

**THE DEVELOPMENT AND PRACTICAL IMPLEMENTATION OF A PROJECT
MANAGEMENT MODEL FOR ENHANCING NEW VENTURE CREATION
SUCCESS**

by

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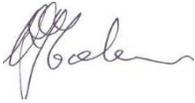
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DECLARATION

I William James Coleman, student number 207035695, do hereby declare that this research paper submitted to the Central University of Technology, Free State for the MTECH: Business Administration is my own independent work and has not previously been submitted by me at another university. I furthermore cede copyright of the dissertation in favour of the Central University of Technology, Free state.



SIGNATURE OF STUDENT

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With lots of gratitude

William James Coleman

Bloemfontein

South Africa

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LIST OF ABBREVIATIONS AND ACCRONYMS

APF - Adaptive Project Framework
APM - Agile Project Management
B-BBEE - Broad-Based Black Economic Empowerment
CAR- Canonical Action Research
CAS - Complex adaptive systems
CRM – Customer Relationship Management
CPM - Critical Path Method
GEM - Global Entrepreneurial Monitor
HR - Human Resource
NV – New Venture
NVC - New Venture Creation
PDM - Precedence Diagramming Method
PERT- Project Evaluation Review Technique
PMMM - Project Management Maturity Model
PMBOK© – Project Management Body of Knowledge
PMO - Project Management Office
PMP - Project Management Process
PMLC - Project Management Life Cycle
PMI – Project Management Institute
QA – Quality Assurance
SEDA - Small Enterprise Development Agency
SMME – Small, Medium and Micro Enterprises
SAD - Systems Analysis and Design
S/W – Software
TEA - Total Entrepreneurial Activity
TPM - Traditional Project Management
WBS – Work Breakdown structure

ABSTRACT

Research by the Global Entrepreneurship Monitor (GEM) continuously indicate that new venture creation success rate in South Africa is disturbingly low. This situation arises despite numerous support mechanisms in place to encourage citizens to establish their own businesses. This is an indication that current approaches to encourage new venture creation are not working. New approaches must therefore be found.

The goal of this study was to combine the processes of *project management* and *entrepreneurship*, two seemingly diametrically opposed management philosophies into an integrated process model that will contribute to enhancing the new venture creation process. So, at the heart of this study is the wish to assist prospective entrepreneurs in their new venture creation journey.

To achieve this objective, action research design, an emerging approach to qualitative research was adopted. Specifically, the canonical action research was used. Holistically, the study can be described as applied, cross-sectional, descriptive and exploratory in nature.

Through a series of iterative canonical action research cycles, a model was developed. The results suggest that despite their seemingly diametrically opposed management philosophies, an integrated *project management* model for *new venture creation* is achievable.

CHAPTER 1: ORIENTATION TO THE STUDY

1.1 INTRODUCTION

This study explores the potential of integrating project management principles and techniques into the new venture creation (entrepreneurial) process with the intent of enhancing the success rate of new ventures. This introductory chapter provides the background to the problem; the problem statement; study objectives; significance of the study; and an overview of the prevailing state of new venture creation in South Africa.

1.2 BACKGROUND TO THE PROBLEM

“Small businesses are important for job creation and employment, as around forty five percent of all employed people in South Africa work in firms with less than 10 employees” (Small Business Project, 2009:2). In a speech delivered by Ms Elizabeth Thabatha, the then Deputy Minister of Trade and Industry in April 2012 at a Small Medium and Micro Enterprise (SMME) breakfast, it was reported that South Africa’s estimated 2.8 million SMMEs contribute between 52% and 57% of Gross Domestic Product (GDP); accounts for about 61% of employment; and contributes more than 40% of the country’s total remuneration. These figures illustrate that SMME development is critical for driving employment, economic growth and stability in South Africa. The then Minister cannot therefore be faulted when she added that the primary role of the Department of Trade and Industry (DTI) is to increase the number of new ventures as well as support the survival and growth of existing SMMEs.

In South Africa, new ventures form an important component of the government’s SMME development agenda, as is evident from the number of specialised regulatory and financial development institutions that have been established to support SMMEs. To mention just a few, there is the Black Business Supplier Development Programme (BBSDP). This program is a cost sharing grant mechanism offered to small black-owned

businesses to assist them in improving competitiveness and business sustainability. There is also the Co-operative Incentive Scheme (CIS) that engages in a 90:10 another cost-sharing grant scheme for registered primary co-operatives whose brief is to improve the viability and competitiveness of co-operative enterprises. Incubation Support Programme (ISP) is another mechanism initiated to develop successful enterprises with the potential to revitalise rundown communities and to strengthen local economies. Small Enterprise Development Agency's (Seda's) Technology Programme (STP) is another support mechanism that focusses on technology business incubation. There is also the Support Programme for Industrial Innovation (SPII), an agency that promotes technology development in South Africa. Last but not the least, there is the Technology and Human Resources for Industry Programme (THRIP) that supports science, engineering and technology research. (DTI, 2013).

