

Change Management in a Biopharmaceutical Company

by



Thersia Terblanche

**UNIVERSITY of the
WESTERN CAPE**

**A minithesis submitted in partial fulfilment of the requirements for the degree of
Master of Science Pharmacy Administration and Policy Regulation in the Faculty of
Natural Science, School of Pharmacy, University of the Western Cape.**

Supervisor: Dr S. Egieyeh

Degree of confidentiality: A (not confidential)

June 2020

<http://etd.uwc.ac.za/>

ABSTRACT

M.Sc. Pharmacy Administration and Policy regulation minithesis, **School of Pharmacy**, University of the Western Cape.

This study aimed to review the change management implemented in a Biopharmaceutical company in Cape Town in the light of existing literature on change management theory. Three main constructs were identified: process of change, readiness for change and climate of change.

A quantitative pencil-and-paper survey were used to explore and describe employee experience of the change management process within a single department of a biopharmaceutical company in Cape Town. Cronbach alpha coefficient confirmed internal reliability ($\alpha = 0.94$) of the questionnaire constructs. Employees across all ages reported average scores for all constructs ($M \geq 2.5 < 4$), indicating a similar experience regardless of age. A medium-strong positive correlation ($p < 0.01$; $r = 0.49$) was observed between process of change and climate of change.

Based on the findings from the literature review and empirical research, recommendations were made to improve the change management processes and experience within biopharmaceutical companies. This study not only contributes to the body of knowledge on change management literature in the biopharmaceutical context, but also provides insight to a biopharmaceutical company to improve future change management practices.

KEYWORDS

Biopharmaceutical company, Change management, Process, Readiness, Staff morale



UNIVERSITY *of the*
WESTERN CAPE

DECLARATION

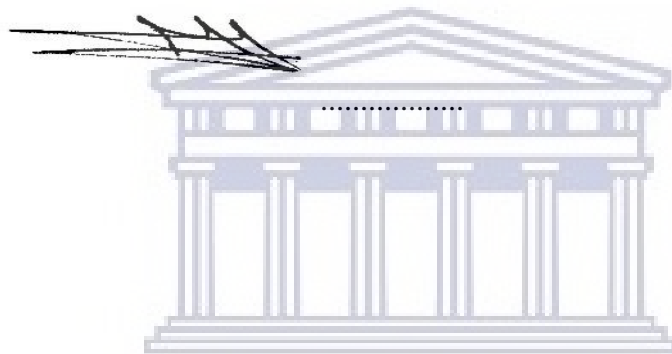
I declare that **A Review of Change Management in a Biopharmaceutical Company in Cape Town** is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Thersia Terblanche

HS 20/1/8

July 2020

Signed.....



UNIVERSITY *of the*
WESTERN CAPE

LIST OF TABLES

Table 1 Operationalisation of Objectives

Table 2.1 Comparative summary of the seven most familiar change management models and the differences between them.

Table 2.2 People and change (Tasmanian Government, 2012)

Table 2.3 Reverse-Process Implementation of Flagship Products

Table 2.4 Reverse-Process Implementation of Non-Flagship Products

Table 4.1 Factor analysis after a Varimax rotation.

Table 4.2 Comparison of Constructs

Table 4.3 Constructs by Age

Table 4.4 Construct Inter-Correlation

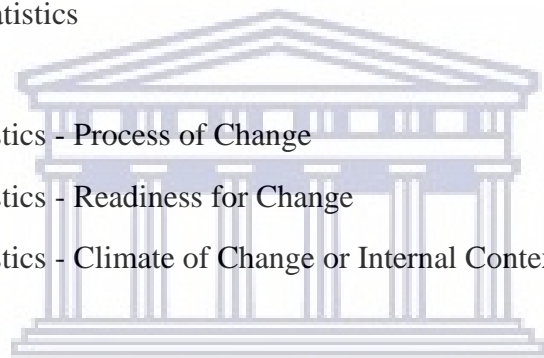
Table 4.5 Standardized Statistics

Table 4.6 Chi p-Values

Table 4.7 Reliability Statistics - Process of Change

Table 4.8 Reliability Statistics - Readiness for Change

Table 4.9 Reliability Statistics - Climate of Change or Internal Context



UNIVERSITY *of the*
WESTERN CAPE

LIST OF FIGURES

Figure 2.1 The Kübler-Ross Change Curve (Kübler, 1969)

Figure 2.2 Fisher Transition Curve (Fischer, 2012)

Figure 2.3 Change Management Best Practices



TABLE OF CONTENTS

Title Page	i
Abstract	ii
Declaration	iv
List of Tables	vi
List of Figures	vii

1. INTRODUCTION

2. LITERATURE REVIEW

- 2.1 Definition and importance of change management
- 2.2 Change management models
- 2.3 Different stages of change management
 - 2.3.1 Commercialization in a Biopharmaceutical company
 - 2.3.2 The relationship between commercialization and change management
- 2.4 Risks in change management
- 2.5 Change management success and failures
- 2.6 The role of leaders in change management
 - 2.6.1 Relationship between newly appointed managers and change management
 - 2.6.2 Characteristics and skill of effective management
- 2.7 Change management and staff
 - 2.7.1 Effect of change management on staff morale
 - 2.7.2 Relationship between management style and staff morale
- 2.8 Practical change management vs theoretical change management
- 2.9 Change management tools
 - 2.9.1 Critical discussion: Processes implemented by the Biopharmaceutical Company
- 2.10 Change Management Best Practices Guide
- 2.11 Funding
- 2.12 Conclusion

3. RESEARCH METHODOLOGY

- 3.1 Introduction
- 3.2 Method

- 3.3 Research Design
- 3.4 Data Collection Instrument
- 3.5 Sampling Description
 - 3.5.1 Population
 - 3.5.2 Selection Criteria and Sampling Method
 - 3.5.3 Sample Size and Description
- 3.6 Data Collection Method
- 3.7 Data Analysis
- 3.8 Reliability and Validity
- 3.9 Limitations
- 3.10 Ethical Considerations
- 3.11 Conclusion

4. RESEARCH RESULTS

- 4.1 Introduction
- 4.2 Reliability Analysis
- 4.3 Demographic Characteristics
- 4.4 Employees' experience of the change management process in the Biopharmaceutical company (empirical objective 1)
 - 4.4.1 Item analysis based on descriptive statistics to describe employee perception
 - 4.4.2 Comparison of constructs according to mean values
 - 4.4.3 Constructs by age groups
- 4.5 Interrelationships between the different change management constructs (empirical objective 2)
 - 4.5.1 Correlation between constructs
- 4.6 Conclusion

5. CONCLUSION, LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

- 5.1 Introduction
- 5.2 Main Theoretical findings
- 5.3 Main empirical findings
 - 5.3.1. Employee experience of change management process
 - 5.3.2 Relationships between change management constructs.
- 5.4. Concluding remarks, recommendations and limitations

5.4.1. Recommendations to improve change management experience

5.4.2 Limitations and future research direction

6. REFERENCE LIST

7. APPENDICES



UNIVERSITY *of the*
WESTERN CAPE

CHAPTER 1

INTRODUCTION

1.1. Background and motivation

HUCMI defined change management as a combined term used for all approaches to prepare, support, and assist individuals, teams, and organizations in making organizational change. Change management includes methods that redirect or redefine the application of resources, business processes, budget allocations, or other modes of operation that significantly change a company or organization. Change management is a complex process involving company employees at all levels. Naturally, people are resistant to change and could perceive the process of change management as negative which may affect staff morale (Kanter, 2012; HCMBOK Human Change Management Body of Knowledge, 2019). As an employee on senior management level of a biopharmaceutical company currently undergoing change management, the researcher aimed to investigate the change management process of the biopharmaceutical company. Based on the findings, recommendations were made to improve the change management processes and staff experience within the relevant and other biopharmaceutical companies.

Biopharmaceutical companies often supply critical and life-altering products and therefore, any changes implemented, must be concurrent with existing processes to limit or preferably avoid supply shortages. This could lead to unique challenges and additional pressure on staff during the change management process. The biopharmaceutical company in this study (hereafter referred to as TMBio) has a public-private-partnership with the South African Government to supply vaccines to South Africa. The Government owns 47,5% of the company according to Medical Brief (2019) and purchases approximately 95% of the product supplied by the company. Further to this, has a partnership with two multinational companies to supply a Hexavalent- and 13-strain pneumococcal vaccine

In addition, the two multinational companies are involved in the technical transfer and commercialization process of Hexaxim and Prevenar-13. In future, TMBio will be manufacturing, visual inspecting and packing these vaccines for distribution. In 2015 the one multinational company signed an agreement with TMBio to pack labelled, pre-filled syringes (Medical Brief, 2019; Pfizer, 2015). In 2018 they initiated the labelling and packing of the pre-

filled syringes. Formulation and filling of the syringes are currently in technical transfer and the aim is to become fully commercial by quarter three of 2020 according to the CEO of TMBio.

Limited academic literature is currently available on change management processes specific to biopharmaceutical companies. The theoretical objective of this study was therefore to review existing literature on change management theory, within and outside the scope of the biopharmaceutical context. Some processes that TMBio followed were also discussed with preliminary recommendations for improvement and future research. The literature review was followed by an empirical investigation by means of a quantitative survey to explore and describe employee experience of the change management process. Another objective of this study was to describe correlations between the main constructs of change management in a biopharmaceutical company.

Based on the findings from the literature review and empirical research, recommendations were made to improve the change management processes and experience within biopharmaceutical companies. This study not only contributes to the body of knowledge on change management literature in the Biopharmaceutical context, but also provides insight to the relevant Biopharmaceutical company to improve future change management practices. Operationalisation of objectives and structure of the thesis are as indicated in Table 1 below.

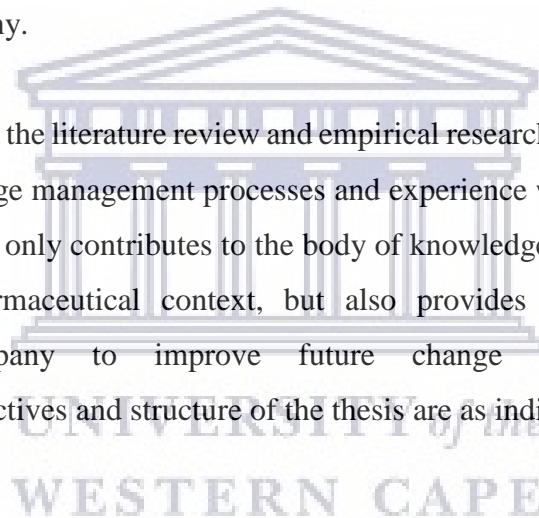


Table 1 Operationalisation of objectives and structure of thesis

Objective	Method and Analysis	Chapter
<p>Theoretical Objective</p> <p>To review existing literature on change management theory</p>	<ul style="list-style-type: none"> • Review and discussion of existing literature • Recommendations 	<p>Chapter 2</p> <p>Literature Review</p>
<p>Empirical Objectives</p> <ul style="list-style-type: none"> • To explore and describe the employees' experience of the change management process in the Biopharmaceutical company. • To determine and describe the interrelationships between the different change management constructs. 	<ul style="list-style-type: none"> • A quantitative survey applying closed ended questions were utilized. • Descriptive statistics were applied to determine the means and frequencies of the various change management constructs. • Inferential statistics were applied to calculate Pearson's correlation coefficient. 	<p>Chapter 3</p> <p>Research methodology</p> <p>Chapter 4</p> <p>Research Results</p>
		<p>Chapter 5</p> <p>Conclusions</p>

Conclusively, change management is a complex yet delicate process that requires thorough understanding thereof in order to be successfully executed. Various factors could impact the outcome and should be considered prior to, during and after its implementation. One critical factor that should always carry consideration is the human factor and its resistance to change. Understanding the dynamics behind change management could increase the success rate of the change management process, especially in a biopharmaceutical company where day-to-day processes are already intricate.

CHAPTER 2

LITERATURE REVIEW

2.1 Definition and Importance of Change Management

Change management is a critical process utilized by organizations to implement and facilitate change (Mar, 2013). Organizational change requires suitably planned and well-organized activities in order to move an organization from its present, often unfavourable state, to a future desired state (Harigopal, 2006). In the event of a new or developing company moving from project mode to fully commercial operations (as is the case with TMBio), change management is imperative. Change management comprises of a number of steps that are required to prepare, support and assist individuals and teams within an organization to successfully implement change (Harigopal, 2006). Organizational changes are required to keep a company profitable, competitive and able to timeously respond to changes in consumer demand. Change management is often required post-merger and –restructuring or after an acquisition (Mar, 2013).

Nassiri-Koopaei et al. (2014) conducted a qualitative study on an Iranian Biopharmaceutical company. From their study results, it was concluded that managerial development as well as policies and regulations were considered the primary reasons for current commercial trends. Nassiri-Koopaei et al. (2014) therefore suggested that these factors be carefully considered if successful commercialization is desired. Barsoux and Anand (2017) emphasized that leaders could identify the items that needed change by understanding three concepts: *‘the catalyst for transformation, the organization’s underlying quest, and the leadership capabilities needed to see it through.’*

The catalyst for any transformation or change management process would be those items that adds value to an organization. This involves improving efficiencies (streamlining and cost cutting) and reinvesting growth. Barsoux and Anand (2017) cautioned that attempts to streamline a business such as productivity improvements, outsourcing, divestments and restructuring could sometimes negatively impact growth.

According to Barsoux and Anand (2017), approximately 70% of all change management attempts fail. Barsoux and Anand (2017) did a study and the analysis suggested that poor

execution was not the sole reason for failed change management attempts. They emphasized that companies often misdiagnosed the issues that needed change. *“Before worrying about ‘how’ to change, executive teams need to figure out ‘what’ to change- in particular-what to change first.”* Failure does however not always imply complete failure. It often implies that targets in terms of timelines are missed or the outcome is not as planned. (Barsoux and Anand, 2017). Change management utilizes a range of tools, techniques and processes to re-evaluate and re-define the utilization of business resources (Harigopal, 2006). These resources include personnel, budget allocations and business processes.

The Human Change Management Institute (HUCMI) indicated that change management affected an organization on multiple levels. Change management not only modified the current state, but moved people from their comfort zones. Only through human change can an organization successfully implement change management (HCMBOK Human Change Management Body of Knowledge, 2019). For an organization to meet planned objectives, change must be humanized and supported until it becomes an organization’s new culture (HUCMI, 2019). People have a natural resistance towards change and it often leaves them feeling anxious and with a sense of loss of control (Kanter, 2012). Change management processes are therefore often met by resistance from staff members (HCMBOK Human Change Management Body of Knowledge, 2019). Specialists in the field agreed that it is not resistance itself that lead to failure, but how management dealt with this resistance (Dawson, 2003). Bill Wilder (2011), director of the Life Cycle Institute, mentioned that people *“generally don’t resist change. They resist being changed if they don’t know why.”* Trompenaars et al. (2003) mentioned that change initiatives often fail because aspects of corporate culture have been ignored. They further mentioned that it might not be sufficient to merely “add” the cultural component. *“Culture is to an organisation what personality is to an individual”* (Trompenaars and Woolliams, 2003). Culture does not only provide importance, direction and mobility to an organisation, but it enhances the overall ability of the organisation to deal with the challenges it might (and probably will) face. Trompenaars and Woolliams (2003) is not of the opinion that a change process can be authentic if strategic business matters and cultural values are not considered. They further argued that changing a company’s culture is a “contradiction in terms” and that cultures act to preserve themselves and protect their own existence.

