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[van der Pas, J.W.G.M., W.E. Walker, V.A.W.J. Marchau, B. van Wee, and J.H. Kwakkel. "Operationalizing adaptive policymaking", Futures, 2013.](http://dx.doi.org/10.1016/j.futures.2013.06.004)

**paper text:**

Change management in an1**academic library in the knowledge economy**Abstract In the**knowledge economy,**knowledge flows are channelled in new ways which bring along changes to the structure and function of an organisation. Organisations such as academic libraries often introduce new innovations in delivering information services to clients which entail27**the use of information and communication technology.**Current growth**in**technological applications1**is enabling academic libraries to change the way they deliver service to clients.**Technological applications continuously redefine how academic library collections are used. This article investigates1**how change in terms of technology is managed in a decentralised academic library in a higher education institution of South Africa.**The1**study was placed within a qualitative research paradigm. A case study design presented the** research **with the opportunity to analyse the** perception **and experience of participants and ensured that real life events** were **investigated. Semi-structured individual interviews were used to collect data. The** most significant finding **of this study** is **the**1**emphasis on the importance of change management in** academic libraries and**the need for effective communication in order to achieve low resistance to change**from academic library staff. Keywords: Change management; academic library; knowledge management; technological change 1 Introduction Change is required whenever new technological innovations impact on customer needs, the market changes and competitors change. Change is especially required when an organisation realises it is not operating at peak efficiency because its knowledge assets are not optimally managed in comparison with its competitors’ knowledge assets. The need to change signifies the transformation towards a knowledge economy which first became evident in the growing perception of knowledge as one of an organisation's most critical resources (Liebowitz, 1999). Now knowledge7**has become**a**key economic resource and the dominant source of competitive advantage**in the digital age (Drucker, 2009:190; Hirt & Willmott, 2014:7). However, the movement towards the knowledge economy has not yet had its global reach. Some of the reasons may possibly be 1) a lack of4**establishing a sense of urgency, 2) creating**the**guiding coalition, 3) developing a vision and strategy, 4)**communic- 1 ating**the vision, 5) empowering**participants**for action, 6) generating short-term wins, 7) consolidating gains and producing more change, and 8) anchoring new approaches in the culture of**an organisation**(Kotter,**2007). Any organisation aiming at participating in the knowledge economy should put into practice these eight aspects of change management. Change management is important because people in organisations require assistance in responding to change that they face in the workplace (Austin & Currie, 2003:230; Kotter, 2012:54). The top management of an organisation is responsible for developing strategies to assist people facing change. Change management aims at successful change efforts. An example of a successful change effort is when, after the introduction of a new technological application for improved access to academic information, the innovation is then actually used and becomes integrated in the information service offered by an academic library. Successful change efforts enable academic libraries to play their part in equipping the future workforce (i.e. current students, future graduates), who have23**to meet the challenges of the knowledge economy.**Only academic libraries that actually succeed in this area are real role players in the knowledge society. The knowledge society is giving rise to the emergent entrepreneurial university. Five facets reflect an entrepreneurial character, 1) organised multi-disciplinary3**group research, 2) creation of research**knowledge bases**with commercial potential, 3) development of organisational mechanisms to move research out of the university as protected intellectual property, 4) capacity to organise**enterprises**within the university,**and 5)**integration of academic and business elements into new**formats**such as university-industry research centres**(Carlson & Kneale, 2011:168; Etzkowitz, Ranga & Dzisah, 2012:159). Against this background, academic libraries worldwide are facing a time of change. Academic libraries should plan for change beginning with a situation analysis and diagnosis followed by developing an action plan that will guide the implementation of change. After implementation the result then has to be evaluated. Libraries should adopt change and become agile in its strategic decision-making21**in order to survive and**remain relevant**in**the changing**environment**of**the**knowledge economy. This is an unpredictable economy (Botterhuis,24**Van der Duin, De Ruijter & Van Wijck,**2009; Barcan,**2010).