Despite the apparent investments in the SMME sector, sub-optimal results have persisted as far as new venture creation is concerned. South Africa's Total Entrepreneurial Activity (TEA) performance in relative terms has been consistently below par. For instance, Herrington, et al. (2012) reports that notwithstanding some increase in the TEA from 5.29% in 2006 to 8.9% in 2010 and 9.1% in 2011, overall, South Africa still lags far behind other similar developing countries (in fact lies below the mean). In the report, Herrington, et al. (2012) show that South Africa's new business formation rate of 2.3% was the second lowest in the world, a consistent finding in GEM South Africa's surveys. This paints a bleak picture of the potential of the SMME sector to contribute in reducing inequality gap and unemployment that SMMEs are touted for.

In South Africa, where the official statistics on unemployment is around 25%, new venture creation is one of the most widely accepted means to job creation (Herrington, et al. 2012). Figures released by Adcorp's (2012) employment index noted with alarm the closure/ failure of 440 000 small businesses over a five year period. Something therefore needs to be done to stem the small business exit rate.

1.2.1 IMPROVING THE NEW VENTURE CREATION SUCCESS RATE

In this study, an attempt is made to come up with a model for new entrepreneurial venture creation in South Africa. The aim is to improve the small business creation rate in South Africa. Specifically, the model incorporates elements of entrepreneurship and project management.

The concepts of entrepreneurship and project management are fully explored in Chapters 2 and 3 respectively. However, it is important to provide the working definitions for these two concepts at the outset because the existence so many and varied definitions of entrepreneurship as well as project management that were found in the literature creates the potential for confusion.

Defining entrepreneurship

Despite diversity in definitions, some key themes are discernible from the literature for entrepreneurship. These include: the capability to think of new ways to provide a product or service or to initiate an entirely new product or service; risk; and financial reward (detailed review in Chapter 2). Therefore, for the purpose of this study, entrepreneurship is operationally defined as: *the process of pursuing a potentially risky new venture that triggers the production of novel goods and/or services leading to financial rewards.*

Defining project management

As in the case of entrepreneurship, many definitions of project management have also been suggested. After careful consideration of extant definitions, (see details in Chapter 3) for the purpose of this study, project management is defined as: *a structured approach to applying knowledge skills, tools and techniques to effectively manage schedules, budgets and resources to achieve desired business result in accordance with client requirements.*

1.3 PROBLEM STATEMENT

Government support is no doubt crucial for SMMEs to thrive and the brief literature review above attests to governments unwavering support. It is therefore surprising that South Africa's TEA rating - the ability to translate ideas into successful new ventures remains so disappointing. The disturbing TEA statistics stated above relative to other African countries evoke the need to provide viable strategies to guide entrepreneurs through the difficult process of new venture creation. Put differently, it seems that current approaches to new venture creation in South Africa are failing. New and innovative ways are therefore imperative to arrest the situation.

Whilst project management has long been seen as the domain of the engineering and construction world, it has recently received much attention in the corporate world, where "management by projects" has become commonplace (Kocabaş, 2010; Larson & Gray, 2011; Schroeder, 2011). How project management can enhance the new venture creation process, has however received scant attention in the literature. Yet several authors including Horn (2009) and Burke (2007) just to mention a few see project management as a necessary skill for successfully starting a new business. Thus, there is a growing realisation of the complementarity of these two management philosophies. Whilst there are these normative suggestions that project management can enhance the new venture creation process, there is little empirical information available on how these divergent philosophies can be brought together in a manner that can enhance the new venture creation process.

The problem for this study is how to combine the processes of *entrepreneurship* and project *management*, two seemingly diametrically opposed management philosophies into an integrated model to improve the new venture creation success rate.

1.4 RESEARCH AIM AND OBJECTIVES

1.4.1 AIM

This study is aimed at improving the new venture creation success rate in South Africa.

1.4.2 MAIN OBJECTIVE

The main objective of this study is to develop an integrated project management based new venture creation model.

1.4.3 SUBSIDIARY OBJECTIVES

1. To identify elements project management (principles and techniques) that can be incorporated into the various stages of the new venture creation process.
2. To generate a pragmatic model that incorporates the two processes of project management and entrepreneurship.
3. To practically apply the model in the creation of a new small scale bio-diesel venture and refine it if necessary.
4. To provide guidelines for implementing the model.

1.5 SIGNIFICANCE OF THE RESEARCH

First and foremost, this research enriches the management literature. More specifically, it adds to the entrepreneurship body of knowledge by showing that the two seemingly diametrically opposed management philosophies and skill sets (entrepreneurship and project management) can augment each other in the new venture creation process. As will be seen later on, this research has shown that a workable integration of the new venture creation processes and those of project management processes is not only feasible but can significantly address the issues commonly faced by the entrepreneur in the new venture process.