2.2 Change Management Models

Bamford and Daniel (2005) stated that there were two key approaches to change management: planned and emergent. Planned change which is based on the work of Kurt Lewin, dominates the theory and practice of change management. A number of researchers recommended change models that not only proposed, but included changes within an organisation's corporate culture. Others have suggested change across national and cultural boundaries (Trompenaars and Woolliams, 2003) The majority of these models can however be criticised for two main and recurring reasons: (i) they tend to underestimate the effort required to achieve and sustain the change and (ii) they are inclined to discard everything related to the current situation in favour of a new future, thus rejecting the best of what has been achieved (Trompenaars and Woolliams, 2003)

According to Lewin's force-field theory (1947), organisations experience constant, dynamic tension between forces pushing for change and forces resisting change (Lewin, 1947). Trompenaars and Woolliams (2003) stated that it is management's responsibility to reduce the resistance to change and increase the forces for change. Under the dilemma-theory approach (Lloyd and Trompenaars, 1993), this is only a mid-ground solution. It does not consider the fact that people's resistance might increase if the pressure to change increases. In order to understand cultural change, it is important to understand that culture is defined by a set of rules and methods that has evolved and is used by a society or organization to deal with regular problems they face (Trompenaars and Hampden-Turner, 1998). Hofstede (1991) defined culture as "*the collective programming of the mind which distinguishes the members of one group or category of people from another*"

Several other change models exist that are frequently referenced in academic and popular literature and articles. They consist out of varying numbers of processes or steps and consider different factors. They even vary in approach. Kotter referred to an eight step change management process (Kotter, 2020). Huy (1999) on the other hand described a multilevel theory of emotion and change, simplified through individual EQ (emotional intelligence) and organizational attributes (emotional competence). Mar (2013) divided change management processes into four types: departmental and team -, organizational -, program - and finally

project change management. Bhasin (2018) divided change management into four stages which mainly refer to employees and the emotional change they go through.

Liu and Perrewé (2005) further divided the cognitive-emotional process: during primary appraisal individuals will look for incompatibilities and they evaluate how the change will impact them. During secondary appraisal, which follows once individuals consider the change relevant, they make sense of change and decide how it will impact them. It becomes a coping period where individuals try to control activities such as information collection and exchange of issues which sometimes results in unwanted outcomes such as counterproductive work behaviour (Bowling and Eschleman, 2010; Fox and Amichai-Hamburger, 2001). The appraisal process often results in an emotional response which is translated into a specific coping behaviour (Smith and Lazarus, 1990). A comparative summary of the seven most familiar change management models and the differences between them can be found below in Table 2.1



Table 2.1 Comparative summary of the seven most familiar change management models and the differences between them.

Change Management Models						
Lewin	McKinsey's 7S	Kotter	Nudge	ADKAR	Bridge's	Kübler-Ross
A change model that creates the perception that change is needed. It then moves toward the new, desired level of behaviour and then it solidifies the new, changed behaviour as the norm.	It is a tool that analyses a company's organizational design by looking at the 7 key internal elements.	This change model comprises of 8 overlapping steps- the first three are all about creating a climate for change. The next on engaging and enabling the organisation and the final step to implementing and sustain change.	It is a concept used in behavioural science, – economics and political theory which proposes positive reinforcement and indirect suggestions as ways to influence the behaviour and decision making of groups or individuals.	Change management model defined by an acronym that represents the five tangible and concrete outcomes that people need to achieve for lasting change.	A Transition model that highlights the stages of transition that people go through when they experience change.	Five stages of grief, proposes a sequence of emotions experienced by a dying person or a person that lost a loved one.
3 Phases	7 Internal factors	8 Steps	1 Concept	5 Factors	3 Stages	5 Stages
Unfreeze	Strategy	Create a sense of urgency	Nudging	Awareness	Ending	Denial
Move/Change	Structure	Create a guiding coalition		Desire	Losing	Anger
Freeze	System	Create a vision for change		Knowledge	Letting go	Bargaining
	Shared Values	Communicate the vision		Ability		Depression
	Style	Remove obstacles		Reinforcement		Acceptance
	Staff	Create short-term wins				
	Skills	Consolidate improvements Anchor the changes				

2.3 Different Stages of Change Management

An organization's employees will determine the rate of the change management process and also the success thereof. It is therefore critical that the change management process is well planned and followed through from the top down on a continuous basis. Effective communication with all employees is crucial during the change management process to reduce feelings of uncertainty and resistance.

During change management it is critical that the company maintains the initial momentum and enthusiasm and not get distracted from the end goal by daily tasks and workload (Sarran, Clark and Mendonca, n.d.). The company should invest in the change management process by scheduling time into operational planning to ensure that ongoing communication in the form of a "town hall" for example is maintained (Sarran, Clark and Mendonca, n.d.). Communication in the form of newsletters and e-mails alone are not sufficient. It is the author's opinion that staff need and want to engage with senior management, and more so the CEO. It gives them a sense of comfort and security and an opportunity to engage and ask questions. As this is a big step for any company and success is vital, the necessary effort and support should be provided until change has successfully been implemented and until it has become the company's new culture.

Bhasin's model (Bhasin, 2018) divided change management into four stages. The first and last stages, namely denial and acceptance, relates to the Kübler-Ross model. It diverges from the Kübler-Ross model in that resistance and exploration is replaced by anger, bargaining and depression.

The Kübler-Ross change curve

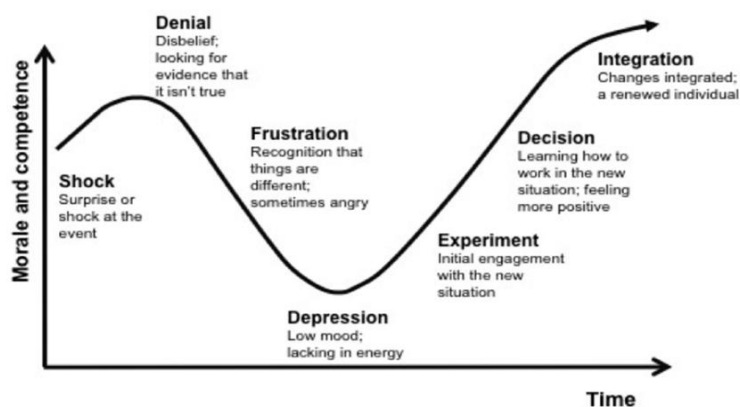


Figure 2.1 The Kübler-Ross Change Curve (Kübler, 1969)

To elaborate; Bhasin (2018) described his change model as follow:

Denial: Denial is the first stage of change management. During this stage, employees are unable to accept the fact that change is inevitable. It is associated with feelings of loss of safety and insecurity. Denial can also be the result of new responsibilities and the fact that employees are moved from their comfort zones.

The Tasmanian Government (2012) added that typical examples of denial would include statements such as: “Things were really good in the past”. “It’s not really happening”. Feelings of numbness. Everything-as-usual attitude. Refusal to hear new information and withdrawal.

They proposed the following strategy during this phase: constant provision of information. Explain to employees what to expect. Suggest actions and allow time for them to process the information. Plan and execute sessions for discussions. (Tasmanian Government, 2012)

Resistance: This is the second and critical stage in Bhasin’s model. During this stage productivity, morale and competency of employees usually decline. Employees understand and have accepted change, but they are refusing it. Resistance is commonly associated with anger and blame and can negatively affect a company and subject it to losses (Bhasin, 2018).

Trompenaars and Woolliams (2003) stated that it is management’s responsibility to reduce the resistance to change. Bhasin’s model aligns with this statement and further recommends that managers execute the following actions to reduce resistance (Bhasin, 2018):

Conduct a survey of change and initiate different projects that will help to understand the impact of change. Encourage positive feedback and acknowledge employee’s positive change in attitude. Regular brainstorming sessions and group interactions will help to address a lack of focus and the presence of fear and indecisiveness.

Following this, leaders can effectively manage resistance by listening to employee’s concerns and feelings and encouraging them to share their scepticism, motivating them to make the change and giving recognition to their feelings of fear and loss of control (Bhasin, 2018).

The Tasmanian Government (2012) mentioned that the following signs can be associated with resistance to change: anger and blame; loss and hurt; stubbornness; falls and accidents; complaining; sickness and loss of sleep; doubts about their abilities. They recommend that the following strategy be applied by the leadership team: Listen and respond to complaints and

emotional outbursts; the use of 'I'-statements; encourage employees to talk about their feelings and support them; don't tell employees to change or 'pull themselves together'.

When comparing their suggestions with the Bhasin's model, it is clear that the recommendations are the same. Leaders have to listen to staff and acknowledge their emotions. They also have to be supportive and encourage their team.

Exploration: Once employees realize that change is inevitable, they start exploring it. Although still feeling sceptic, they will look into new responsibilities. Often employees will be distracted, indecisive and have a lack of focus. With time they begin to feel more hopeful and start opening up to new ideas (Bhasin, 2018).

According to the Tasmanian Government (2012), the followings signs are symptoms of the exploration phase: "What is going to happen to me". Employees are seeing possibilities, but they are still unsure about the future. Often one will be able to recognise confusion and chaos. Employees sometimes have energy, but no focus. Employees will be clarifying goals, exploring options and learning new skills. They propose the following strategy during the Exploration phase: Focus on priorities. Provide training. Follow-up on current projects. Set short term goals and conduct brainstorming, visioning and planning sessions.

Acceptance is the final stage of Bhasin's change management model. Employees no longer resist change and it is integrated into business processes, the way of thinking and the values of the organization. Employees start showing commitment once they feel that their contributions have a positive impact. Commitment further increases productivity, morale and self-esteem of employees (Bhasin, 2018).

The Tasmanian Government (2012) described the acceptance phase as 'a commitment' and defined it with statements like: "Let's do this!" Employees usually have clear vision, focus and a plan. Teamwork, satisfaction and co-operation amongst teams are visible and they will be looking for the next challenge. They proposed the following strategy in support of this phase: Set long term goals; Concentrate on team building; Create a mission statement; Reinforce, recognize and reward positive responses to the change (Tasmanian Government, 2012).

Kotter and Schlesinger (2008) found that employees reacted in one of three ways during organizational change: passively, aggressively or honestly. The Tasmanian Government

(2012) divided employees into three groups (Table 2.2) based on how they responded to change:

Table 2.2 People and change (Tasmanian Government, 2012)

Early adaptors "Drivers" (10%)	Middle adaptors "Riders" (80%)	Late adaptors "Draggers" (10%)
Excited	Cautious	It won't affect me/us
Innovative	Convince me	It won't go ahead
Self-motivated	Play it safe	Not going to happen
Take risks	Wait and see	This won't last

Fischer (2012) used the following Figure (Figure 2.2) to describe change management; or the process of transition as he called it:

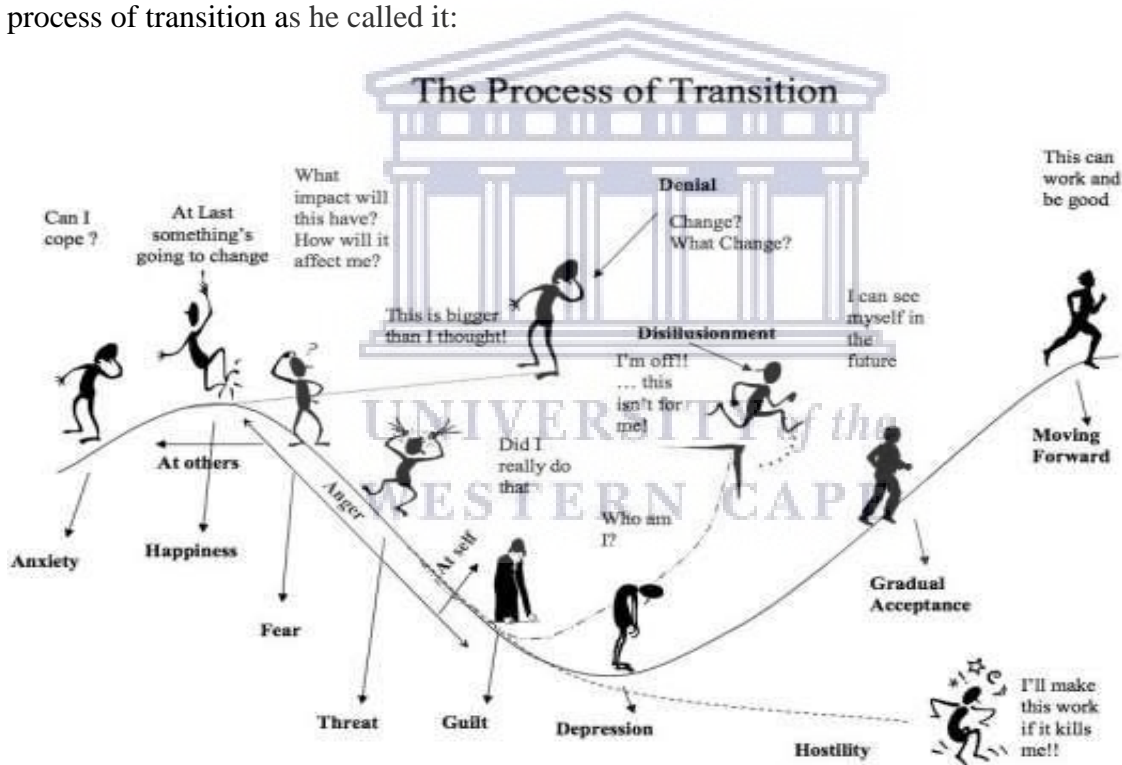


Figure 2.2 Fisher Transition Curve (Fischer, 2012)

2.3.1 Commercialization in a Biopharmaceutical Company

The aforementioned Biopharmaceutical company has a reverse-process implementation approach with regards to their flagship products. Non-flagship products follow a similar, but

limited pathway. The production unit comprises of two sections. VLP (Visual Inspection, Labelling and Packaging) and F&F (Formulation and Filling).

The two tables below demonstrate the processes followed (by phase) for the company’s flagship (Table 2.3) and non-flagship (Table 2.4) products. Some of the commercial activities in VLP run in parallel with project activities in F&F. During full commercialization, the project activities will come to an end as part thereof and only process improvements will continue.

Table 2.3 Reverse-Process Implementation of Flagship Products

	Import	Formulate	Fill	MVI	AVI	Label	Pack	Distribute	Full commercial
Phase I									
Phase II									
Phase III									
Phase IV		Project			Project				
Phase V		Project	Project		Project				
Phase VI									

Table 2.4 Reverse-Process Implementation of Non-Flagship Products

	Import	Formulate	Fill	MVI	AVI	Label	Pack	Distribute	Full commercial
Phase I									
Phase II									
Phase III									
Phase IV									

MVI= Manual Visual Inspection

AVI=Automated Visual Inspection

VLP is currently the only commercial department in the company. The aim of the change management process is therefore to fully commercialize the company by quarter three of 2020. The aforementioned Biopharmaceutical company recently implemented change management processes complemented by “Scaling Up: How a few companies make it...and why the rest don’t” (Harnish, 2014) and “Mastering the Rockefeller Habits” (Harnish, 2002). With “Scaling Up” Verne Harnish (2014) focuses on a company’s growth stage and gives step-by-step guidelines on how to grow a company. The three barriers to growth (leadership, scalable infrastructure and market dynamics) are discussed as well as ‘The 4D Framework’ which describes the four sets of habits and routines required for successful transformation. ‘The 4D Framework’ is compiled from four factors. They are drivers, demands, discipline and decisions. Harnish further references ‘The 4Foundations’ which include people, strategy, execution and cash (Harnish, 2014).