**Because of its unpredictability library management should develop a change management strategy to guide the library into a favourable opportunity that promotes growth and relevance. Library management should ensure that all departments combine their efforts of sharing knowledge when something new has been implemented so that it can achieve better results. To achieve better results, employees first need to understand the strategic direction (Botterhuis et al., 2009; Barcan, 2010). Employees with an understanding of the desired results contribute more towards the change process. Library management should at all times communicate with employees and ensure that they understand the planned change process. Change often brings fear to employees; to combat fear, management’s communication should be encouraging, open and honest so that employees may be inspired. Open communication builds employees’ trust in those in leadership roles.19**Leadership and change**management**have been**investigated**extensively in the**literature (Stripeikis & Zukauskas, 2005; Ntsungu, 2007; Kotter & Schlesinger, 2008; Sutanto, Kankanhalli, Raman & Tan, 2008; Bold, 2011; Gans, 2011; Nakhoda, Alidousti & Fadaie, 2011). The research gap filled by the current study is the necessity of2**change management** within **a decentralised academic library that has gone through a merger**and is now aiming to transform towards the knowledge economy.2**In order to analyse the role of change management for the academic library in the knowledge economy,** given **the**above context, this study focused on one of South Africa's recently merged universities with an academic library consisting of four geographically dispersed library centres. The article begins with an overview of the basic components of20**change management, the**phases**of the change management process**in the knowledge economy, and some of the key enablers and barriers to change management. The research objective was to investigate the need for change management of academic libraries as role players in the knowledge economy. The research methodology section gives a11**motivation of the case study**research design.**The**main**research question**was: How**is**change managed in a merged, decentralised academic library environment? 2 Change management in academic libraries in the knowledge economy14**The purpose of this**literature review**is to**establish**a theoretical framework**which will give structure to a study of change management of a decentralised academic library in South Africa aiming to transform towards the knowledge economy. 2.1 Basic components of change management Firstly, change management helps organisations to identify barriers to change and combat resistance to change; secondly, it develops a strategy to overcome barriers and resistance to change (Sutanto et al., 2008). Stripeikis and Zukauskas (2005:333) mention five of the most basic components of change management, namely 1) define set goals, 2) establish what will not be changed, 3)9**get employees into the process,**4)**create a plan**for change,**and**5)**communicate with employees.**These components are illustrated in Figure 1. Define set goals Commun- Establish icate with what will employees not be Change changed management Create a Get change employees plan into the process Figure 1: Components of successful change management (Stripeikis & Zukauskas, 2005:333) Successful change management relies on a structured approach aimed at ensuring2**that the transition from** the **current state to a desired state is promoted**(Ntsunguzi, 2007:14; Bold, 2011:12). Essentially the objective of change management is to empower individuals and in turn this will lead to the organisation transitioning to the desired future. 2.2 Phases of change management18**in the knowledge economy In the knowledge economy,**knowledge flows are channelled into new sources of technological innovation that bring along changes on the structure and function of an organisation (Etzkowitz & Leydesdorff, 1997). Managing change is an important process to be undertaken because it enables the organisation to correct its mistakes during the process of change and enables it to reach new solutions and set new goals (Newman, 2012:67). The Kotter's change phase model is one of the models often used to transform an organisation from its traditional state to the desired state (Kotter & Cohen, 2002; Mento, Jones & Dirndorfer, 2002; Kotter, 2007). This model has eight key phases, namely: Phase 1 –16**Establishing a sense of urgency:**Most**people**do**not**like change**to**take place; people find change is difficult. This stage aims to ensure that people get the feeling that change should happen and that something should be done. It helps to reduce the number of people who are not accepting change (Kotter, 2007). Phase 2 – Creating the guiding team: The right people should be selected to manage change. People should be grouped together as a team powerful enough to lead change. Successful change happens when it is led by a group of leaders with knowledge and experience on that particular change initiative (Kotter, 2013). Phase 3 – Developing a vision: A shared vision gives people direction and motivates them in supporting the vision. When the vision has been developed, it will be easy for the guiding team to direct the change efforts. At this stage, strategies for achieving the vision also get developed as people begin to share vision and making it their reality (Kotter, 2007). Phase 4 – Communicating the change vision: Appropriate methods such as face-to-face discussions, emails, intranet, portals and social media applications should be used to give relevant change vision information and obtain employee buy-in (Kotter & Schlesinger, 2008). Phase 5 – Empowering employees: To act on the vision, employees should be empowered by getting rid of the obstacles that will limit them from performing well on the change vision. Obstacles could be lack of skills or human resources and changing of17**systems or structures that undermine the change vision**(Kotter, 2007). Phase 6 – Creating and celebrating short-term wins: Motivation is key to successful change management; those