1.6 LIMITATIONS

As is often happens in case studies, generalization beyond small scale bio-diesel business could be a problem. However, lessons learnt can be useful in tailoring models for other types of small businesses. Secondly, some critics may point out that the model covers only part of the new venture creation process since the idea generation stage is not included. This is a deliberate action because typical of any creative process, idea generation is so unstructured that any attempt to incorporate elements of project management which happen to be rigid will only end up inhibiting creativity hence retard idea generation.

1.7 CHAPTER SUMMARY

New ventures in the SMME sector are accepted to be at the heart of job creation and hence poverty alleviation. The consistent poor TEA rate for South African is most concerning. Project management is an acknowledged process for achieving organisational goals and new venture creation has all the hallmarks of a small project. This study endeavoured to integrate the two seemingly opposing concepts of project management (a well-structured methodology) and entrepreneurship (a rather unstructured process - need to make quick decisions and changes based on new information), to assist in improving the success rate of new venture creation. The two key components of the study are therefore *entrepreneurship* and *project management*. This chapter has provided a general introduction to the study. The next chapter deals with the first aspect – the *entrepreneurial process* or the *new venture creation process*.

CHAPTER 2: THE NEW VENTURE CREATION PROCESS

2.1 INTRODUCTION

As stated in Chapter 1, the current study strives to identify and integrate components of project management into the new venture creation process (also referred as the entrepreneurial process) with the aim of enhancing new venture success rate. The study therefore unravels the new venture creation process on the one hand and the project management process on the other. To develop a clear understanding, this chapter reviews literature on the new venture creation process.

This review of the entrepreneurial process is placed within the implementation framework within the South African context. The chapter is structured to cover the following areas: (i) meaning and nature of entrepreneurship; (ii) approaches to entrepreneurship; (iii) the new venture creation process; (iv) reasons for start-up failure and ways of ensuring start-up success; (v) role of new venture creation; (vi) state of new venture creation in South Africa and (vii) Summary of the salient points in the chapter.

2.2 MEANING AND NATURE OF ENTREPRENEURSHIP

To begin with, it is considered essential to first understand what entrepreneurship is and who the entrepreneur is in order to fully comprehend what the entrepreneurial process entails.

2.2.1 WHAT IS ENTREPRENEURSHIP?

The literature search revealed numerous definitions of entrepreneurship to the extent that a universally accepted one seems almost impossible. Not surprisingly, Wickham (2004:2) considers entrepreneurship to be a complex phenomenon that cannot be pinned down to a single all-encompassing definition.

One of the earliest attempts to define the term can be traced back to an Austrian by name Schumpeter (1934) who conceives innovation as fundamental to wealth creation and simply defined entrepreneurship as “creative destruction”. This definition means breaking down the old ways of doing things to create new value implying some form of innovation.

Deakins and Freel (2009:4) also define entrepreneurship from an innovation perspective as “the creation of a new entity centred on a *novel* product or service or, at the very least, one which differs significantly from products or services offered elsewhere in the market”. In the agribusiness sector, such innovation can manifest in for example alternate energy production from biomass (the energy from plants and plant-derived materials).

Similar to Schumpeter (1934) and Deakins and Freel (2009:4), Hisrich, et al. (2010:7) defined entrepreneurship as “the process of creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence”. It can be inferred that while Hisrich, et al. (2010:7) view entrepreneurship only from risk perspective, Schumpeter (1934) and Deakins and Freel (2009:4) focused on innovation as well as risk in the entrepreneurial process. Risk is therefore unavoidable in entrepreneurship. Some of the most notable risks in agribusiness sector relate to severe weather conditions and crop and animal diseases.

Allen (2012:4) considered entrepreneurship from an opportunity perspective and defined the concept as “the process by which individuals - either on their own or inside organisations - pursue opportunities without regard to the resources they currently control”.

Kariv (2011:29) views entrepreneurship with a cultural lens by stating that entrepreneurship is a mind-set and lifestyle, inherently steeped in and affected by the environment in which the entrepreneurial activity is undertaken.

These varied definitions confirm the notion that a singular and generally accepted definition for entrepreneurship is virtually impossible hence the need for operational definition.

Despite the divergence in the definitions of entrepreneurship, three key themes that are discernible include: the capability to think of new ways to provide a product or service or to initiate an entirely new product or service; risk; and financial reward. Thus, for the purpose of this study, entrepreneurship is operationally defined as: *the process of pursuing a potentially risky new venture that triggers the production of novel goods and/or services leading to financial rewards.*

2.2.2 WHO IS THE ENTREPRENEUR?

Hisrich, et al. (2010:6) define an entrepreneur as, “an individual who takes initiative to bundle resources in innovative ways and is willing to bear the risk and or the uncertainty to act”. Wickham (2004:7) considers the entrepreneur to be driven in three main directions namely: undertaking an activity and performing particular tasks; an agent of economic change in terms of the effects they have on the economic system and changes they drive; and an individual with specific psychology, personality and personal characteristics. Hisrich, et al. (2010:6) indicate that there are common traits of an entrepreneur which include: initiative taking; organising and re-organising social and economic mechanisms to bundle resources in innovative ways; and acceptance of risk, uncertainty, and/or the potential of failure. Deakins and Freel (2009:4) regard the entrepreneur as someone who is alert to profitable opportunities, and exploits the opportunity for economic benefit.