“Mastering the Rockefeller Habits” outlines eight practical steps a company should implement in order to reinforce their culture (Harnish, 2002). Rockefeller Habits further describes three themes that are required in order to successfully grow a business: priorities, data and rhythm. Harnish (2002) emphasizes the importance of developing systems, structure and processes to be able to handle the complexity of the company’s development. Harnish (2002) proposes that the company’s goals are clearly displayed and that all staff know what the company’s end goal and vision is. Smart numbers (key metrics) and critical numbers should be tracked, measured and highly visible. Harnish further dives into the characteristics required for a successful executive team and the impact on the company if they do not meet these minimum requirements.

To the knowledge of the researcher, limited academic and popular literature is currently available on change management processes specific to Biopharmaceutical companies. Biopharmaceutical products are sophisticated and elegant. Sophistication and elegance come at great cost however. Otto, Santagostino and Schrader (2014) indicated that large-scale biotech-manufacturing facilities require between \$200 million and \$500 million to build, compared with similar-scale small-molecule facilities that may cost just \$30 million to \$100 million. In addition, Biopharmaceutical companies can take between four and five years to build. These facilities are costly to run with long process times, low yields, expensive raw materials and a requirement for a team of highly skilled experts to operate them (Otto, Santagostino, Schrader, 2014). The efficacy and safety of Biopharmaceutical drugs, combined with their unique ability to address formerly untreatable conditions, allow for

Biopharmaceutical companies to command high prices (Otto, Santagostino, Schrader, 2014). These factors alone emphasize the importance of successful change management processes and prevention of any additional, unnecessary cost.

2.3.2 The Relationship between Commercialization and Change Management

Commercialization is the process of making new products or production methods available to the market by introducing it into commerce. According to Chiesa and Frattini (2010) commercialization is a critical part of innovation, but it is often poorly managed. In order to become fully commercial, a company would have to go through change management (whether small or large scale), in order to prepare their processes and people to deliver their products and services effectively. Daft (2008) described the process at the attainment of an organization's goals through effective and efficient planning, organizing, leading and the proper control of organizational resources.

2.4 Risks in Change Management

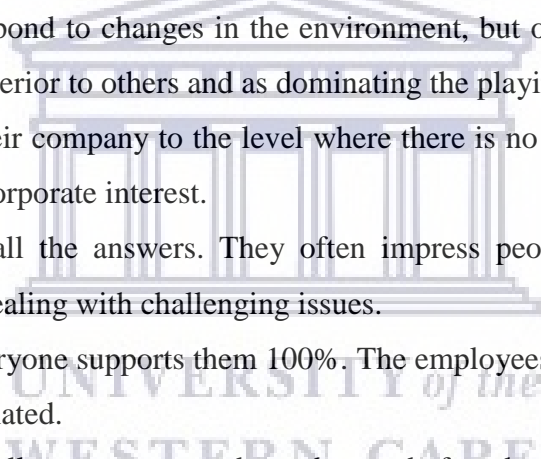
Risk has two angles of approach: The risks associated with implementing change and the risks associated with not implementing change. Aljohani and Qureshi (2019) mentioned that one of the responsibilities of a good project manager is to ensure that risk management is utilized to manage the risk of changing requirements. During the planning phase risk must be defined, estimated and managed (Davey and Parker, 2015)

2.5 Change Management success and failures

Several factors can impact and determine the outcome of an organization's change management process. One factor that often receives too little attention is the "people" component of change (Keller and Aiken, 2008). Change can be perceived as successful when it is able to connect job satisfaction, people and productivity within an organization (Aljohani, 2016). Finkelstein (2003) studied several businesses over a period of 6 years and found that most organizations failed during four major business events: i) dealing with innovation and change, ii) addressing new competitive pressures, iii) new ventures and iv) managing mergers and acquisitions. Gill (2003) claimed that change management programmes usually failed

because of poor management: poor monitoring and control, poor planning, a lack of know-how and resources and incompatible corporate practices and policies. Finkelstein (2003) claims that four destructive behavioural patterns are usually responsible for these organizational failures. They are: (i) Unsound executive mind-sets that distorts an organizations perception of reality, (ii) attitudes that support these inaccurate and often delusional perceptions of reality, (iii) failure of communication systems developed to handle potentially urgent information and (iv) leadership qualities that keep a company's executives from correcting their course and thus inhibiting the organizations progress.

Finkelstein (2003) further identified a third component that could destroy a company. He called them "*7 Habits of Spectacularly Unsuccessful Executives*". These executives have the following qualities that are ironically enough, widely celebrated and admired in the business world:

- 
- (i) They do not just respond to changes in the environment, but often see themselves and their company as superior to others and as dominating the playing field.
 - (ii) They identify with their company to the level where there is no clear boundary between their personal- and corporate interest.
 - (iii) They usually have all the answers. They often impress people with the speed and decisiveness when dealing with challenging issues.
 - (iv) They ensure that everyone supports them 100%. The employees that are not supportive, will simply be eliminated.
 - (v) They are usually excellent company ambassadors and often devote the largest portion of their time and efforts developing the company's image.
 - (vi) They never hesitate to return to strategies and tactics that made their company successful in the first place.
 - (vii) They treat dauntingly difficult situations as temporary obstacles that can be removed or overcome.

Change management efforts that are purely managerial in nature result in a lack of dedicated effort, resistance to change and conflict between functional areas (Gill, 2003). Finkelstein (2003) developed a "Checklist to Avoid Bad Managers". This checklist could help to identify some key concerns for those looking at a management team or business. (Appendix B)

2.6 The Role of Leaders in Change Management

Leadership as a component of change management has been discussed extensively in several academic articles and journals. The author will therefore not elaborate on it in this document, but nevertheless felt that it had to be mentioned as leadership is a critical component of change management, especially when considering the morale of employees.

2.6.1 Relationship between newly appointed managers and change management

According to Quain (2019) the choice of leadership and leadership style in the change management process is crucial. Quain (2019) further mentioned that the chosen leadership style can have a profound impact, not only on the culture of a business, but also the success or failure thereof. Leadership is not limited to decision making. It ultimately determines the culture of the company, how you handle problems and manage challenges that can potentially destabilize the company and put it at risk. Trompenaars et al. (2016) believe that change management without leaders is possible, but extremely difficult. Change management has to do with changing the culture of an organization and the role of the leader is crucial as they represent the culture as the main creator thereof (Trompenaars et al., 2016). Daft (2008) mentioned that an organization that wants to become and/or remain healthy, motivated and productive needs management with solid skills and action that will be able to weather any crisis.

Quain (2019) referenced three leadership styles: authoritarian leadership, participative leadership and delegative leadership. Authoritarian leadership dictates from the top down. Although this leadership style tends to give direction, it discourages employees in the sense that they are not able to make any suggestions or contributions. It is detrimental to the morale of a company.

The participative (democratic) leadership style, encourages employees to make contributions and suggestions. This leadership style encourages cohesiveness and morale. The downside is that it tends to move decisions to the supervisor and team leader level. Leadership only gets involved in major decisions. Often decisions are stalled (“paralysis-by-analysis”)

The delegative leadership style is mainly recognized by a very laidback style. Employees do as they please, they make their own decisions, determine their own standards and direction. The leadership doesn't make any major decisions. All decisions are passed on to team leaders

and supervisors. This leadership style lacks direction and is often recognized by confusion and a lack of accountability.

Research proposed several change leaders with diverse, but complimentary competencies working together (Battilana and Casciaro, 2012). Change leaders focus on different aspects when managing change depending on their competencies. Those with task competencies would as a rule spend more time on mobilizing and evaluating activities whilst those with better interpersonal skills are more likely to focus on communication activities. The social skills of change leaders can contribute to new meanings and means for action in planned change, for example, where change agents are able to create new collective identities and managing meanings ascribed to them (Creed and Scully, 2011). It is noted however that the literature appears to be inconsistent and inconclusive with regards to the skills and attributes of effective change agents (McCormack et al., 2013).

2.6.2 Characteristics and skill of effective management

Gill (2003) mentioned that change had to be well managed and that it required effective leadership to be successfully introduced and sustained. Bass and Steidlmeier (1999) argued that for a company to be truly transformational, leadership must be grounded in moral fundamentals. Katz (1955) claimed that managers must possess three different skill sets in order to be effective. They are technical-, conceptual- and human skills. **Technical skills** are related to a person's expertise in a specific area. They are the "*languages of the task*". The more senior the manager, the less technical skills are required. This skill set is more relevant to lower level managers. **Conceptual skills** however are the ability to see the broader picture. The ability to see the company as a whole and understand how all the different departments fit and feed into each other. It has more to do with strategic planning and becomes more weighted as an element for senior to top management. It requires the ability to think, process information and plan. **Human skills** are the ability of an individual to relate to others. It further includes a manager's ability to motivate, facilitate, lead, communicate and resolve conflict. A manager with human skill allows subordinates to speak without fear of humiliation and encourages participation. This is the one skill that makes certain team members great and others not. It is also the skill that allow some managers to excel and others to fail (Katz, 1955).

As managers develop, they usually gain the technical skill first, followed by the human skill and then conceptual skill. Often, when managers fail, it can be traced back to failure of one of

these skills (Katz, 1955). Other attributes that cause leaders to fail are poor communication skill including failure to listen, treating people as objects to be used and not persons, suppressing non-conforming viewpoints and the inability to build a team based on mutual respect, trust, honesty, transparency and transparency (Daft, 2008; Finkelstein, 2003). Daft (2008) claimed that companies that weather a crisis the best, are the ones where managers prioritise people and their feelings.

Kouzes and Posner (2002) claimed that exemplary leaders make use of the following five practices that set them apart from other leaders: (i) they lead by example and set the standard (ii) they inspire a shared vision and make a difference (iii) they challenge the process (iv) they are confident and enable others to act and take charge and (v) they encourage people's hearts and care on a deeper level.

According to Gill (2003) effective leaders require well developed emotional intelligence (EQ). That is the ability to understand oneself and other people, the ability to display self-control and –confidence and most importantly, respond to others in appropriate, acceptable ways. Leaders that are emotionally intelligent will usually apply personal power opposed to positional power or authority. Emotionally intelligent leaders win people's hearts (Gill, 2003).

2.7 Change Management and Staff

2.7.1 Effect of Change Management on Staff Morale

A study was done by Nutakki, Reddy and Balan (2015) to determine the relationship between change management, the psychological contract of employees and organizational citizenship behaviour. A psychological contract is defined as “*a belief of the employee about the mutual obligations/expectations between him/herself and the employer*” (Rousseau, 1989). These beliefs are made based on the perception of the promise made by the employer (pay/promotions/training) and the employee in return, is obliged to give their time and skill (Rousseau and Tijoriwala, 1998).

When an organization undergoes change management, negotiations around the contract is usually observed (Lo and Aryee, 2003; Turnley and Feldman, 1998). During change initiatives, one can expect and observe changes around the psychological contract. (Brown and Harvey 2006). Employees sometimes perceive a breach of contract during change initiatives. The can occur in the form of downsizing and layoffs (Turnley and Feldmann, 1998). When employees

feel that their employer has failed to fulfil the promises they made or neglects to meet the expectations, the psychological contract is also breached (Morrison & Robinson, 1997).

If changes are unpredictable and made frequently, it creates a feeling of anxiety amongst employees (Rafferty and Griffin, 2006) as well as insecurity (Saunders and Thornhill, 2003). According to Schalk and Freese (1997) it further affects the fulfilment of psychological contract. Change can affect an employee's vision of the future (Van den Heuvel and Schalk, 2009). Nutakki, Reddy and Balan (2015) thus argued that planning and implementation of changes will have an impact on the fulfilment of psychological contract.

When employers display inconsistency in terms of their actions and promises, it creates a feeling of distrust and a lack of confidence with employees (Robinson, 1996). The breach in psychological contract affects the attitudes and behaviour of employees resulting in decreased commitment, job dissatisfaction and lowered citizenship behaviours (Raja, Johns and Ntalianis, 2004; Coyle-Shapiro and Kessler, 2000). When employees believe that their employer is treating them fairly, they will automatically exhibit increased citizenship behavior (Smith, Organ and Near, 1983)

Based on the findings of Nutakki, Reddy and Balan (2015), it can be deduced that the leadership of change management processes has a significant impact on the organizational citizenship behavior and morale of employees. Different stages of the change management process lead to different strategies and approaches, which in turn affects the approach towards employees, their trust and ultimately fulfilment of obligations/expectations. This process then brings about a change in the fulfilment of psychological contracts of employees. In this study, change implementation as found to have a significant impact on the psychological contract of employees. This study further showed that changes in the psychological contract affected the organizational citizenship behavior of employees. Fair treatment of employees has a profound impact on the organizational citizenship behavior of employees. The psychological contract of employees plays a key role in achieving successful management of changes in the organization (Nutakki, Reddy and Balan, 2015)

2.7.2 Relationship between Management Style and Staff Morale

A confident and effective leader will empower his/her subordinates. That in effect means giving them knowledge, skills, opportunity, freedom, self-confidence and resources to manage

themselves and be accountable (Gill, 2003). When people feel empowered they are more motivated, which in turn leads to increased morale. Gill (2003) further mentioned that empowerment is about involving people in the change management process. *“People are much more inclined to support what they help to create”*. Effective leaders motivate and inspire people to do what needs to be done (Gill, 2003)

2.8 Practical Change Management vs Theoretical Change Management

What we learn in theory and what happens in practice with regards to change management, are two vastly separated issues. That can be deduced from the change management success rate. Jick (1991a) developed a strategic level model to guide and assist the implementation of major organisational change processes. He mentioned that the implementation of this process is a balance of both art and science. How the process is implemented is as important as the ‘what’ that is implemented (Jick, 1991a). Hayes (2018) mentioned that it is critical that people who are involved in the change management process, have employable skills. It is a combination of academic-, interpersonal- and workplace skills as well as effective performance. Academic skills in essence mean that they should be able to apply theory to practice, they should be able to collect and interpret information and they should have the ability to think critically. Workplace skill include commercial awareness, problem solving abilities and an appreciation of the systemic nature of work organizations. They should also be able to plan. Interpersonal skills include communication, helping and facilitating, the ability to influence, persuade and negotiate, the ability to lead and motivate and the ability to works with groups and teams. Responsible behaviour and the ability to learn is also recommended (Hayes, 2018). These management and leadership traits correspond with the leadership traits discussed earlier.

2.9 Change Management Tools

Nassiri-Koopaei et al. (2014) applied the NIS (National Innovation System) as model for their study design. They concluded their study by advising the utilization of this model in order to achieve effective commercialization solutions.

NIS can be defined as the *“network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies”* (Freeman,

1995). On the other hand, Nelson (1993) defined NIS as “*a set of institutions whose interactions determine the innovative performance ... of national firms.*” In order for the various factors to promote innovation, there should be strong links between them. These links are built and strengthened by trust (Chung, 2002). The OECD (2019) characterized these links as joint research, personnel exchanges, cross-patenting and the purchase of equipment.

