2003) in the paper entitled “Out of the Box” A really excellent librarian will not only have the basic computer skills, but will know how to update those skills as needs rapidly change during the course of a career; a really excellent librarian will not only know how to use technology, but will have a vision of how technology is likely to change over the coming years and what influence those changes will have on current investments and decisions.

Hall (2003) in the paper entitled “Of Babies and Bathwater-Hiring Library Staff for the 21st Century” says undoubtedly, the information landscape is changing. Undoubtedly, there are many resources that a person can turn to at home twenty four hours a day, seven days a week, and training would help the person find and use these sources more effectively. Undoubtedly there are uninformed people who assume that the internet replaces libraries. There are also occasions when a patron needs the skilled help of a librarian whether using traditional print sources or searching the internet...... To staff the libraries of the 21st century, to manage and control our information-rich environment we need staff with sophisticated technical skills. We need staff with the tried and true personal values from a simpler time. Finally, we need staff with the willingness to help. They need to be able to help our patrons learn to find their way through the glut of information available to them. They need to be able to help the profession reassess or reinvent itself...... Change has come, and is still coming. Our future, we have already agreed, will most likely be “discontinuous”. It is important to remain flexible and open to possibilities both as we confront the needs of our profession and as we hire out staff for the future.

Gassman (2003) in the study entitled “Librarians in the 21st Century” is of view that generally we need librarians who have prepared themselves through education and experience and have made an effort to keep abreast of new technological advances. We want librarians who are flexible, enthusiastic, have good stress management skills, are service oriented and have excellent interpersonal skills. And lastly we must have librarians who have that drive to learn and continue learning.

Eisenbach, Watson and Pillas (1999) in the article, “Transformational Leadership in the context of organisational change” describes the importance of leadership to the change management process. It is underscored by the fact that change, by definition, requires creating a new system and then institutionalizing the new approaches. While change management depends on leadership to be enacted, to date there has been little integration of these two bodies of literature. Thus, the purpose of this article is to draw parallels between the change literature and the leadership literature; specifically, the transformational leadership literature that is primarily
concerned with the capabilities required to enact change successfully. This is done by describing areas of convergence between the two literatures that point to the appropriateness of transformational leadership in enacting change.

Griffiths (1995) in the study “The changing role of librarians - Managing new technologies in libraries” opines that never before have there been so many opportunities for involvement in an information-based society including electronic and multimedia publishing; local, national, and global networking; development of navigational and filtering tools for access to networked and non-electronic sources; and new modes for delivering information and educational programs. The base of recorded information is growing at an accelerating rate, in increasing varieties of formats (texts, numeric, graphic, video, audio, image, electronic, etc.). Furthermore, increasing array of computing and telecommunications technologies are emerging to create new options and opportunities for the development of information capture, storage, retrieval, and delivery systems/services. These developments point toward increased difficulty for the information user to obtain needed information in the required time-frame, quantity, and level of detail. The role of information specialists is to facilitate the interactions between the potential information user community and the body of recorded information. The traditional information access and management roles played by the information professions are expanding, particularly in the design and development of new information products and services and of tools to support information seeking and selection, the analysis and synthesis of information content on behalf of users, and information user instruction.

Conclusion

So, it is quite evident from the review of literature that the momentum of change is inevitable. It requires people and organization affected by it to be well prepared beforehand by developing competencies for handling change dynamics. It is necessary in order to survive and grow in a globally competitive world. So, change management has become an extremely important issue which library professionals need to address properly. Penetration of technology in the library and information science environment has given birth to the concept of "Libraries without walls". It has put libraries in the phase of transition which is posing various challenges to the people associated with this profession as it demands new services, techniques, staff skill, and roles to fulfill changed users expectations and information seeking behaviour. All these are forcing libraries to rethink, reshape and reinvent their structures, services and roles to successfully and effectively adopt and manage change to succeed in the future.
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