Like entrepreneurship, these definitions of the entrepreneur emphasise novelty, innovation, creativity, risk and financial reward. Thus, for the purpose of this study and consistent with the operational definition of entrepreneurship, an entrepreneur is defined as: *an individual who pursues an idea or ideas of a potentially risky new venture that triggers the production of novel goods and/or services leading to financial rewards.*

Having understood what entrepreneurship and the entrepreneur mean, it is now appropriate to consider the various conceptualisations of entrepreneurship – the first of which is the necessity versus opportunity conceptualisation of entrepreneurship.

2.2.3 NECESSITY VERSUS OPPORTUNITY IN ENTREPRENEURSHIP

One of the most discussed areas in the entrepreneurial domain is the *push-pull* theory of entrepreneurship. The theory classifies entrepreneurship as either based on *opportunity* or *need*.

Necessity based entrepreneurship is more associated with developing economies where the start-up business is a matter of survival as participants have no alternative form of economic activity. This phenomenon is attributed to lack of paid employment hence the need to find something doing for the sake of survival.

Opportunity-based entrepreneurs on the other hand are those that want to take advantage of a situation (opportunity) to maintain or improve their income or increase their independence (Kelly et al. 2011; Deakins & Freel, 2009; Kariv, 2012). This phenomenon aptly describes the entrepreneurship activities of the information technology (IT) developers in the Silicon Valley, where small enterprise developers are driven more by opportunities to accumulate personal wealth than necessity or any altruistic motives.

GEM researches dating back to 2005 have consistently shown that the contribution to the economy of opportunity based enterprises is higher than for necessity-based business. For instance, Kelly, et al. (2011) reported that the mean number of jobs created by necessity based business was 1.6 in contrast to the 4.4 jobs created by opportunity-based firms. That is, opportunity based firms were almost 4 times as likely to employ 6 or more people in comparison to necessity based business. The reality for businesses in developing countries like South Africa is that they are predominantly necessity based (Kelly, et al. 2011).

The economic downturn in 2009 and 2010 seemed to have reduced the number of individuals who thought there were good opportunities to start businesses in South Africa. On the contrary, Kelly, et al. (2011) indicated that the economic downturn decreased the contribution of opportunity-motivated entrepreneurial activity in South Africa from almost 4 times out of 10 likelihood in 2008 to only 1.7 times out of 10 likelihood in 2010.

Having explored the meaning and nature of entrepreneurship and the necessity versus the opportunity dichotomy, it is considered important to also comprehend how entrepreneurship can be studied.

2.3 APPROACHES TO UNDERSTANDING ENTREPRENEURSHIP

Several approaches to studying entrepreneurship can be found in the literature but for the purpose of this study, three approaches, namely (i) the environment in which the entrepreneur operates; (ii) the psychological trait approach which focuses on the personality characteristics of the entrepreneur and; (iii) the social-behavioural roles which emphasis the influence of the social environment are considered. These approaches were selected as they were deemed necessary for understanding entrepreneurship within the South African context.

2.3.1 ENVIRONMENT APPROACH

The environment in which the entrepreneur operates is an important determinant in launching a new venture. The aspects of the environment to be examined are: economic, socio-cultural, political and legislative, technological, ecological and operational (Kariv, 2011:19). These aspects are critical in the incubation of new ventures and their ability to maintain the business in the establishment stage and beyond. Kelly et al. (2011:4) categorises the institutional environment into social, cultural and political context and then subdivides these groupings into greater detail to cater for countries whose economies are at different levels of development. South Africa is categorised as a *factor driven economy*. Kelly et al. (2011) suggests that two sets of general conditions broadly affect

entrepreneurship, namely: basic requirements for new business incubation; and efficiency enhancers that further facilitate the new venture creation process. These institutional foundations are critical to entrepreneurship because without them, the entrepreneurship-specific conditions cannot function effectively (Kelly et al. 2011). Kelly et al. (2011) consider basic requirements to be: institutions; infrastructure; macroeconomic stability; and health and primary education of the citizens. The efficiency enhancers are: higher education and training; goods market efficiency; labour market efficiency; financial market sophistication; technical readiness; and market size (Kelly et al. 2011).

Basic requirements and efficiency enhancers are foundation conditions that influence the way a society functions and the well-being of its people. For entrepreneurship to function effectively these conditions must be in place (Kelly et al. 2011:4). Each of these basic requirements for entrepreneurship are now briefly examined.