Wojtecki and Peters (2000) reiterated that stress, anxiety and fear affected human’s cognitive ability and ultimately impairs their ability to function, let alone perform. During change management these are typical emotions employees would experience. Wojtecki and Peters (2000) claims that people’s ability to process information under stress is reduced by 80%. Over and above this, they might have difficulty hearing, understanding and retaining information and they generally understand information up to four grades lower than their level of education. When under stress, people are prone to react to perceived threats rather than to reality and lastly, employees want to know that you care before they care what you know. Wojtecki and Peters (2000) emphasized the importance of extensive communication. This not only helps to put everyone on the same page, but it ensures that everyone knows in which direction they are moving and how their behaviour will contribute towards or hamper the process. By frequent communication the above mentioned negative emotions are eliminated and therefore not only gives employees the ability to perform, but ensure that change management is ultimately successful. The purpose of change management communication is to constantly create awareness of the change goal by recommitting employees along the way. (Sarran, Clark and Mendonca, n.d.) proposed the following change management communication tools:

Initial group meetings. These meetings should be interactive and encourage discussions specific to the change management process (Wojtecki and Peters, 2000). Leaders should use these meetings to deliver the change message: The reason for change management; the company’s vision for the future; how the team’s input will impact the bigger process as well as what will be changing and what not. Issues, concerns and ideas should be discussed including the team’s specific behaviour change plan and next steps (forms of communication).

Regularly scheduled 1:1 meetings. Each employee’s emotional state and commitment to the process should be evaluated and discussed. Potential issues should be identified and raised and an effort made to get and keep every individual on board. These meetings are valuable, especially for more introverted employees who do not wish to speak up in a group.

Ongoing group updates. These meetings should be utilized to convey any changes to the change management plan and updates on the behavioural plan should also be shared.

It is the author's opinion that communication in the form of a town hall is critical during the change management process. Although meetings as mentioned above are imperative on team level, meetings held by EXCO are needed to align all teams within the company to reach a united goal. In order for the team to feel that the situation is under control, these meetings are advised. These meetings are also useful to unite the company and eliminate "us and them" mentality.

2.9.1 Critical discussion: Processes implemented by the Biopharmaceutical Company

In the afore mentioned Biopharmaceutical company, various communication tools were utilized. Some were changed and others were newly implemented.

As a commercial department, VLP operated in two separate buildings of which one consisted out of a ground and first floor. Due to the complexity and nature of operations, the team utilized Whatsapp as a method of communication. The department manager, pharmacists, specialists, supervisors, team leaders and cold room coordinators use this application to communicate and coordinate activities. During the change management process Microsoft Teams was introduced. It is a great tool that can be used for multiple group activities and it can further be used to follow up on pending actions. Initially, training was only rolled out to certain identified members in the company. Roll out and implementation started with top management. This complicated matters as the manager (and author) of the commercial department had to manage information horizontally and vertically with two separate applications. Some of the VLP members had outdated phones (as they used their private phones and data) and was therefore unable to utilize the Teams app when training was eventually rolled out to departmental levels.

The company rolled out Office 365 to replace Microsoft Office and Outlook. With cloud and abilities this is a great tool to use. The downside was that there were limited licenses available and again complicated activities within the commercial department.

EXCO implemented small group discussions where information was provided. "Coffee with EXCO". It was a fantastic initiative in the author's opinion. It gave employees the opportunity to directly ask EXCO questions with regards to the change management process, raise concerns and give suggestions. From a commercial point of view, attending these meetings as production

staff posed to be a challenge due to production volumes and targets that had to be met. As the only department in the company that generated revenue at the time, it was difficult for VLP to identify and allocate free time for these activities, even though they were very important.

The company further implemented SAP (Systems Applications and Products). It was implemented in stages due to the availability and cost of licenses. The system was a definite requirement as the company had no system tying up production, warehouse and supply chain activities at the time. SAP has grown in popularity worldwide over recent months and years.

In 2008, as part of their project objectives, GSK introduced SAP EH&S to comply with EHS regulations. (Magnette et al., 2015) SAP has also been deployed to all major Vaccines Manufacturing sites. More recently SAP has been deployed to GSK Pharma and Consumer plants.

HR implemented “Crucial Conversations”. This was a tool that could be used to have difficult, but essential conversations. During the change management process there will be differences in opinion or ways of working. This tool taught and enabled staff and managers to have these conversations (vertically and horizontally) in a professional, respectful and calm manner. This was a great initiative that could also be applied in one’s personal life.

In the author’s opinion, a tool that can and should be used for the production areas are TV’s or screens. Relevant change information and highlights of meetings could be displayed to keep production staff informed and up to date. Repeating important information could also assist to embed it in people’s minds and remind them of the importance thereof.

In terms of visual aids, production performance boards were implemented to display the performance of each department during meetings. An OHS&A board was also implemented to display any injury on duties, the amount of accidents and the total amount of accident free days. Heath et al. (2011) makes reference to “Success Metrics Overviews” When implementing change, it is important to have success metrics. Success metrics can be defined as the metrics that assist management to determine the overall health and achievement of change. Success matrix help to evaluate, indicate and measure performance based on change initiative goals. (Heath et al., 2011). Success metrics are quantitative data obtained from customer satisfaction (customer complaints), financial performance (cost, revenue), operational- (rework, lead time, hands-off) and supplier performance (reliability and durability), product- and/or service quality as well as public outreach (number of people impacted). This information must be provided to all employees. Transparency builds trust.

Departmental (Team) and management meetings called “Huddles” were implemented in the Biopharmaceutical company as part of the change management process. These meeting combined with the success matrix overviews (performance boards) are useful in managing overall processes. Care must be taken in terms of the amount of time spent on these meetings and duplication of information. Huddles are a good platform to raise and identify potential production and other issues (Warehouse, QA, EHS, Engineering). It is imperative that issues raised in these meetings are addressed and resolved in order to ensure smooth transition of processes and ultimately a successful change management process.

2.10 Change Management Best Practices Guide

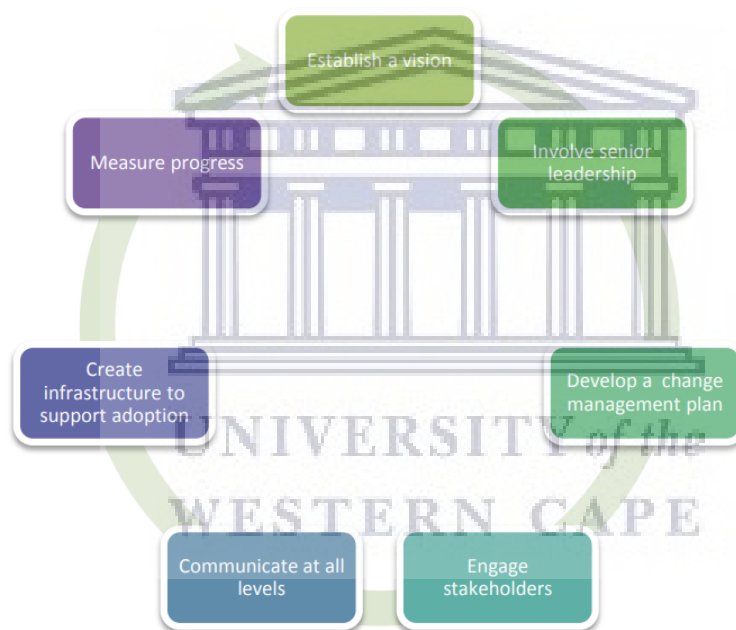


Figure 2.3 Change Management Best Practices

The ultimate objective of an organization should be “to incorporate the principles of change management into all organizational initiatives” in order “to produce effective, long-lasting and sustainable change.” (USAID, 2015).

Private and public organizations are distinctly different in their processes and functions (By and Macleod 2010; McNulty and Ferlie 2004). One can therefore anticipate that change management processes for the one is not applicable to the other. Even though organizational change in the public sector is as important as in the private sector, it is usually not the area of focus (Stewart and Kringas 2003). With public entities, management’s research is usually

focused on change at regional- or national level (Pollitt and Bouckaert, 2004). Studies are also focused on the content of change rather than the process through which change was implemented (Kuipers et al., 2014). A limitation of public entity research is that management seldom evaluates the change management outcomes against the implementation plan (Kuipers et al., 2014). As part of the change outcome, researchers usually focus on employee support rather than the evaluation key performance indicators post-change implementation (Herold, Fedor, Caldwell and Liu, 2008; Van der Voet, 2014). There is consensus that leadership is crucial for change in both the private and public sector (Fernandez and Pitts 2007)

2.11 Funding

Very few if any Biopharmaceutical companies have the required financial and technical resources to develop a new product from the start through to commercial phase on its own. Therefore funding is required. Venture capital has identified and funded several promising health discoveries and assisted in commercializing them of the past few years (Wheeler and Berkley, 2001). It inspired the public sector to address shortages with regards to affordable treatment and disease prevention of developing countries. Nassiri-Koopaei et al. (2014) mentioned that venture capitalist funding in Iran was either functioning poorly or was absent. From their interviews, almost all interviewees emphasized the importance of these funds.

The Pharmaceutical Biotechnology Industry in France invested EUR 15 million in seven biotechnology firms. They expected a return on investment of approximately EUR 60 million (Rochepeau, 2004). **The CDC (Centre for Disease Control and Prevention)** including other research organizations and major investors, promoted 15 venture and seed capital funds. Their portfolios included 40 organizations specialising in life sciences. These companies were set up to receive bonuses from public research in 88% of all cases. 78% of them also benefited from public incubator facilities (Rochepeau, 2004). WHO is gradually working with the private for-profit sector more and more following early successes with a number of high-profile partnerships (Buse and Waxman, 2001). One of these initiatives include the development of Malaria vaccines in partnership with PATH and GSK (WHO, 2019; PATH/MVI, 2016)

Seed capital funds usually invest in innovative companies with a high-tech agenda and high growth potential. The investment usually happens when the organization is first created or during the initial financing stage (Rochepeau, 2004). According to Rochepeau (2004) venture capital investment in France amounted to EUR 758 million in 2002, compared to EUR 1 900 million in the UK, EUR 969 million in Germany and USD 9 500 million in the USA.

BIOAM is the national seed capital fund for biotechnology (BIOAM - Sofiprotéol, Partenaire stratégique de l'agro-industrie et de l'agroalimentaire, 2000; Rochepeau, 2004).

They subcontracted approximately 30% of this expenditure during 2000. In 2002 biotechnology investment funds provided EUR 169 million in France alone of which 6% was invested in new organizations compared with 23% in 2000/2001 and EUR 31 million during the first half of 2003 (Rochepeau, 2004).

The Bill and Melinda Gates foundation regularly supports and funds various initiatives in Africa as was the case with the aforementioned Biopharmaceutical company. Due to research and development challenges however, funding through the Gates foundation was withdrawn. The Biopharmaceutical company in question has since engaged with various other organizations in search of funding relief (Gates Foundation, 2016).

The relevant Biopharmaceutical company has a public-private-partnership with the South African Government to supply vaccines to South Africa. The Government owns 47,5% of the company according to Medical Brief (2019). The government purchases approximately 95% of the product supplied by the company. Apart from that, the organization has a partnership with Sanofi to supply a Hexavalent vaccine (Hexaxim) and Pfizer to supply a 13-strain pneumococcal vaccine (Prevenar 13) (Medical Brief, 2019).

Sanofi and Pfizer are further involved in the tech transfer and commercialization process of Hexaxim and Prevenar 13. In future the relevant Biopharmaceutical company will be manufacturing, visual inspecting and packing these vaccines for distribution. In 2015 Pfizer signed an agreement with the relevant Biopharmaceutical company to pack labelled, pre-filled syringes (Medical Brief, 2019; Pfizer, 2015). In 2018 they initiated the labelling and packing of the pre-filled syringes. Formulation and filling of the syringes are currently in tech transfer and the aim is to become fully commercial by Q3 of 2020 according to the CEO of the Biopharmaceutical company (Medical Brief, 2019).

2.12 Conclusion

Prior to embarking on a change management journey, proper planning and research is required to ensure a well-executed process. Various change management models and tools are available to choose from as well as guidelines for managing a successful change management process. Further to this, the right leadership mix is imperative if success is desired. Within the literature, various guidelines are available for selecting the best leadership style. Certain leadership qualities within selected leaders are strongly advised and emphasize is placed on the detrimental outcome of appointing the wrong leadership style.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The aim of this research was to investigate the change management process implemented by the relevant Biopharmaceutical company. The literature review was followed by an empirical investigation by means of a quantitative survey to explore and describe employee experience of the change management process. In this chapter, each phase of the research methodology to successfully reach the empirical objectives are addressed.

3.2 Method

Methodology can be defined as the precise and theoretical analysis of methods applied to a specific field of study. It includes concepts such as patterns, segments, theoretical models and qualitative or quantitative techniques (Irny and Rose, 2005). Closed ended questions were utilized using a quantitative survey and respondents had only one opportunity to complete the questionnaire. Descriptive statistics were applied to determine the means and frequencies of the various change management constructs and inferential statistics were applied to calculate Pearson's correlation coefficient.

3.3 Research Design

Research design is a set of techniques and procedures applied in collecting and analysing measures of the variables specified in the hypothesis. There are different types of research design. They are: (i) descriptive or statistical research; (ii) exploratory research; (iii) explanatory or analytical research and (iv) experimental research (Akhtar, 2016). Descriptive statistics were utilized as part of this research to describe the change management process in a biopharmaceutical company.

3.4 Data Collection Instrument

Various data collection methods are available for utilization. They include group administration of questionnaires, postal surveys, telephonic surveys and face-to-face surveys (Maree & Pietersen, 2007). The researcher chose a survey as instrument to collect primary data firstly, because numerical data was required to answer empirical objectives through descriptive statistics and correlation and secondly, because of time constraints.

As part of this research, the author decided to use a pre-validated and reliable survey questionnaire. This survey questionnaire was extracted from a published article

“Organizational Change Questionnaire – Climate of Change, Processes, and Readiness: Development of a New Instrument” published by Bouckenooghe, Devos and Van den Broeck (2009). The authors found a strong correlation between (i) the climate of change (internal circumstances); (ii) how change is dealt with and (iii) the level of readiness for change (Bouckenooghe, Devos and Van den Broeck, 2009). The authors developed the survey questionnaire to have a valid and reliable assessment tool available for practitioners to measure readiness for change.

Anastasi (1982), Hinkin (1998) and Nunnally (1978) mentioned that a quantitative survey instrument should meet three standards of validity: (i) content - (ii) construct - and (iii) criterion-related validity. The studies Bouckenooghe, Devos and Van den Broeck (2009) conducted, encompassed four studies. The first study was designed to investigate the content validity of the items that were developed for the questionnaire. Their second study involved an initial test of the factor structure and the construct validity of these items. The third study explored whether the scales that arose from the second study could be replicated in a separate sample. The scales were also evaluated for convergent validity, discriminant validity, known-groups validity, share group variance and concurrent validity. The fourth and last study was the initial phase toward the development on a translated English-from-Dutch version. The survey questionnaire comprised out of three main constructs of which each was sub-divided, all with acceptable reliability scores ($\alpha \geq 0.7$):

- (i) Process of Change
 - Quality of Change Communication
 - Participation
 - Attitude of Top Management
 - Support by Supervisors
- (ii) Readiness for Change
 - Emotional Readiness for Change
 - Cognitive Readiness for Change
 - Intentional Readiness for Change
- (iii) Climate of Change or Internal Context
 - Trust in Leadership
 - Politicking
 - Cohesion

There were 56 questions in total of which three covered the demographics of respondents. In this study, a paper-based survey was used due to practical constraints and IT's decision to no longer assist with the survey. A survey was the preferred method of choice to collect numerical data due to time and monetary constraints. A Likert-scale (Likert, Roslow & Murphy, 1993) was used to measure all items related to the main constructs of this study (1 = strongly disagree 5 = strongly agree).