employees who are performing well should be rewarded because they are contributing towards making the change vision successful and improving performance in the organisation (Kotter, 2007). Phase 7 – Broadening the change: Change taking place in a particular section tends to also affect other sections of the organisation. Change has to be successfully broadened to all interrelating sections. At this stage it is important to eliminate unnecessary work or the duplication of processes (Kotter, 2007). Phase 8 – Embedding the change in the culture of the organisation: Organisational culture consists of the behaviours and norms of people in the workplace its organisational 5 values. When change takes place new values may surface together with behavioural norms and shared vision that accommodate the change (Kotter, 2007). It is important that organisations follow a phased approach to introducing change so that the barriers to change can be effectively overcome. Barriers can be prevented when organisations know the enablers of change. 2.3 Key enablers and barriers5**to change In order for organisations to** successfully implement **change**in the knowledge economy, they should pay full attention to the enablers of change. Some key enablers and barriers to change emerged from the literature review (Stripeikis & Zukauskas, 2005; Ntsungu, 2007; Kotter & Schlesinger, 2008; Sutanto et al., 2008; Bold, 2011; Gans, 2011; Nakhoda et al., Alidousti & Fadaie, 2011), listed in Table 1. Especially communication and strong leadership are required so that these factors can become enablers of change instead of barriers. Table 1: Key enablers and barriers to change Enablers to change Barriers to change Educated10**cross functional teams with high performers and the right skills**Resistance to change Effective communication Lack of communication Good project management Ineffective project management Continuous employee involvement Focusing on change that is not sustainable Top management commitment and leadership Lack of strong leadership and low top management involvement Aligning change within the culture of the organisation An approach to change that is not systemic Wood, Miller and Knapp (2007), Oakland and Tanner (2007), and Watson (2010), suggest that before organisations such as academic libraries undertake any change efforts, it is sensible to first understand their specific role in the knowledge economy. 2.4 The15**role of libraries in**the**knowledge economy**In**the**knowledge economy,**libraries are**seen as the reservoirs for knowledge by making sources of high quality information available to clients. When a person acquires knowledge he or she is better position to make decisions that will improve his or her life. Active decision- makers who apply their knowledge in innovative ways are the people participating in the development of the economy, they often contribute as entrepreneurs and improve the lives of others (Kargbo, 2011; Etzkowitz et al., 2012). Libraries present learning environments for many of these people to acquire the skill of effectively searching, evaluating and using reliable information. Information literacy training enables people to acquire the ability to choose only high quality information sources and to use information ethically and wisely. It is crucial in the knowledge economy for people to obtain advanced information literacy skills (Clarke, 2001; Tuominen, Savolainen & Talja, 2005; Hancock & Spicer, 2011). The needs of people visiting and using the services of academic libraries in the knowledge economy differ from past needs. One of the reasons is because university curricula require them to work and study in groups (Sidorko & Yang, 2009). Nowadays academic libraries have become a work and social space for users of social media applications as part of their learning experience. Technological developments are playing a positive role in delivering content for learning. These developments have transformed libraries into “knowledge commons for collective learning" (Duderstadt, 2009). More recently cloud computing is playing a role in academic libraries by enabling services such as group training, sharing and accessing useful information not only from other libraries but also other essential partners in the knowledge economy, for example, research and commercialisation units with sensors in laboratories, cloud computing and big data, a combination of various mobile apps with extended access to other resources and tools for achieving excellent levels of client service (Scale, 2010; Hirt & Willmott, 2014; Caetano, Antunes, Pombinho, Bakhshandeh, Granjo, Borbinha, & Da Silva, 2016). Thus, libraries5**have an important role to play in the**knowledge economy and in order to remain relevant they have to effectively manage change on a continuous basis. 2.5 Change management in academic libraries The increase in the use25**of information and communication technologies**(ICTs)**in education**characterises**the**change in academic libraries (Siddiqui, 2003; Ahmed, 2011; Mottaghi-Far, 2012). The development of ICTs22**over the past few years have**enabled libraries to**change the**way they function. For example, access to information, circulation, acquisition and cataloguing are some of the typical library functions and departments that have been 7 affected by ICT developments. Change takes place in all library departments in all their activities. Services have shifted2**to specialise more on e-services and e-products** because the **majority of library clients have access to devices such as**computers, laptops, iPads, smartphones and tablets to gain access to information (Konings & Dekker, 2005; Wood et al., 2007; Nakhoda