2.3.1.1 Basic requirements critical to entrepreneurship

Institutions and infrastructure

Institutions and infrastructure provide social capital for entrepreneurship to be undertaken. Venter et al. (2010:78) regard *social capital* - the goodwill that is engendered by social relations as a resource that can be mobilised to facilitate action, as part the basic requirements needed for new venture creation. The sources of social capital therefore lie within boundaries in which the entrepreneur operates. For example social exchange may occur between bankers and investors. It may also exist between local governments and community groups. “Without a solid institutional foundation the entrepreneurship-specific conditions cannot function effectively” (Kelly et al. 2011:4).

Sautet (2005:3) emphasises that it is not entrepreneurship that is lacking. Rather, it is the lack of the right institutional context for entrepreneurship to take place. This is because, “institutions provide guidance, allow for routines to develop, and ultimately reduce the uncertainty of social interaction” (Sautet, 2005:3). It can be added that a cost-effective

physical and legal infrastructure is necessary to provide the essential platforms for effective entrepreneurship activities.

Health and primary education.

A sound basic education system is one of the fundamental requirements for any competitive country as it increases efficiency of workers. Workers who have received little or poor formal education can only do simple manual work and will in all probability have difficulty adapting to more advanced process and business environments. Unfortunately, South Africa fares poorly in this regard as Schwab (2010-2012) rated South Africa as 125 out of 139 regarding the quality of education. This happens despite: South Africa spending more on education than many other African countries, all ranked significantly higher with respect to quality of education; and education being linked with entrepreneurial success Hatten (2006:4).

Macroeconomic stability

Macro-economic stability is important for business; for the overall competitiveness of any country; and is a basic requirement for entrepreneurship (Kelly et al. 2011:4). Stability includes not only price stability but sound fiscal policies and a well-functioning economy with sustainable debt ratios and a healthy public and private sector balance (Ocampo, 2005). With the current Rand depreciation and fuel price hikes in the face of sometimes unreasonable worker wage demands, one wonders whether the South African economy can be described as stable to induce entrepreneurship.

Higher education and training

Education contributes to the growth of the national income and individual earnings. In today's information societies, knowledge drives economic growth and development and the main source of this knowledge is higher education (International Institute for Educational planning, 2007). Herrington (2010:29) contends that the South African higher education system that encourages memorisation and rote learning ignores the realities for today's work place. Higher education institutions (HEIs) therefore need to play more

meaningful role in the South African economy by instilling a greater entrepreneurial character among students (Nicholaides, 2011).

The contention in this study is that, uncertainty in the entrepreneurial process can be reduced when key elements from the project management process are identified and incorporated as integral components of entrepreneurship courses taught in HEIs. In the same manner, it is contended that operational efficiency of small firms can be enhanced when key elements from project management process are identified and integrated into the new venture creation process since project management as opposed to entrepreneurship is known for its “disciplined” approach to management of projects to ensure “efficiency” of implementation. These assertions are fully elaborated in coming chapters.

Goods market efficiency

Jarrow and Larson, (2011) define market efficiency as one in which prices always fully reflect available information and is a measure of the availability of information and opportunity (to all participants in the market) to effect transactions at minimal costs.

Countries with efficient goods markets produce the right mix of products and services within a balanced supply and demand trade. Healthy domestic and foreign market competition is an important driver in market efficiency (Kelly et al. 2011). Goods market efficiency has a direct effect on the entrepreneur as it allows maximum opportunity to both buyers and sellers to carry out transactions with minimum costs.

Having considered the environmentalist perspective on entrepreneurship, attention is now focused on the trait approach.

2.3.2 THE ENTREPRENEURIAL CHARACTERISTICS APPROACH

Many characteristics of successful entrepreneurs have been put forward. David McClelland (1961), a pioneer in entrepreneurial research identified three types of needs in human beings: the need for achievement (*n-ach*); need for power (*n-pow*) and need for

affiliation (*n-aff*). All these are present in all human beings to a different extent, and human behavior depends on which of these needs dominates (Nandi, 2008:58). Those with a high *n-ach*, focus on goals, seek to excel and improve performance and tangible results. People with a high *n-aff* are motivated by the need for relationships and being associated with a group. Those with high *n-pow* have huge desire to exercise control over others and to obtain status and power in organisation. McClelland (1961) identified entrepreneurs as having higher *n-ach* than non-entrepreneurs.

Deakins and Freel (2009) add characteristics such as ability to: identify opportunity; take risks; organise resources and factors of production, to the list. It is also generally accepted that the entrepreneur exhibits characteristics such as creativity and innovation that are required to extract value from ideas and turn them into opportunities that have commercial potential (Kariv, 2011:38; Allen, 2012:46).

All innovation begins with creative ideas (Kariv, 2011:72). According to Kariv (2011:73) entrepreneurs' innovative action manifest when they manage existing business processes and change them in response to changing environmental demands. Cassidy and Kreitner (2011:300) contend that entrepreneurial creativity requires actively trying to connect bits of information into new patterns and then evaluating and developing these small ideas into real business. For Allen (2012:47), creativity is key in enabling entrepreneurs to differentiate their business from competitors and is a critical skill for recognising or creating opportunity, and problem solving in a rapidly changing and uncertain environment. These traits and characteristic identified with entrepreneurship namely: the need to achieve; creativity; and the ability to visualise new business processes all imply a level of independence and flexibility from the entrepreneur.