3.5 Sampling Description

3.5.1 Population

The target population for any survey includes the complete set of units for which survey data is required to make inferences. In short, the target population defines the elements for which the results of the survey are meant to generalize. Defining the study objectives are the first step in designing a survey and defining the target population (Lavrakas, 2008).

The target population must be clearly defined, as the characterization determines whether sampled cases are eligible for a survey or not. The geographic and temporal characteristics of the target population should be delineated and types of units included. Sometimes the target population is restricted to exclude population members that are difficult or impossible to interview (Lavrakas, 2008).

For this research, the entire Biopharmaceutical company (350 employees) was identified as research population. The researcher obtained permission from EXCO and HR to proceed with the research and arranged with the company's IT department to distribute the survey and process the results. The researcher unfortunately resigned from the company since and IT withdrew their offer to assist with the survey. Due to limited access to company employees, the researcher was obligated to limit the survey to the commercial department (VLP).

3.5.2 Selection Criteria and Sampling Method

According to Maree and Pietersen (2007) there are two key categories of sampling methods. They are probability and non-probability sampling methods. Probability methods apply principles of the probability-theory and randomness whereas non-probability methods do not. Probability samples can therefore accurately generalise the population, whereas this is not true for non-probability sampling (Maree and Pietersen, 2007).

Probability sampling is classified into four groups. They are (i) simple random sampling; (ii) systematic sampling; (iii) stratified sampling and (iv) cluster sampling. Non-probability sampling is usually applied where time and money is limited, the measuring instrument needs to be evaluated, the population is challenging to find and preliminary studies have to be executed in the development stage of a survey. Non-probability sampling methods include (i) convenience sampling; (ii) quota sampling; (iii) snowball sampling and purposive sampling (Maree and Pietersen, 2007). A sample of convenience was chosen as sampling method for this research due to time and monetary constraints.

3.5.3 Sample Size and description

The sample size is a central feature of any empirical study. The objective is to accurately make deductions from a sample regarding a population. “In order to generalize from a random sample and avoid sampling errors or biases, a random sample must be of adequate size” (Taherdoost, 2017). Although larger sample sizes reduce sampling error, it reduces at a decreasing rate. Numerous statistical formulas are available for defining the sample size (Taherdoost, 2017). Maree and Pietersen (2007) emphasized the criticality of an adequate sample size and mentioned that larger sample sizes are more representative of the population and more accurate. Three factors should be considered when determining the sample size: (i) nature of statistical analysis planned; (ii) accuracy of results required and (iii) characteristics of the population (Maree and Pietersen, 2007). The questionnaire was distributed amongst all 50 employees from the commercial department in the afore mentioned Biopharmaceutical company. Only 24 respondents completed the survey (n = 24). The completion rate was 48%.

3.6 Data collection method

The survey questionnaire (Appendix 2) which was extracted from a published article “Organizational Change Questionnaire – Climate of Change, Processes, and Readiness: Development of a New Instrument” published by Bouckenoghe, Devos and Van den Broeck (2009) comprised of three main constructs as mentioned before and 56 questions in total. Respondents had a single opportunity to complete the questionnaire and completion of the questionnaire was 100% voluntary and anonymous. The survey was conducted in English as this is the official language medium for South Africa. Due to the limitations of this study, a paper based survey questionnaire, utilizing questions with multiple-choice responses and a 5 point “Likert-type scale” was applied. Likert, Roslow and Murphy (1993) defined it as scale where one (1) is indicative of a ‘Strongly Disagree’ opinion and five (5) of a ‘Strongly Agree’

opinion. The Likert scale does not involve the use of a judging group and was found to be consistently more reliable than the original method of scoring. If the scores obtained from two methods correlate highly (median $r = 0.88$) it indicates that they are essentially measuring the same thing (Likert, Roslow and Murphy, 1993)

The advantage of using a paper based survey was that all the employees within the commercial department could participate. Due to the nature of pharmaceutical operations, operators usually have limited access to computers. This was also the case with the operators within the commercial department (The commercial department was the only department generating an income for the company). Only three computers service approximately 35 operators, making an electronic survey in this department specifically time-consuming and impractical. Disadvantages included the increased time required to process the raw data and the cost of stationery required to prepare the hard copies of the questionnaire.

Electronic questionnaires are still preferred as they have more benefits as highlighted by (Hohwü et al., 2013). They include (i) cost savings in terms of stationery as the questionnaire is emailed to respondents; (ii) respondents can either respond online to a link or return the questionnaire via mail; (iii) respondents are able to complete the questionnaire in the privacy of their office and (iv) the time frame allows employees to carefully ponder their responses.

3.7 Data analysis

Sharma (2018) defined data analysis as “the process of developing answers to questions through the examination and interpretation of data”. The analytic process comprises of a few basic steps. They are (i) identifying the problems; (ii) determining the availability of suitable and appropriate data; (iii) deciding on appropriate methods for answering the relevant questions and (iv) applying the methods and evaluating, summarizing and communicating the results (Sharma, 2018).

Analytical results highlight the effectiveness of data sources by explaining relevant issues. In addition, data analysis plays an important role in data quality assessment by emphasizing data quality issues in each survey. Analysis therefor influences future improvements to the survey (Sharma, 2018). Exploratory data analysis includes the analysis of data errors and describing data using summary statistics and graphical methods (descriptive statistics) (Sharma, 2018). Statistical analysis was conducted by a statistician using the Statistical Package for Social

Sciences (SPSS) version 23 and Microsoft EXCEL-STAT. The raw data was analysed by means of descriptive statistics such as standard deviations, means and skewness. A Cronbach alpha coefficient (α) evaluated the internal consistency and reliability of the variables and survey questions and Pearson correlation coefficients were used to assess the relationship between the variables and survey questions. An r-value (where r is the correlation coefficient) indicates the strength of the relationship. Values of “r” closer to one indicates stronger relationships and the closer the two variables are related. This is true for both signs: that is: positive-positive and negative-negative.

3.8 Reliability and Validity

The aim of a solid survey design is to limit variables in answers as far as possible so that your data is clean and reliable without restraining the truth or skewing authenticity. Before framing the actual questionnaire, the researcher must consider three factors. They include the information required (identify the parameters you want to measure), the target respondents (identify the target population and their geographical location) and the choice of interviewing techniques (define your research questions, do a secondary data review and identify data gaps) (Sreejesh, Mohapatra and Anusree, 2013). A good questionnaire must be valid, reliable, interesting, and succinct (Ng, 2006)

Validity refers to the ability of an instrument to measure what it is supposed to measure (Maree and Pietersen, 2007). There are four types of validity according to Maree and Pietersen (2007). They are (i) Face Validity; (ii) Content Validity; (iii) Construct Validity and (iv) Criterion Validity. In this study, questionnaire constructs and items used were previously validated (Bouckenooghe, Devos and Van den Broeck, 2009). Validity was furthermore strengthened by keeping the questionnaire design simple and limited to testing the research constructs only.

Reliability refers to the ability of an instrument to obtain the same test results when used at different times with different subjects from the same population (Maree and Pietersen, 2007). There are different types of reliability. They are (i) test-retest reliability; (ii) equivalent form reliability; (iii) split –half reliability and (iv) internal reliability or consistency. Internal validity was applied in this research using Cronbach’s alpha coefficient. If there is a strong correlation between two items, their internal consistency will be high. Cronbach’s alpha coefficient will be closer to one, usually around 0,9. A Cronbach’s alpha value of 0,8 indicates good reliability and 0,7 an acceptable reliability (Maree and Pietersen, 2007).

3.9 Limitations

An electronic survey to collect primary data was planned and approved by EXCO. However, when the author resigned from the company, the IT department withdrew their offer of assistance and a paper based survey had to be conducted in order to collect primary data. The initial population for the survey included all 350 employees of the Biopharmaceutical company. Since the author no longer had access to the entire company, data was only collected from the commercial department (VLP). The questionnaire was distributed to all 50 employees in the commercial department and included pharmacists, specialists, supervisors, team leaders and operators. Only 24 employees completed the survey. Due to the non-availability of computers to operators, a paper based survey had to be conducted.

3.10 Ethical Considerations

Authorization was obtained from the Biopharmaceutical company prior to executing the research and survey. Permission was granted in writing via e-mail by EXCO and HR. A paper-based survey was conducted, and the survey was voluntary and anonymous. Informed consent was obtained from each participant and no vulnerable individuals were included in the survey. No personal information except demographics were requested. Further to this, the research was presented to the UWC ethics committee (HSSREC) and approved (HS 20/1/8)

3.11 Conclusion

Prior to the study and survey, various factors had to be considered to obtain accurate information. These included the research objective, -design and -instruments. Other critical factors including data analysis, reliability and validity had to be determined. The methodology followed in this study to reach the empirical objectives, was covered in this chapter.

CHAPTER 4

RESEARCH RESULTS

4.1. Introduction

The aim of this research was to investigate change management in a Biopharmaceutical company. The research results, reliability and validity of the data and statistical significance relevant to this investigation are discussed in this chapter. In addition, the statistical analysis and observations are used to present the results, describe findings and address the empirical objectives. Respondents rated their experience of the change management process on a five point Likert scale. These questions were divided into three main constructs. (i) Process of Change; (ii) Readiness for Change and (iii) Climate of Change or Internal Context. Descriptive statistics and inferential statistics by means of correlation analyses were used to test and describe inter-relationships between constructs.

4.2. Reliability analysis

The three constructs (Table 4.1) with item clustering are based on the previous reliable and valid instrument as adopted in this study (Bouckennooghe, Devos and Van den Broeck, 2009). In total, 18 items passed the initial chi-squared testing for significance, which were used to determine whether there is a statistically significant difference between the expected frequencies and the observed frequencies in each of the questions in relation to the relevant construct. Consequently, Cronbach alpha analysis was performed to test the internal reliability of the instrument. All constructs proved to be reliable with excellent Cronbach alpha scores ($\alpha=0.94$). Values of Cronbach's alpha that is greater than 0.7 indicate a high degree of correlation amongst the items and confirm that the items together measure the dimension. The cut-off value for intern-item correlations is 0.15; less than this, and the items are not well correlated and don't measure the same construct or idea very well.

Table 4.1 Reliability analysis

Constructs and items	Mean	Standardized Cronbach Alpha and Inter-item correlations
Process of change	3,23	0,94
11. Corporate management team clearly explains the necessity of the change.	3,18	0,51
12. Changes are always discussed with all people concerned.	3,29	0,72
17. Staff members were consulted about the reasons for change.	3,19	0,16
21. The way change is implemented leaves little room for personal input.	3,16	-0,03
22. Staff members are sufficiently involved in the implementation of the changes by our department's senior managers.	3,33	0,27
23. Corporate management team has a positive vision of the future.	3,17	0,50
25. Corporate management team supports the change process unconditionally.	3,23	0,25
29. My manager does not seem very keen to help me find a solution if I have a problem.	3,32	0,18
30. If I experience any problems, I can always turn on my manager for help.	3,18	0,42
Climate of change or internal context	3,11	0,94
34. Corporate management team fulfils its promises.	2,74	0,51
38. In our organization, favouritism is an important way to achieve something.	2,53	0,44
39. It is difficult to ask help from my colleagues.	2,93	0,59
43. My department is very open.	2,81	0,47
Readiness for change	2,75	0,94
47. I am somewhat resistant to change.	3,25	0,66
49. I think that most changes will have a negative effect on the clients we serve.	3,35	0,39
50. Plans for future improvement will not come too much.	3,21	0,63
55. I am willing to make a significant contribution to the change.	2,88	0,43
56. I am willing to put energy into the process of change.	2,85	0,42

4.3 Demographic Characteristics

The commercial department of the Biopharmaceutical company (VLP) has 50 employees in total. Twenty-four of the 50 employees responded to the survey. All respondents were South African citizens and the sample consisted of more males (70,83%) than females (29,17%). The sample mostly consisted of respondents in the age groups 32-38 years (37,50%) and 26-31

years (33,33%), followed by a minority in the older age group of 39 to 55 years (16,67%); and a younger age group between the ages of 18 to 25 (12,50%).

4.4. Employees' experience of the change management process in the Biopharmaceutical company (empirical objective 1)

Empirical objective one – to explore and describe employee's experience of the change management process in the Biopharmaceutical company – is addressed in this section by means of descriptive data.

4.4.1. Item analysis based on descriptive statistics to describe employee perception

For the process of change constructs, all questionnaire items were rated as average ($M \geq 2.5 < 4$), indicated in Table 4.2 below. Considering the climate of change or internal context, all items were rated as average ($M \geq 2.5 < 4$), except for question 39, which in this case, with a mean score of 2.21 indicates that the sample did not experience difficulty asking for help. Most questionnaire items were rated as average for the readiness for change construct. However, interesting to observe that questions 55 and 56, which relates to a personal commitment, were rated as good ($M > 4$), which, in this case portrays a positive attitude from staff.

The majority of the sample agreed or strongly agreed to be willing to make a significant contribution (83.33%) and put energy (83.34%) into the process. However, there were some uncertainty about the effectiveness and future impact of improvements, evident with more than half of the sample (54.17%) being indecisive about question 50. Further to this, only half of the sample (50%) strongly disagreed or disagreed to be somewhat resistant to change (Table 4.2.), with the other half of the sample indecisive or perhaps not ready for change.

4.4.2 Comparison of constructs according to mean values

In Table 4.3. the mean values of each construct are indicated. The sample rated process of change, readiness for change and climate of change/internal context as average ($M \geq 2.5 < 4$). Although no constructs were rated as poor, the average rating across all constructs indicates that the change management process can be improved as respondents did not experience the

process as overwhelmingly positive and perhaps hesitant to voice their opinion about the overall change management experience.