et al., 2011; Mottaghi-Far, 2012; Ashill, Casagranda & Stevens, 2016). The focus of this study is on change associated with using new technologies and how this change is managed well by library management together with its employees. All academic library staff should know that change brings new experience and growth. When change is about to happen, communication and collaboration are essential in achieving a positive change effort. With the move towards the knowledge economy change management becomes a priority. Academic libraries have to monitor their environment continuously so that they do not become marginalised. They have to continuously change in order to be competitive and successful in delivering relevant services to their clients. Change should be reflected in library policies, collections, budgeting, staffing, and service delivery mechanisms. Resistance to change is not unusual and therefore change should be carefully managed. 3 Research methodology This study investigated change management at an academic library to gain greater understanding of how change1**is managed in a** merged, **decentralised academic library** environment. **In**order to gain insight from the perspectives of individuals this study had to follow a qualitative approach. It consisted of semi-structured interviews with academic library employees at management and staff levels. The semi-structured interviews offered richer data because the data collection method allowed the researcher to be flexible and extend and formalise conversation. Although it was a time-intensive process of collecting data, individual interviews did not exceed the one hour time-limit in order to ensure participants’ maximum participation while still respecting their work-schedules. Participants provided answers to specific questions, which as Yin (2012:12) explains, helped in constructing the reality through analysing the responses of participants about situations in and of the library environment. An audio recording device was used to record conversations with participants in order to ensure research integrity, i.e. creating and preserving a record of primary data. Consent was obtained from participants. Participants were duly informed of the research objective and their participation was voluntary and anonymous. Kumar (2005:164) and Botha (2007:41) suggested a sampling strategy that enable researchers to select certain units from the target group in order to reduce the number of representatives of the population. This study applied purposive sampling in order to select participants that would be able to provide data of how change is managed in a decentralised academic library. Directors Campus Heads of Librarians Department Information Librarians Other Staff Figure 2: Sampling Primary data was collected from the staff of a decentralised academic library staff representing five groups as illustrated in Figure 2. In total 21 participants were interviewed. 4 Research findings and discussion The frequency distribution of participants by position level is presented in Table 2. Firstly, the study collected data from participants at all staff levels regarding change management. Secondly, although the study was not based on generation theory, it was also deemed necessary to ensure representation from different generations of staff. The majority of the participants were Information Librarians, followed by the Heads of Department. Table 2: Frequency distribution of participants by position level Position level Frequency Percentage Director 2 9.5% Campus Librarian 3 14.3% Information Librarian 8 38.1% Head of Department 7 33.3% Other Staff 1 4.8% TOTAL 21 100% Most participants were either in their forties or represented the 56 years and above age group. The age groups of participants could potentially give a6**deeper understanding of whether resistance to change can be associated with a specific age group or**groups, generation or generations. However, the main research question was not to deduce from generation theory. Table 3: Frequency distribution of participants by age group Age group 20-29 years Frequency Percentage 2 9.5% 30-39 years 4 19% 40-49 years 6 28.6% 50-55 years 3 14.3% 56+ years 6 28.6% TOTAL 21 100% Table 2 and Table 3 above indicate the proportional distribution of participants as a result of this study's purposive sampling strategy. The findings from the interviews give a deeper understanding of1**how change in terms of technology is managed in a**merged,**decentralised academic library**environment. Participants shared**a**common perception that there are two ‘types’ of employees – those who embrace technological change and those opposing change. From the interview findings, it showed that participants of above 55 years of age were less eager to embrace new technology than the younger ones. All participants said that any employee could potentially embrace change regardless of age. Some participants felt that certain employees did not like change due to generational challenges. The younger generations were more motivated to adapt to change and were more frequently the initiators in the uptake of new technology than were the older generations. It was perceived by some participants that their colleagues were sometimes intimidated by new technology, that it complicated their work, and that possibly they would lose their jobs if they were not using new technology. The majority of the participants reported that they had experienced previous changes to library which management meant that they had to deal with different management styles. These participants felt as if they were taken out of a working environment which they had become accustomed to over a period of time. This perception was not purely related to 10 technological change, instead it was merger related leadership change which in some instances led to system change. Some participants experienced change in library strategy, vision, mission, values, policies, procedures, how employees work and their work ethic. Table 4 shows the way in which participants experienced change either12**in a positive or negative manner.