2.3.3 THE SOCIAL-BEHAVIOURAL APPROACH

The socio-behavioural approach is another popular way to explain the entrepreneurship phenomenon. This approach originally focused on how entrepreneurs behave. For instance risk behaviour and so on. But these day, a prominent focus of the socio-behaviour approach is social entrepreneurship. According to Kariv (2011:291), social

entrepreneurs are 'change makers' that combine the passion of a social mission with business discipline of innovation and determination to achieve and see their effects of their interventions. Mariotti and Glackin (2012:14) highlight the role social entrepreneurs play as change agents by; adopting a mission to create, sustain and pursue social value and not just private value; engaging in a process of continuous adaptation and learning. They exhibit high levels of accountability for the social causes they serve and for the outcomes created by them.

An outstanding example of social entrepreneurship can be seen in the Grameen model, pioneered by Mohammad Yunus in the form of the Grameen ("rural") Bank of Bangladesh. As a social entrepreneur, Mohammad Yunus did something that challenged the banking world, by looking for the absolutely poor rather than for the rich; he found a way to flip conventional banking knowledge on its head (Mariotti & Glackin, 2012:14). The Grameen bank model removes the need for collateral as loans are made on the basis of collective responsibility of the group for repayment. The bank has a phenomenal 98.35 per cent loan recovery rate. Venter, et al. (2010:343) contend that the Grameen model has a number of advantages relevant to South Africa namely: greater accessibility to finance; more direct personal contact; little opportunity for corruption and misinformation; and builds an environment of trust and reciprocity.

The last approach to understanding entrepreneurship to be considered in this study is the process approach.

2.3.4 THE PROCESS APPROACH

The process approach to entrepreneurship evaluates the factors in the process of entrepreneurial creation. Although every entrepreneurial venture is different, it is useful to consider the entrepreneurial process in a generalised way since this offers a framework for understanding how entrepreneurship creates new wealth.

A *contingency* is something that *must* be present in the entrepreneurship process (Wickham, 2004:133). The entrepreneur is responsible for bringing these contingencies

together in order to create new value. Wickham (2004:133) postulates that the four contingencies necessary are: the *entrepreneur*, the *opportunity*, the *organisation* and the *resources*. The entrepreneur is the individual or team that drives the process forward. The opportunity represents the gap in the market that can be exploited by doing something differently from the way it was done before or better than the way it was done before. The activities and functions are moulded into some form of organisation by the entrepreneur. Finally, resources include the finances required, the people who contribute their effort, knowledge and skills as well as the assets which can be both tangible or physical and intangible such as brand, company reputation, good will and so on (Wickham, 2004:133).

Venter et al. (2010:132) describe the process model of venture creation as two types of opportunity recognition. In the first category - *externally-stimulated opportunities*, the decision to start a business precedes the recognition of an opportunity. Entrepreneurs in this category undergo continuous search for suitable business opportunities. In the second category, the entrepreneur has the business idea first and only later decides to create the venture through *internally-stimulated opportunity recognition*.

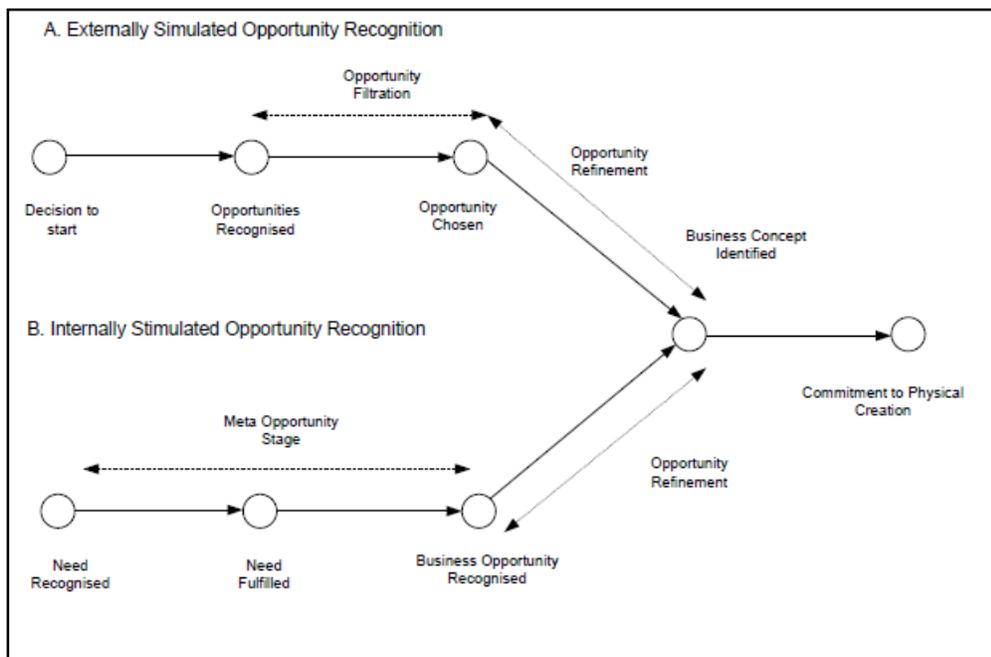


Figure 2.1: Externally and internally stimulated opportunity recognition

Source: Bhave (1994:229)

Both processes culminate in the identification of a business concept. The commitment to begin separates the invisible processes from the physical ones that follow.