UNIVERSITY *of the*
WESTERN CAPE

Table 4.2 Descriptive statistics of individual questionnaire items

Constructs and items								
Process of Change	n	Mean	Df	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				1	2	3	4	5
				%	%	%	%	%
11. Corporate management team clearly explains the necessity of the change.	24	3,63	4,00	0,00	4,17	33,33	58,33	4,17
12. Changes are always discussed with all people concerned.	24	2,71	4,00	20,83	29,17	20,83	16,67	12,50
17. Staff members were consulted about the reasons for change.	24	3,54	4,00	4,17	8,33	20,83	62,50	4,17
21. The way change is implemented leaves little room for personal input.	24	3,75	4,00	0,00	12,50	20,83	45,83	20,83
22. Staff members are sufficiently involved in the implementation of the changes by our department's senior managers.	24	2,42	4,00	16,67	37,50	33,33	12,50	0,00
23. Corporate management team has a positive vision of the future.	24	3,67	4,00	0,00	16,67	16,67	50,00	16,67
Climate of change or internal context	n	Mean	Df	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				1	2	3	4	5
				%	%	%	%	%
34. Corporate management team fulfils its promises.	24	2,79	4,00	4,17	25,00	58,33	12,50	0,00
38. In our organization, favouritism is an important way to achieve something.	24	3,42	4,00	12,50	0,00	45,83	16,67	25,00
39. It is difficult to ask help from my colleagues.	24	2,21	4,00	12,50	0,00	45,83	16,67	25,00
43. My department is very open.	24	2,58	4,00	20,83	25,00	29,17	25,00	0,00
Readiness for change	n	Mean	Df	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				1	2	3	4	5
				%	%	%	%	%
47. I am somewhat resistant to change.	24	2,54	4,00	12,50	37,50	33,33	16,67	0,00
49. I think that most changes will have a negative effect on the clients we serve.	24	2,13	4,00	25,00	45,83	25,00	0,00	4,17
50. Plans for future improvement will not come too much.	24	2,71	4,00	8,33	25,00	54,17	12,50	0,00
55. I am willing to make a significant contribution to the change.	24	4,04	4,00	0,00	0,00	16,67	62,50	20,83
56. I am willing to put energy into the process of change.	24	4,13	4,00	0,00	0,00	16,67	54,17	29,17

Interpretation of means: <2.5 = poor agreement; ≥2.5<4 = average agreement; ≥4 = good agreement. Df = degrees of agreement

Table 4.3 Comparison of Constructs

COMPARISON OF CONSTRUCTS					
	n	Min	Max	Mean	Standard Deviation
Process of Change	24	1,00	5,00	3,10	1,05
Readiness for Change	24	1,00	5,00	3,15	1,10
Climate of Change or Internal Context	24	1,00	5,00	3,24	1,01

Interpretation of means: <2.5 = poor agreement; $\geq 2.5 < 4$ = average agreement; ≥ 4 = good agreement.

4.4.3 Constructs by age groups

A further breakdown of the age of respondents were calculated and summarized in Table 4.4 below. Across all age groups, all constructs were rated as average ($M \geq 2.5 < 4$), indicating that the change management process was experienced in a similar way regardless of age. Although within the average range, it is interesting to note that the lowest mean score ($M = 2.82$) was observed for the youngest age group concerning readiness for change, most likely due to a lack of work experience in general.

Table 4.4 Constructs by age groups

CONSTRUCTS BY AGE				
	Age Group	n	Mean	Standard Deviation
Process of Change	18-25	3	3,31	0,75
	26-31	8	3,00	1,14
	32-38	9	3,11	1,02
	39-55+	4	3,10	1,09
Total		24		
	Age Group	n	Mean	Standard Deviation
Readiness for Change	18-25	3	2,82	0,92
	26-31	8	3,15	1,28
	32-38	9	3,30	0,95
	39-55+	4	3,07	1,11
Total		24		
	Age Group	n	Mean	Standard Deviation
Climate of Change or Internal Context	18-25	3	3,08	0,87
	26-31	8	3,35	0,98
	32-38	9	3,23	1,02
	39-55+	4	3,19	1,12
Total		24		

Interpretation of means: <2.5 = poor; $\geq 2.5 < 4$ = average; ≥ 4 = good.

4.5 Interrelationships between the different change management constructs (empirical objective 2)

In this section, the interrelations between the three relevant change management constructs of this study are discussed using inferential statistics by means of correlation analysis.

4.5.1 Correlation between constructs

Table 4.5 below depicts the inter-correlation between the three constructs. Although statistically significant ($p < 0.01$), there were no correlations observed between readiness for change and process of change as well as readiness for change and climate of change/internal context. There was, however, a medium to strong positive correlation observed between process of change and climate of change/internal context ($p < 0.01$; $r = 0.49$). This is an important, yet somewhat anticipated finding, as improvements to the process of change can lead to an enhanced perception of the climate of change amongst employees.

Table 4.5 Construct Inter-Correlation

CONSTRUCT INTER-CORRELATION ($p < 0.01$)				
		Process of Change	Readiness for Change	Climate of Change or Internal Context
Process of Change	Pearson Correlation	1		
Readiness for Change	Pearson Correlation	-0,02	1	
Climate of Change or Internal Context	Pearson Correlation	0,49	-0,06	1

Interpretation of r-values ($p < 0.01$): 0.1 = weak; 0.3 = medium; 0.5=strong.

4.6. Conclusion

This chapter presented the research findings of the empirical objectives. In general, the questionnaire showed good internal reliability. Respondents mostly perceived the process of change management as average, or were somewhat indecisive, indicating opportunity for improvement across all processes. Based on an item-analysis of means and frequencies, questions with the highest agreement scores were those relevant to actions the employees had to perform on their own. Most of the employees were trying to make the changes work regardless of the uncertainties about the process and future impact of the changes made. Mean

scores for all three main constructs – process of change, readiness for change and climate of change, were similar (average) across all age groups. Correlation analysis confirmed a medium-strong relationship between process of change and climate of change/internal context ($p < 0.01$; $r = 0.49$). Therefore, improvements to the process of change can lead to an enhanced perception of the climate of change amongst employees.



CHAPTER 5

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

5.1. Introduction

The researcher aimed to investigate the change management process of a Biopharmaceutical company. The theoretical objective of this study was to review existing literature on change management theory. The literature review was followed by an empirical investigation by means of a quantitative survey to explore and describe employee experience of the change management process. Furthermore, relationships between constructs of change management were described by correlations analysis. Based on the findings from the literature review and empirical research, recommendations are made in this chapter to improve the change management processes and experience within Biopharmaceutical companies.

5.2. Main theoretical findings

In the literature review, processes implemented by the Biopharmaceutical company was critically discussed and compared to previously published and popular literature. Based on a subjective analysis by the researcher, it appeared as if the company has lost momentum in terms of the change management process. A loss of momentum can potentially impact the commercial target dates. This is, however, a common phenomenon with change management processes and companies are advised to maintain the initial momentum and enthusiasm throughout the process of change management.

5.3. Main empirical findings

A previously validated questionnaire was used in this study, with three main constructs: progress of change management, readiness for change and climate of change or internal context. All constructs had acceptable internal reliability scores. A total of 24 respondents within a single department (VLP) participated.

5.3.1. *Employee experience of change management process*

From the statistical analysis the following deductions were made:

- **Construct One (Progress of Change Management):** With regards to the progress of the change management process to date, employees across all age groups were

somewhat indecisive about the progress of change management ($M \geq 2.5 < 4$). All questionnaire items were indicated to be “average”, with an overall “average” mean score for the progress of change management construct.

- **Construct Two (Readiness for Change):** Employees across all age groups were somewhat indecisive about the readiness for change ($M \geq 2.5 < 4$). However, individual questions relating to a personal commitment, were rated as good ($M > 4$), which, in this case portrays a positive attitude from staff. Only half of the sample (50%) strongly disagreed or disagreed to be somewhat resistant to change while more than half of the sample were indecisive about the effectiveness and future impact of improvements.
- **Construct Three (Climate of Change or Internal Context):** Employees across all age groups were somewhat indecisive about the climate of change or internal context ($M \geq 2.5 < 4$).

5.3.2 Relationships between change management constructs.

A medium to strong positive correlation was observed between process of change and climate of change/internal context ($p < 0.01$; $r = 0.49$). This is an important, yet somewhat anticipated finding, as improvements to the process of change can lead to an enhanced perception of the climate of change amongst employees. No other significant relationships were observed.

5.4. Concluding remarks, recommendations and limitations

In general, the respondents appeared indecisive about their experiences of the change management process at the Biopharmaceutical company. A lot questions were rated as “average” which could indicate hesitancy to voice their opinions about the change management process, which should be a matter of concern and further investigation. What is evident though, is that individual questionnaire items relating to staff commitment and willingness were rated high. Also, more than half of the sample indicated to be indecisive about the future impact of changes made which could be detrimental for staff morale and retention on the long-term.

Based on the research findings, also drawing on literature and personal experience, some recommendations can be made to improve employee experience of change management. These recommendations mostly include building trust through good leadership and communication to ultimately build staff morale and retain loyal and highly skilled employees.

5.4.1. Recommendations to improve change management experience

Trust can be built by management, whether junior or senior, by being fair, consistent, transparent, honest and reliable. Favouritism usually destroys team morale and does not add value to team dynamics and should be avoided at all cost. Honesty is also crucial for building a team's morale. Leaders must do what they said they are going to do. Employees should also have the opportunity to voice their opinions. Strong leaders will not feel intimidated by non-favourable answers and would welcome input from a range of staff members. It is furthermore advised that a third neutral party is involved that will engage with staff to determine the matters of concern.

Other recommendations include increased engagement by EXCO in terms of communication. In order to retain momentum with the change management process this is imperative. It is not solely the function of HR to engage with staff with regards to the change management process. Senior management has a significant responsibility to ensure that a favourable new company culture is developed and instilled where staff morale and -retention is high. Staff retention is a good indicator of a high morale. In order to motivate and retain highly skilled employees, it is crucial to have them motivated and committed, realising the positive impact of the change management on the long-term. In a highly skilled environment like Biopharmaceuticals, staff loss due to a lack of belief in the change management process and leaders can be detrimental to the success of a company. The ability to do strategic planning in terms of staff and processes is vital to keep the company successful, especially when planning to scale to full commercial operations, as in the case of the Biopharmaceutical company in this study. In a highly complex and skilled environment, it is crucial to match skill and position. Leaders who have the ability and insight to understand the processes and staff abilities are crucial.

5.4.2 Limitations and future research direction

Due the small sample size, the results of this study cannot be generalised to the organisation as a whole. This survey was only conducted in the commercial department and therefore does not represent the general feeling in the company. Furthermore, in a digital age, employees might have been discouraged by a pencil-and-paper survey. The initial plan was not to utilise a pencil-and-paper survey. However, after the company's IT department could not assist with distributing an online survey, as initially undertook, a pencil-and-paper survey was used due to time and monetary limitations. Therefore, the author proposes that the company does a larger scale online survey across all departments to determine the overall impact and experience of

the change management process. All employees must be encouraged to participate and the importance of the survey must be carefully explained. If employees however have trust issues, they will potentially not part-take out of fear of the consequence. In order for the above mentioned Biopharmaceutical company to have a successful change management process and positive start to commercialization, the author advises that the above mentioned concerns be addressed and corrected.



REFERENCE LIST

Akhtar, Inaam. (2016). Research Design.

Al-Ali, A., Singh, S., Al-Nahyan, M. and Sohal, A., 2017. Change management through leadership: the mediating role of organizational culture. *International Journal of Organizational Analysis*, 25(4), pp.723-739.

Aljohani, M., 2016. Change Management. *International Journal of Scientific and Technology Research*, [online] 5(5), pp.319-323. Available at: <<http://www.ijstr.org/final-print/may2016/Change-Management.pdf>> [Accessed 3 May 2020].

Aljohani, M. and Qureshi, R., 2019. Proposed Risk Management Model to Handle Changing Requirements. *International Journal of Education and Management Engineering*, [online] 5, pp.18-25. Available at: <<http://www.mecs-press.net/ijem>> [Accessed 12 April 2020].

Ayhan, M., Aydin, M. and Öztemel, E., 2013. A multi-agent based approach for change management in manufacturing enterprises. *Journal of Intelligent Manufacturing*, [online] 26(5), pp.975-988. Available at: <https://www.researchgate.net/publication/257581298_A_multi-agent_based_approach_for_change_management_in_manufacturing_enterprises> [Accessed 30 July 2019].

Bamford, D. and Daniel, S., 2005. A case study of change management effectiveness within the NHS. *Journal of Change Management*, [online] 5(4), pp.391-406. Available at: <<https://www.tandfonline.com/doi/abs/10.1080/14697010500287360>> [Accessed 12 April 2020].

Barsoux, J. and Anand, N., 2017. What Everyone Gets Wrong About Change Management. [online] Harvard Business Review. Available at: <<https://hbr.org/2017/11/what-everyone-gets-wrong-about-change-management>> [Accessed 26 April 2020].

Bass, B. and Steidlmeier, P., 1999. Ethics, character, and authentic transformational leadership behavior. *The Leadership Quarterly*, [online] 10(2), pp.181-217. Available at: <<https://www.studocu.com/my/document/universiti-teknologi-mara/leadership-talent-management/other/ethics-character-and-authentic-transformational-leadership-behavior/5646878/view>> [Accessed 8 October 2019].

Battilana, J. and Casciaro, T., 2012. Change Agents, Networks, and Institutions: A Contingency Theory of Organizational Change. *Academy of Management Journal*, [online] 55(2), pp.381-398. Available at: <https://www.researchgate.net/publication/276182820_Change_Agents_Networks_and_Institutions_A_Contingency_Theory_of_Organizational_Change> [Accessed 9 October 2019].

Bhasin, H., 2018. Change Management - The 4 Stages of Change Management. [online] Marketing91. Available at: <<https://www.marketing91.com/change-management/>> [Accessed 15 July 2019].

Medical Brief. 2019. Biovac to Start Local Production of Sanofi and Pfizer Vaccines - Medical Brief. [online] Available at: <<https://www.medicalbrief.co.za/archives/biovac-start-local-production-sanofi-pfizer-vaccines/>> [Accessed 20 May 2020].

Bouckenooghe, D., Devos, G. and Van den Broeck, H., 2009. Organizational Change Questionnaire—Climate of Change, Processes, and Readiness: Development of a New Instrument. *The Journal of Psychology*, 143(6), pp.559-599.

Bowling, N. and Eschleman, K., 2010. Employee personality as a moderator of the relationships between work stressors and counterproductive work behavior. *Journal of Occupational Health Psychology*, 15(1), pp.91-103.

Brown, D. and Harvey, D., 2006. *An Experimental Approach to Organization Development*. 7th ed. Upper Saddle River, N.J: Pearson Prentice Hall.

Brown, K., Waterhouse, J. and Flynn, C., 2003. Change Management Practices - Is A Hybrid Model A Better Alternative For Public Sector Agencies? *International Journal of Public Sector Management*, [online] 16(3), pp.230-241. Available at: <<https://eprints.qut.edu.au/4741/1/4741.pdf>> [Accessed 6 February 2020].

Buse, K. and Waxman, A., 2001. Public-Private Health Partnerships: A Strategy for WHO. [online] PubMed. Available at: <<https://pubmed.ncbi.nlm.nih.gov/11545332/>> [Accessed 17 May 2020].

By, R. and Macleod, C., 2010. *Managing Organizational Change in Public Services*. 1st ed. London: Routledge.

Comuzzi, M. and Parhizkar, M., 2017. A methodology for enterprise systems post-implementation change management. *Industrial Management & Data Systems*, [online] 117(10), pp.2241-2262. Available at: <<https://www.semanticscholar.org/paper/A-methodology-for-enterprise-systems-change-Comuzzi-Parhizkar/fd8798c471fd304fa04005572989e947b01b2c0e>> [Accessed 6 October 2019].

Cook, S., Macaulay, S. and Coldicott, H., 2004. *Change Management Excellence*. 1st ed. London: Kogan Page, p.224.

Coyle-Shapiro, J. and Kessler, I., 2000. Consequences of the psychological contract for the employment relationship: a large scale survey. *The Journal of Management Studies*, [online] 37(7), pp.904-930. Available at: <https://www.academia.edu/18324267/Consequences_Of_The_Psychological_Contract_For_The_Employment_Relationship_A_Large_Scale_Survey_> [Accessed 6 May 2020].