**Table 4:**The**positive and**negative**experience**of**change13**Positive experience of change Negative experience of change ? ? ? ? ? ? ? The**movement of people from past state to the current defined state has improved the level of staff commitment The movement of people from past state to the current defined state has clarified job roles In life there should be change, people just need to adjust and experience change as positive Change is a good thing and it must have a good a purpose and good outcome Employees should realise that they need to adjust to new management style because change is one of life’s realities Change is positive, we are working hard because we need to perform well Change to new leadership brought more understanding and new strategies ? ? ? ? ? ? ? ? ? Change affects the comfort of the working environment At times, it was painful to be taken out of a comfort zone and26**having to**go**through the various stages of the**change process There is a lack of communication in advance which made it hard to adapt to change Change made one think negatively because it created more stress and tension The workload was doubled The effect of change is perceived at an emotional level The way change was introduced was not good There is too much work and change is experienced as authoritarian Management sometimes fail to consider staff opinion The findings presented in Table 4 are worth noting because it portrays participants' experience of change in general. All participants affirmed that change management is important when introducing something new in the library, but they offered different reasons for their opinion. The majority said that people do not experience change in the same way and that is why change should be managed. Change should be managed in order to get everyone on board by explaining and communicating to them what the purpose of change is so that they can have trust and be aware of what is happening. Whether communication about planned change in the library was effective, 57% of participants responded positively, 43% of participants said communication was not effective. An effective communication method mentioned by most participants included strategy meetings attended by team leaders, managers, and directors. During these meetings change visions and progress of the current change were explained and discussed. Another effective method was when library management held monthly meetings with each department where they communicated information about their vision for the library to all attending staff. It was pointed out by one participant that although library management was communicating, management did not always invite or welcome staff’s opinion or advice regarding their change plan. Besides these meetings, management also used a listserv to communicate with each and every library staff member; it was up to staff to access the listserv. The participants who felt that the communication at the library was not effective said that they had to ask in order to know, and added that communication was not received through good channels ("the grapevine"). These participants felt that the library management did not communicate in a timely fashion since they were not updated about the changes that were taking place in the library. One participant responded that more information was communicated when there was a campus visit to be expected from university management. From the findings it seems that the library management do communicate, but it is not always perceived as effective. Some of the participants specified that library management showed staff the direction that they were heading, however they believed that line managers were not communicating well to staff. One of the participants mentioned that top management insisted that all managers and heads of department communicate all information to staff directly after their meetings. From these findings this study shows that attention should be given to communication at all managerial levels in order to have good change management. Specific attention was given in the interviews to employees' motivation to adapt to technological change. The reasons for being motivated to adapt to change that surfaced from the interviews were grouped into five categories, namely, 1) motivated when the change is perceived as having great benefit, 2) when support was received from library management, 3) being self-motivated by the use of new technologies, 4) motivated by practicing intensively the use of new technology, and 5) motivated through training and workshops. The findings presented in Figure 3 show that the major reasons why participants said they adapted to change was self-motivation and when the new technology showed great benefit to the service they delivered. Participants also indicated that training and workshops motivated them to adapt to new technologies because they got to understand how a particular new system worked. It became easy for them to perform their duties after they have been trained on a particular system before it was implemented so that they could confidently assist library clients. 