As stated in the introduction, this study is concerned with enhancing the entrepreneurial process (new venture creation process) through the application of project management principles. It is therefore imperative to examine what the entrepreneurial or new venture creation process entails.

2.4 THE NEW VENTURE CREATION PROCESS

For Nieman and Nieuwenhuizen (2009:22), the new venture creation process consists essentially of four stages namely: *idea generation; planning; resource gathering; and implementation*. Variations of these four stages are provided by other authors. Hisrich et al. (2010) for example distinguish the four distinct phases as: *opportunity identification and evaluation; business plan development; determination of the required resources; and management of the resulting enterprise*.

In practice, no one stage is dealt with in isolation or is totally completed before the other phases occur. The entrepreneur cannot for instance identify and evaluate an opportunity without keeping in mind the end objective of the type of business desired. Kunene (2008:85) provides an adapted four stage model of the entrepreneurial process as shown in Figure 2.2. Although Kunene's (2008:85) model of the processes appear linear and discrete, in practice, the stages overlap (Hisrich et al. 2010).

The variation in the phases as depicted by different authors shows that conceptualisation of the entrepreneurial process depends on which process the particular author emphasises in each phase. For example whilst Kunene (2008) regards business plan creation and resource acquisition as part of the triggering event, the same are seen as distinct process events by Hisrich et al. (2010).

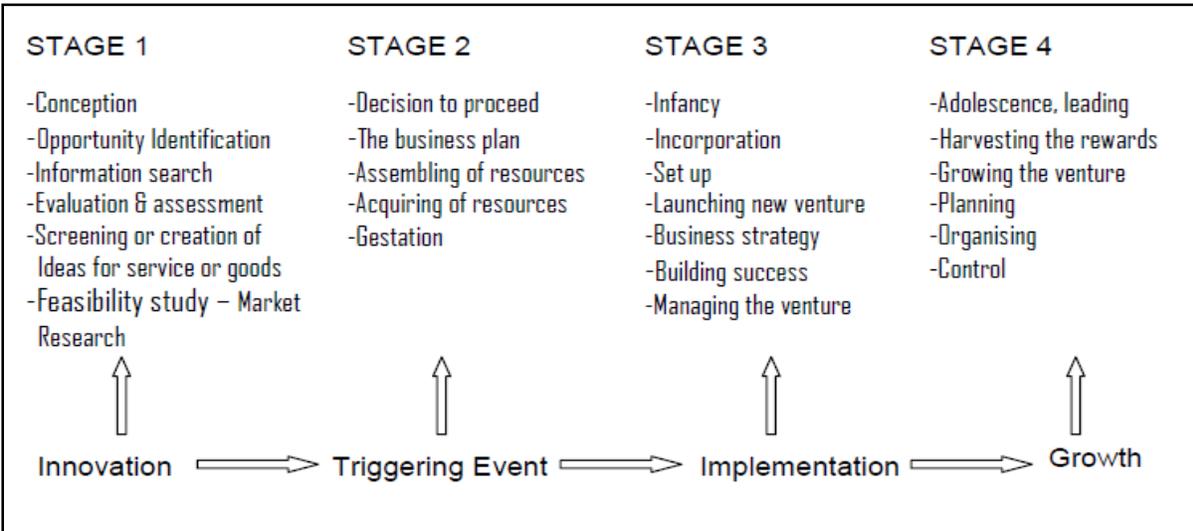


Figure 2.2: The four-stage entrepreneurial process

Source: Kunene (2008:85)

Thus, it becomes clear that regardless of configuration, the entrepreneurial or new venture creation process boils down to four stages which are captured in Kunene’s (2008) model above and these are discussed below.

2.4.1 IDEA GENERATION STAGE

The formulation of new ideas, creativity and opportunity identification are the cornerstone of the new business process (Kariv, 2011). These ideas do not necessarily have to be radical in their nature, but can constitute new ways of performing old functions (Barrow et al. 2005). Idea generation will benefit from few (if any) restrictions and little to no evaluation or criticism (Allen, 2012:57). The rationale is that either praise or criticism may limit the flow of additional ideas or restrict the direction of thought too early in the process. Instead, Allen (2012:57) suggests that initially, quantity should override quality, every idea should be captured at the individual level and then combinations of ideas should be undertaken. This total lack of rigidity at idea generation was a key reason for omitting it from any integration of project management principles that require rigidity.