Creed, W. and Scully, M., 2011. Songs of ourselves: Employees' deployment of social identity in workplace encounters. *Journal of Management Inquiry*, 20(4), pp.408-429.

Chiesa, V. and Frattini, F., 2010. Commercializing technological innovation: Learning from failures in high-tech markets. *Journal of Product Innovation Management*, [online] 28, pp.437-454. Available at: <<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1540-5885.2011.00818.x>> [Accessed 13 April 2020].

Chung, S., 2002. Building a national innovation system through regional innovation systems. *Technovation*, 22(8), pp.485-491.

Daft, R., 2008. *New Era of Management*. 2nd ed. New York: Thompson South Western.

Davey, B. and R. Parker, K., 2015. Requirements Elicitation Problems: A Literature Analysis. *Issues in Informing Science and Information Technology*, 12, pp.071-082.

Dawson, P., 2003. *Organisational Change*. London: Routledge.

De Vos, A. and Strydom, H., 2005. *Research at The Grass Roots*. 3rd ed. Pretoria: van Schaik.

Fernandez, S. and Pitts, D., 2007. Under What Conditions Do Public Managers Favor and Pursue Organizational Change? *The American Review of Public Administration*, [online]

37(3), pp.324-341. Available at:
<<https://journals.sagepub.com/doi/10.1177/0275074006293467>> [Accessed 14 May 2020].

Finkelstein, S., 2003. *Why Smart Executives Fail*. New York: Portfolio.

Finkelstein, S., 2003. Seven habits of spectacularly unsuccessful people. *Business Strategy Review*, 14(4), pp.39-50.

Fisher, J., 2012. *The Process of Transition*. [online] Available at:
<http://www.dpac.tas.gov.au/divisions/ssmo/change_management/transition_and_change>
[Accessed 20 October 2019].

Fox, S. and Amichai-Hamburger, Y., 2001. The power of emotional appeals in promoting organizational change programs. *The Academy of Management Executive*, [online] 15(4), pp.88-94. Available at: <<https://journals.aom.org/doi/abs/10.5465/ame.2001.5897664>> [Accessed 2 May 2020].

Freeman, C., 1995. The National System of Innovation in Historical Perspective. *Cambridge Journal of Economics*, 19, pp.5-24.

Bill and Melinda Gates Foundation, 2016. *Production Economics for Vaccines*. 2016.. [online] Available at:
<https://docs.gatesfoundation.org/Documents/Production_Economics_Vaccines_2016.pdf>
[Accessed 21 May 2020].

Gill, R., 2003. Change management- or change leadership?. *Journal of Change Management*, [online] 3(4), p.307. Available at:
<https://www.researchgate.net/publication/240237705_Change_management_-_Or_change_leadership> [Accessed 15 May 2020].

Harigopal, K., 2006. Management of Organizational Change: Leveraging Transformation. 2nd ed. New Delhi: Response Books.

Harnish, V., 2002. Mastering The Rockefeller Habits. 1st ed. Virginia: Gazelles.

Harnish, V., 2014. Scaling up. 1st ed. Virginia: Gazelles.

Hayes, J., 2018. The Theory and Practice of Change Management. 5th ed. London: Palgrave Macmillan.

Heath, R., 2011. External Organizational Rhetoric: Bridging Management and Sociopolitical Discourse. *Management Communication Quarterly*, 25(3), pp.415-435.

Herold, D., Fedor, D., Caldwell, S. and Liu, Y., 2008. The effects of transformational and change leadership on employees' commitment to a change: A multilevel study. *Journal of Applied Psychology*, [online] 93(2), pp.346-357. Available at: <<https://pubmed.ncbi.nlm.nih.gov/18361637/>> [Accessed 23 April 2020].

Hofstede, G., 1991. Cultures and Organizations: Software of The Mind. London, New York: McGraw-Hill.

Hohwü, L., Lyshol, H., Gissler, M., Jonsson, S., Petzold, M. and Obel, C., 2013. Web-Based Versus Traditional Paper Questionnaires: A Mixed-Mode Survey with a Nordic Perspective. *Journal of Medical Internet Research*, 15(8), p. e173.

Human Change Management Institute. 2020. HCMBOK Human Change Management Body of Knowledge. [online] Available at: <<https://www.hucmi.com/en/hcmbok>> [Accessed 15 July 2019].

Huy, Q., 1999. Emotional capability, emotional intelligence and radical change. *Academy of Management Review*, 24(2), pp.325-345.

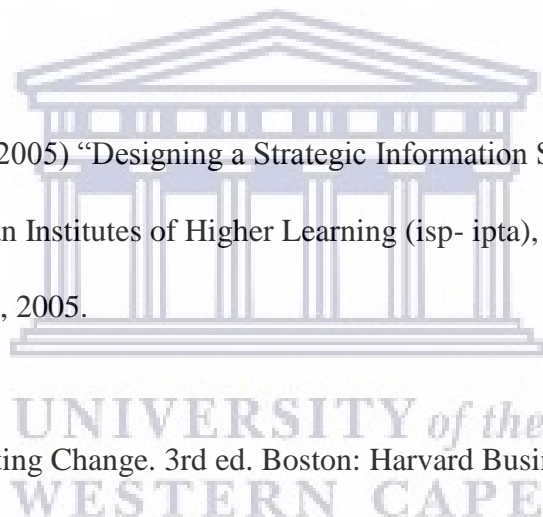
Ibe, O., 2014. Introduction to Descriptive Statistics. *Fundamentals of Applied Probability and Random Processes*, [online] pp.253-274. Available at: <<https://www.sciencedirect.com/science/article/pii/B9780128008522000080>> [Accessed 27 May 2020].

Irny, S.I. and Rose, A.A. (2005) "Designing a Strategic Information Systems Planning Methodology for Malaysian Institutes of Higher Learning (isp- ipta), *Issues in Information System*, Volume VI, No. 1, 2005.

Jick, T., 1991a. *Implementing Change*. 3rd ed. Boston: Harvard Business School Press.

Kanter, R., 2012. Ten Reasons People Resist Change. [online] *Harvard Business Review*. Available at: <<https://hbr.org/2012/09/ten-reasons-people-resist-chang>> [Accessed 26 May 2020].

Katz, R., 1955. *Skills of an Effective Administrator*. Harvard Business Review Press, p.88 pages.



Keller, S. and Aiken, C., 2008. The Inconvenient Truth_About_Change_Management. [online] McKinsey and Company. Available at: <<https://aascu.org/corporatepartnership/McKinseyReport2.pdf>> [Accessed 12 May 2020].

Kotter, J., 2020. The 8-Step Process for Leading Change | Dr. John Kotter. [online] Kotter. Available at: <<https://www.kotterinc.com/8-steps-process-for-leading-change/>> [Accessed 17 July 2019].

Kotter, J. and Schlesinger, L., 2008. Choosing strategies for change. Harvard Business Review, 86(7/8), pp.130-139.

Kouzes, J. and Posner, B., 2002. The Leadership Challenge. 3rd ed. San Francisco: Jossey-Bass.

Kubler, R.E., 1969. On Death and Dying. Vol. 22 No.4, New York: Macmillan, pp.45-49.

Kuipers, B., Higgs, M., Kickert, W., Tummers, L., Grandia, J. and Van der Voet, J., 2013. The Management of Change in Public organizations: A Literature Review. Public Administration, [online] 92(1), pp.1-20. Available at: <<https://onlinelibrary.wiley.com/doi/abs/10.1111/padm.12040>> [Accessed 18 September 2019].

Lavrakas, P., 2008. Target Population. Encyclopaedia of Survey Research Methods, [online] Available at: <<https://methods.sagepub.com/reference/encyclopedia-of-survey-research-methods/n571.xml>> [Accessed 1 June 2020].

Lewin, K., 1947. Resolving Social Conflicts Selected Papers On Group Dynamics. 1st ed. New York: Harper.

Libaers, D., Hicks, D. and Porter, A., 2016. A taxonomy of small firm technology commercialization. *Industrial and Corporate Change*, [online] 25(3), pp.371-405. Available at: <https://www.researchgate.net/publication/43327974_A_taxonomy_of_small_firm_technology_commercialization> [Accessed 19 July 2019].

Likert, R., Roslow, S. and Murphy, G., 1993. A simple and reliable method of scoring the Thurston attitude scales. *Personnel Psychology*, [online] 46(3), pp.689-690. Available at: <<https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1744-6570.1993.tb00893.x>> [Accessed 27 May 2020].

Liu, Y. and Perrewé, P., 2005. Another look at the role of emotion in the organizational change: A process model. *Human Resource Management Review*, 15(4), pp.263-280.

Lo, S. and Aryee, S., 2003. Psychological Contract Breach in a Chinese Context: An Integrative Approach. *Journal of Management Studies*, [online] 40(4), pp.1005-1020. Available at: <<https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-6486.00368>> [Accessed 14 April 2020].

Lloyd, B. and Trompenaars, F., 1993. Culture and Change: Conflict or Consensus?. *Leadership & Organization Development Journal*, 14(6), pp.17-23.

Lundvall, B., 2007. National Innovation Systems—Analytical Concept and Development Tool. *Industry & Innovation*, 14(1), pp.95-119.

Ma, R., Hechanova, H., Caringal-Go, J. and Magsaysay, J., 2018. Implicit change leadership, change management, and affective commitment to change: Comparing academic Institutions vs business enterprises. *Leadership & Organization Development Journal*, [online] 39(7), pp.914-925. Available at: <<https://www.emerald.com/insight/content/doi/10.1108/LODJ-01-2018-0013/full/html>> [Accessed 19 September 2019].



Magnette, E. and De Maesschalck, Y., 2015. SAP EHS & 3E Online At GSK Vaccines: A Success Story.. [online] 3ecompany.com. Available at: <<https://3ecompany.com/sites/default/files/3E-Roadshows-2015-SAP-EHS-3E-Online-at-GSK-Vaccines.pdf>> [Accessed 2 May 2020].

Mar, A., 2013. 4 Types of Change Management (Levels). [online] Simplicable. Available at: <<https://management.simplicable.com/management/new/4-types-of-change-management>> [Accessed 15 July 2019].

McCormack, B., Rycroft-Malone, J., De Corby, K., Hutchinson, A., Bucknall, T., Kent, B. and Wilson, V., 2013. A realist review of interventions and strategies to promote evidence-informed healthcare: A focus on change agency. *Implementation Science*, 8(1), p.107.

McNulty, T. and Ferlie, E., 2004. Process Transformation: Limitations to Radical Organizational Change within Public Service Organizations. *Organization Studies*, 25(8), pp.1389-1412.

Maree, K. and Pietersen, J., 2007. The Quantitative Research Process. In *First Steps In Research*. Pretoria: Van Schaik.

Metcalfe, S., (1995), *The Economic Foundations of Technology Policy: Equilibrium and Evolutionary Perspectives* in P. Stoneman (ed.), *Handbook of the Economics of Innovation and Technological Change*, Oxford (UK)/Cambridge (US): Blackwell Publishers.

Mishra, P., Pandey, C., Singh, U. and Gupta, A., 2018. Scales of measurement and presentation of statistical data. *Annals of Cardiac Anaesthesia*, [online] 21(4), p.419. Available at: <https://www.researchgate.net/publication/328345841_Scales_of_Measurement_and_Presentation_of_Statistical_Data> [Accessed 4 June 2020].

Morris, A., 2010. Assessing Brand Image Transfer in Sponsorship. Masters. Stellenbosch.

Morrison, E. and Robinson, S., 1997. When Employees Feel Betrayed: A Model of How Psychological Contract Violation Develops. *The Academy of Management Review*, 22(1), p.226.

Nassiri-Koopaei, N., Majdzadeh, R., Kebriaeezadeh, A., Rashidian, A., Yazdi, M., Nedjat, S. and Nikfar, S., 2014. Commercialization of biopharmaceutical knowledge in Iran; challenges and solutions. *DARU Journal of Pharmaceutical Sciences*, [online] 22(29). Available at: <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3974067/>> [Accessed 16 February 2020].

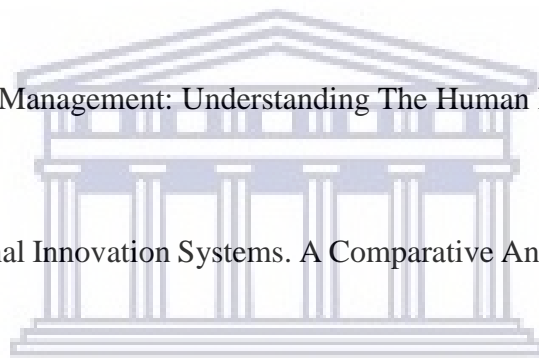
Nelson, K., 2011. *Change Management: Understanding The Human Dynamics of Change*.

Nelson, R.R., 1993. *National Innovation Systems. A Comparative Analysis*. Oxford University Press.

Ng, C., 2006. Designing a Questionnaire. *Malaysian Family Physician*, [online] 1(1), pp.32-35. Available at: <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4797036/pdf/MFP-01-32.pdf>> [Accessed 1 June 2020].

Nicolay, A. and Moore, W., 1999. From Organizational Development to Change Management: The Emergence of a New Profession. *The Journal of Applied Behavioural Science*, 35(3), pp.273-286.

Nutakki, L., Reddy, M. and Balan, S., 2015. A Study of the Relationship between Change Management, Psychological Contract & Organizational Citizenship Behavior. *IOSR Journal of Business and Management*, [online] 7(3), pp.46-49. Available at: <<http://www.iosjournals.org>> [Accessed 3 April 2020].



UNIVERSITY of the
WESTERN CAPE

OECD, 2019. Organisation for Economic Co-Operation and Development (OECD), National Innovation Systems. [online] Available at: <<http://www.oecd.org>> [Accessed 15 October 2019].

Otto, R., Santagostino, A. and Schrader, U., 2014. Rapid Growth in Biopharma: Challenges and Opportunities. [online] Available at: <<https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/rapid-growth-in-biopharma>> [Accessed 23 September 2019].

Öztemela, E. and Ayhan, M., 2010. A Methodology for Change Management in Manufacturing. [online] https://www.academia.edu/2386566/A_Methodology_for_Change_Management_in_Manufacturing. Available at: <https://www.academia.edu/2386566/A_Methodology_for_Change_Management_in_Manufacturing> [Accessed 1 August 2019].

PATH/MVI, 2016. PATH and GSK Welcome Funding from The Global Fund Towards Malaria Vaccine Pilot Implementation. [online] PATH's Malaria Vaccine Initiative. Available at: <<https://www.malariavaccine.org/news-events/news/path-and-gsk-welcome-funding-global-fund-towards-malaria-vaccine-pilot>> [Accessed 27 May 2020].

Patton, M., 2005. Qualitative Research. Encyclopedia of Statistics in Behavioral Science, [online] Available at: <<https://onlinelibrary.wiley.com/doi/abs/10.1002/0470013192.bsa514>> [Accessed 16 August 2019].

Petouhoff, N., Chandler, T. and Montag-Schmaltz, B., 2006. The Business Impact of Change Management. Graziadio Business Review Journal, 9(3).

Pfizer, 2015. News and Media - Pfizer SA. [online] Pfizer.co.za. Available at: <<https://www.pfizer.co.za/News>> [Accessed 24 May 2020].