12 The findings correlate with the literature which found that library management must explain the importance of new technology to the staff in order to promote buy-in and support staff in the process of change, for example, using a new system. However, this study indicates that although participants do consider support from library management as an important motivation, it was second to knowing what the benefit of change entails. Benefit of change supersedes challenges; and even though participants felt initial resistance to new technology because of the challenges it posed, they felt motivated as soon as intensive practice showed positive results. This emphasises the importance of staff familiarising themselves with new technology and trying to use it. Motivation to adapt to technological change 60% 50% 40% 30% 20% 10% 0% Training and workshops Practicing intensively Self-motivated Library management Benefit Motivation Figure 3: Motivation to adapt to change The perceived benefits and challenges the participants associated with technological change became evident from the data collected during interviews. The majority of participants felt that technological change has benefitted them by improving their level of service in terms of time efficiency and professional service offering. For example, a new system for online ordering of books has greatly improved the existing online ordering system from a user- centred perspective. Another major benefit is accessibility of information, especially in the case of remote access. Some of the participants felt that technological change was making their lives easier, because they were serving people with no time limitations through the use of social media. Embedded service offering, for example, using mobile applications to offer information services via the preferred platforms of library clients, was mentioned by some participants, but only two of the participants actually offered embedded services. Two participants felt that clients were attracted by the wireless Internet access available in the library. Though this was generally perceived as technological progression, one participant raised the concern of maintaining the library's academic character as information service provider. 13 In terms of the challenges associated with technological change, frustration was expressed at the high frequency of technological change. This finding is also reflected in the literature. Mittal (2012), highlights the importance of training as a way of reducing employees' frustration due to frequent change. Participants were of the opinion that effective communication was the most important cure for overcoming resistance to change. It should be noted that the above discussion of the research findings is based on data collected as part of a cross-sectional study. The study was limited to a decentralised academic library that has gone through a merger and therefore the results can only be generalised to a similar setting and not universally to universities. Also, the empirical component of the study mostly focused on what is considered to be one of the most important characteristics of the knowledge economy, namely, relying more on new technologies to enhance service delivery. Other characteristics of the knowledge economy were discovered in the literature review but were not covered in this study. These limitations have to be noted and read with the conclusion. 5 Conclusion Change management is aimed at giving individuals2**in an organisation**the**support and**development**they require in order to accept,**understand**and**benefit from**change,**as well as efficiently manage the challenges associated with change. From the beginning of the change effort, effective communication is important to increase individual’s understanding and commitment to change, reducing resistance and confusion, and preparing them for positive and negative change outcomes (Kotter, 2007:103). This study concurs with other studies emphasising the importance of communication; library management is expected to communicate the change vision. However, it was found that although library management encouraged communication, sometimes the middle management tended to be less successful in communicating effectively the change vision to employees. Other findings of significance are that all library staff generally had a common motivation for the adoption of new technology, namely, they wanted the library to be known as an academic information service provider that delivers outstanding service. Except for being self-motivated, other factors such as training opportunities, workshops, intensive practice, and the benefit of change mostly motivated library staff to adapt to change. Training increases the motivated use of new technologies which might potentially lead to increased productivity. Follow-up trainings must be encouraged in consideration of those employees who are slower in adapting to technological change. In essence, library management must ensure that a good communication plan is prepared and followed. All employees8**affected by change**must**receive regular**feedback**about the status of change, its**effect**and**accomplishments. Communication creates confidence in the change process and also fosters mutual trust. Communication lessens the possibility of incorrect information reaching employees through "the grapevine". An aspect that was not mentioned by research participants which requires further investigation is that library clients must be included in the communication plan so that they can know what change is happening in the library, why it is happening, and the value of change – in other words, what is in it for them. In final conclusion: the benefits of change surpass its challenges. References Ahmed, A.S. (2011). 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