Pollitt, C. and Bouckaert, G., 2004. Public Management Reform. A Comparative Analysis. Oxford: Oxford University Press.

Pryor, M., Taneja, S., Humphreys, J., Anderson, D. and Singleton, L., 2008. Challenges Facing Change Management Theories and Research. Delhi Business Review X, 9(1).

Quain, S., 2019. The Effects of Leadership Styles On the Organization. [online] Small Business - Chron.com. Available at: <<https://smallbusiness.chron.com/effects-leadership-styles-organization-10387.html>> [Accessed 12 February 2020].

Rafferty, A. and Griffin, M., 2006. Perceptions of organizational change: A stress and coping perspective. Journal of Applied Psychology, 91(5), pp.1154-1162.

Raja, U., Johns, G. and Ntalianis, F., 2004. The Impact of Personality on Psychological Contracts. Academy of Management Journal, [online] 47(3), pp.350-367. Available at: <https://www.researchgate.net/publication/228079195_The_Impact_of_Personality_on_Psychological_Contracts> [Accessed 15 February 2020].

Randeree, K., 2008. Leading Change in Organisations: A Focus on Quality Management. The International Journal of Knowledge, Culture, and Change Management: Annual Review, [online] 8(5), pp.43-50. Available at: <http://www.researchgate.net/publication/307764200_Leading_Change_in_Organisations> [Accessed 19 July 2019].

Robinson, S., 1996. Trust and Breach of the Psychological Contract. *Administrative Science Quarterly*, [online] 41(4), p.574. Available at: <<https://www.jstor.org/stable/2393868?seq=1>> [Accessed 14 March 2020].

Rochepeau, A., 2004. The Pharmaceutical Biotechnology Industry in France. [online] *Oecd.org*. Available at: <<http://www.oecd.org/sti/inno/34960843.pdf>> [Accessed 25 May 2020].

Rousseau, D., 1989. Psychological and implied contracts in organizations. *Employee Responsibilities and Rights Journal*, 2(2), pp.121-139.

Rousseau, D. and Tijoriwala, S., 1998. Assessing Psychological Contracts: Issues, Alternatives and Measures. *Journal of Organizational Behavior*, 9(1), P 679-695.

Sarran, P., Clark, D. and Mendonca, K., n.d. Change Management Toolkit. [online] Berkeley University of California. Available at: <https://hr.berkeley.edu/sites/default/files/change_management_toolkit.pdf> [Accessed 12 February 2020].

Saunders, M. and Thornhill, A., 2003. Organisational justice, trust and the management of change. *Personnel Review*, 32(3), pp.360-375.

Schalk, R. and Freese, C., 1997. *New Facets of Commitment in Response to Organizational Change: Research Trends and The Dutch Experience*. Chichester: John Wiley, pp.107-123.

Smith, C., Organ, D. and Near, J., 1983. Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology*, 68(4), pp.653-663.

Smith, C. and Lazarus, R., 1990. Emotion and Adaptation. Handbook of Personality: Theory and Research. LA: Guilford Press, pp.609-637.

Sofiprotéol, Partenaire stratégique de l'agro-industrie et de l'agroalimentaire. 2000. BIOAM-Sofiprotéol, Partenaire Stratégique De L'agro-Industrie Et De L'agroalimentaire. [online] Available at: <<https://www.sofiproteol.com/en/partenaire/bioam/>> [Accessed 27 May 2020].

Sreejesh, S., Mohapatra, S. and Anusree, M., 2013. Questionnaire Design. Business Research Methods, [online] pp.143-159. Available at: <https://www.researchgate.net/publication/300010607_Questionnaire_Design> [Accessed 1 June 2020].

Stewart, J. and Kringas, P., 2003. Change Management-Strategy and Values in Six Agencies from the Australian Public Service. Public Administration Review, [online] 63(6), pp.675-688. Available at: <https://www.researchgate.net/publication/227698849_Change_Management-Strategy_and_Values_in_Six_Agencies_from_the_Australian_Public_Service> [Accessed 3 February 2020].

Sturdy, A. and Grey, C., 2003. Beneath and Beyond Organizational Change Management: Exploring Alternatives. Organization, 10(4), pp.651-662.

Tasmanian Government, 2012. Department of Premier and Cabinet. [online] Dpac.tas.gov.au. Available at: <http://www.dpac.tas.gov.au/divisions/ssmo/change_management/transition_and_change> [Accessed 20 October 2019].

Oecd.org. 2004. The Pharmaceutical Biotechnology Industry in France French Ministry of Research and New Technologies. [online] Available at: <<http://www.oecd.org/sti/inno/34960843.pdf>> [Accessed 14 May 2020].

Sharma, B., 2018. Processing of data and analysis. *Biostatistics and Epidemiology International Journal*, [online] 1(1), pp.3-5. Available at: <http://ologyjournals.com/beij/beij_00003.pdf> [Accessed 1 June 2020].

Taherdoost, H., 2017. Determining Sample Size; How to Calculate Survey Sample Size. *International Journal of Economics and Management Systems*, [online] 2, pp.237-239. Available at: <<http://www.iaras.org/iaras/journals/ijems>> [Accessed 1 June 2020].

Todnem By, R., 2010. Journal of Change Management: 10 Years On. *Journal of Change Management*, 10(1), pp.1-3.

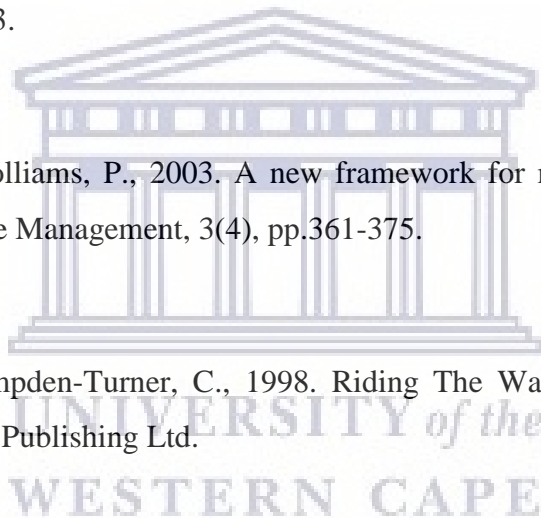
Trompenaars, F. and Woolliams, P., 2003. A new framework for managing change across cultures. *Journal of Change Management*, 3(4), pp.361-375.

Trompenaars, F. and Hampden-Turner, C., 1998. *Riding The Waves of Culture*. 2nd ed. London: Nicholas Brealey Publishing Ltd.

Turnley, W. and Feldman, D., 1998. Psychological contract violations during corporate restructuring. *Human Resource Management*, [online] 37(1), pp.71-83.

By, R., Burnes, B. and Oswick, C., 2012. Change Management: Leadership, Values and Ethics. *Journal of Change Management*, 12(1), pp.1-5.

USAID, 2015. ADS Reference 597Saj. [online] Usaid.gov. Available at: <<https://www.usaid.gov/ads/policy/500/597saj>> [Accessed 13 April 2015].



Van den Heuvel, S. and Schalk, R., 2009. The relationship between fulfilment of the psychological contract and resistance to change during organizational transformations. *Social Science Information*, [online] 48(2), pp.283-313. Available at: <https://www.researchgate.net/publication/249733237_The_relationship_between_fulfillment_of_the_psychological_contract_and_resistance_to_change_during_organizational_transformations> [Accessed 1 May 2020].

Van der Voet, J., 2014. The effectiveness and specificity of change management in a public organization: Transformational leadership and a bureaucratic organizational structure. *European Management Journal*, [online] 32(3), pp.373-382. Available at: <<https://www.sciencedirect.com/science/article/abs/pii/S0263237313001175>> [Accessed 9 February 2020].

Wheeler, C. and Berkley, S., 2001. Initial Lessons from Public-Private Partnerships in Drug and Vaccine Development. [online] PubMed. Available at: <<https://pubmed.ncbi.nlm.nih.gov/11545329/>> [Accessed 24 April 2020].

WHO, 2019. Malaria Vaccine Pilot Launched in Malawi. [online] Who.int. Available at: <<https://www.who.int/news-room/detail/23-04-2019-malaria-vaccine-pilot-launched-in-malawi>> [Accessed 27 May 2020].

Wilder, B., 2011. Managing Change Management in Pharma: A Talk with Bill Wider, Pharma Manufacturing. [online] Pharmamanufacturing.com. Available at: <<https://www.pharmamanufacturing.com/articles/2011/106/>> [Accessed 20 October 2019].

Wojtecki, J. and Peters, Jr and R., 2000. Communicating Organizational Change: Information Technology meets the Carbon-Based Employee Unit. *The 2000 Annual*, [online] 2, pp.175-190. Available at: <http://centerforriskcommunication.org/publications/Communicating_Organizational_Change.pdf> [Accessed 20 February 2020].

Yi, Y., Gu, M. and Wei, Z., 2017. Bottom-up learning, strategic flexibility and strategic change. *Journal of Organizational Change Management*, [online] 30(2), pp.161-183. Available at: <<http://www.researchgate.net/publication/316644638>> [Accessed 18 July 2019].



UNIVERSITY *of the*
WESTERN CAPE

APPENDIX A

Dear Employee:

You've been selected to participate in a **Change Management** Survey. The data from the survey will be used as part of research with the aim of assessing the current change management process. The research also forms part of the researchers M.Sc. studies at the University of the Western Cape. The survey consists of 56 short questions and should only take 20-25 minutes to complete.

Your perceptions are critical to this evaluation as this will provide Management with valuable feedback to evaluate the current Change Management Process. By completing the survey, you agree that the data you provide can be used for research purposes.

ASSURANCE OF CONFIDENTIALITY

The entire survey process will follow strict confidentiality requirements as indicated below:

No one but the Researcher will see your questionnaire, which will be anonymous.

No individual responses will be reported and no attempt will be made to identify individual respondents

- ✚ The Facilitator is to report only statistical summaries by demographic sections
- ✚ The Facilitator will tabulate the survey results

Guidance for Completing the Questions

- ✚ **Participation is voluntary.** If you volunteer to be in this study, you may withdraw at any time without consequences of any kind.
- ✚ **By continuing to complete the questionnaire, you give consent to participate in the research.**
- ✚ Please **don't write your name down** as this survey is completely **anonymous**.
- ✚ There is **no right or wrong answer**.
- ✚ Please mark your answer by selecting the appropriate response
- ✚ **It is very important to note that only one of the boxes per question should be ticked.**

If you have any questions or concerns about the research, please feel free to contact the researcher Thersia Terblanche [+27 (0)83 234 2782, thersiat@mweb.co.za] and/or the Supervisor Dr. Samuel Egieyeh [Tel: +27 (0)21 9593 388, segieyeh@uwc.ac.za].

You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research subject, contact the University of the Western Cape Division for Research Development.

Questionnaire design draft

Questionnaire instructions:

- Various questions are posed based on the current Change Management process that is being implemented.
- Kindly capture your perception on the scale as provided for each question

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
(1)	(2)	(3)	(4)	(5)

- There are no right or wrong answers
- Kindly complete all questions
- By continuing to complete the questionnaire, you give consent to participate in the research

Part 1 - Demographics

1. Nationality
2. Age
3. Gender

Part 2 – Process of Change

4. I am regularly informed on how the change is going.
5. There is good communication between project leaders and staff members about the organization's policy toward changes.
6. Information provided on change is clear.
7. Information concerning the changes reaches us mostly as rumours.

8. We are sufficiently informed of the progress of change.
9. Corporate management team keeps all departments informed about its decisions.
10. Two-way communication between the corporate management team and the departments is very good
11. Corporate management team clearly explains the necessity of the change.
12. Changes are always discussed with all people concerned.
13. Those who implement change, have no say in developing the proposals.
14. Decisions concerning work are taken in consultation with the staff who are affected.
15. My department's management team takes account of the staff's remarks.
16. Departments are consulted about the change sufficiently.
17. Staff members were consulted about the reasons for change.
18. Front line staff and office workers can raise topics for discussion.
19. Our department provide sufficient time for consultation.
20. It is possible to talk about outmoded regulations and ways of working.
21. The way change is implemented leaves little room for personal input.
22. Staff members are sufficiently involved in the implementation of the changes by our department's senior managers.
23. Corporate management team has a positive vision of the future.
24. Corporate management team is actively involved with the changes.
25. Corporate management team supports the change process unconditionally.
26. Our department's senior managers pay sufficient attention to the personal consequences that the changes could have for their staff members.
27. Our department's senior managers coach us very well about implementing change.
28. Our department's senior managers have trouble in adapting their leadership styles to the changes.
29. My manager does not seem very keen to help me find a solution if I have a problem.
30. If I experience any problems, I can always turn on my manager for help.
31. My manager can place herself/himself in my position.
32. My manager encourages me to do things that I have never done before

Part 3 – Climate of Change or Internal Context

33. Corporate management team consistently implements its policies in all departments.

34. Corporate management team fulfils its promises.
35. If I make mistakes, my manager holds them against me.
36. Within our organization, power games between the departments play an important role.
37. Staff members are sometimes taken advantage of in our organization.
38. In our organization, favouritism is an important way to achieve something.
39. It is difficult to ask help from my colleagues.
40. There is a strong rivalry between colleagues in my department.
41. I doubt whether all of my colleagues are sufficiently competent.
42. I have confidence in my colleagues.
43. My department is very open.

Part 4 – Readiness for Change

44. I have a good feeling about the change project.
45. I experience the change as a positive process.
46. I find the change refreshing.
47. I am somewhat resistant to change.
48. I am quite reluctant to accommodate and incorporate changes into my work.
49. I think that most changes will have a negative effect on the clients we serve.
50. Plans for future improvement will not come too much.
51. Most change projects that are supposed to solve problems around here will not do much good.
52. The change will improve work.
53. The change will simplify work.
54. I want to devote myself to the process of change.
55. I am willing to make a significant contribution to the change.
56. I am willing to put energy into the process of change.

Appendix B

Checklist for Avoiding Bad Managers

Is there unnecessary complexity?

1. Is the company's organizational structure convoluted or complex?
2. Is its strategy unnecessarily complex for an otherwise simple problem?
3. Is its accounting overly complicated, non-transparent or nonstandard?
4. Is it employing complicated or nonstandard terminology?

Is spending out of control?

1. Does the management team have enough experience to handle growth?
2. Are there small, yet nontrivial, details or problems that seem to be getting overlooked by management?
3. Is management ignoring warnings now that could lead to problems later?
4. Is the company so successful or so dominant that it is no longer in touch with what it needs to do to remain on top?
5. Do the unplanned departures of senior executives signify deeper problems?

Is the CEO Distracted?

1. Do I have unanswered questions about the CEO's background and talent?
2. Is the CEO spending too much money to fulfil personal missions that don't necessarily benefit the company?
3. Are company leaders so consumed by money and greed that they're taking questionable or inappropriate actions?

Is there excessive hype?

1. Is it possible that the excitement around the company's new product is just hype?
2. Could the excitement around the company's merger or acquisition be hype?
3. Is the excitement around the company's prospects just unfulfilled hype?
4. Is the latest missed milestone part of a pattern that could signify deeper problems?

A Question of Character

1. Are the CEO and other senior executives so aggressive or overconfident that you don't really trust them?

(Finkelstein, 2003)