Deakins and Freel (2009:270) consider the process of converting an idea into a business opportunity as a key aspect of business creation. It is also here that many elements such as a conducive economic environment; a risk taking culture; self-confidence of the nascent entrepreneur have to be in place to facilitate this process. Ideas need to be converted into opportunities by evaluating each idea by means of a feasibility and viability study. The feasibility study examines the applicability and logicity of the idea and the entrepreneur's ability to exploit the idea. The viability study focuses on the business profit potential of the idea within the market place.

The entrepreneurs past experience, training, education and skills development will influence the formulation of a business idea. Creative thinking is a necessary and important condition for idea formulation. Creativity is necessary for entrepreneurs to see their surroundings in a new light (Kariv, 2011:58). According to Deakins and Freel (2009:269), obtaining the right environment and the right team of individuals is an important aspect of creativity.

From the above, it becomes quite clear that the idea generation stage in the entrepreneurial process is highly unstructured and by its nature requires flexibility. In other words, the idea generation stage in the entrepreneurial process can be termed "not disciplined". This situation is what can lead to the perception that the entrepreneurial process may not be amenable to integration with conventional project management, which demands or necessitates a "rigid" way of doing things. However, as will be argued in the appropriate chapter, this is not necessarily the case at all stages of the entrepreneurial process.

2.4.2 THE PLANNING STAGE

Simply put, venture planning involves deciding on practically everything that has to be done to bring ideas into reality. These plans are formalised in a business plan. The economic downturn in 2006 has dampened the enthusiasm of many would be entrepreneurs as sources of funding to support new venture business has dwindled

internationally. One of the implications of a dwindling financial base is that entrepreneurs will need to have a solid plan and assets (DeBaise, 2010).

Planning is very important in business. A major benefit of planning is that it enables the entrepreneur to think through all aspects of the business and so reduce risks associated with the venture (Nieman & Nieuwenhuizen, 2009:22). According to Gruber (2007), planning can have a positive effect on venture performance, even in highly dynamic environments.

Despite the perceived importance of planning, literature on planning-performance relationships in small business reports mixed findings. One study showed that small firms that plan do not necessarily experience increased performance (Attahir & Kojo, 2005). Other studies indicate that entrepreneurs who wrote a business plan showed higher growth and performance in terms of the number of employees and profitability than those who did not (Haber & Reichel, 2007:125).

Although many businesses compile business plans, such plans may not always be followed through. According to Karlsson and Honig (2009:28) business plans are often merely a symbolic act, written in order to gain the legitimacy demanded and in most cases businesses did not implement their business plans. The same authors observed that discrepancies existed between the business plan and the firms' activities over time. In fact, one author wrote about business planning in a rather sarcastic manner.

“One of the most consistent things I hear entrepreneurs say is, “I have this great idea. And the advice they often get is to write a business plan and make it their bible. Most entrepreneurs firmly believe there is nothing better than a solid plan coupled with a great idea.” (Stibel, 2009)

Quite clearly, the above suggest that plans alone do not make a success of a business. However, it is by no means to suggest that spending time on business plans can be counter-productive as such a suggestion would be too farfetched. Gruber (2010:9)

acknowledging the dichotomous view on business planning offers a balanced view in suggesting that the planning/ performance results differ between emerging firms and established firms. According to this author, emerging firms face a high level of uncertainty and cannot base their performance on past experience and historical trends.

Regardless of misgivings, business plan can very useful if it is used as an on-going monitoring and strategic document to guide the entrepreneur through the entrepreneurial process. In this regard, Deakins and Freel (2009:295) opine that for a business plan to be most useful, it should be revised constantly in order to keep it as a relevant strategic document. The usefulness of a business plan was compared to a battle plan by Raiz (2011) in the following manner. "*Business plans last only as long as the first ambush, then you must think on your feet*". Raiz (2011) considers, thinking on ones feet, a vital skill for entrepreneurs.

The entrepreneur has to be flexible and able to react quickly to changes. However, the often rigid business plan demanded by funders can let the entrepreneur believe that success will be achieved once they have a plan. Rather, in line with Stibel (2009), it is safe to argue that it is the flexible planning process itself which is of value and not the plans.

Gruber (2007:803) suggests a *toolkit approach* to business planning as opposed to a rigid one-size-fits-all planning approach. This approach ties in with the researcher's contention that project management principles can be considered a set of "tools" to be used if and when appropriate.

2.4.3 RESOURCE GATHERING STAGE

Resources are needed to implement ideas. Resources gathering is more than consideration of the main resources such as finance, people and fixes assets; it is also about exploring how resources deliver profit and add value to the customer (Venter et al. 2010:410). Wickham (2004:11) argues that successful entrepreneurs have special ability to allocate scarce resources.

Deakins and Freel (2009:274) indicate that among the most important resources that contribute to success of new business is the right management team with complementary skills. They also view trust and support from family, friends and social networks (social capital) to be of key importance in entrepreneurial start-up and development. Related to this view, Chrisman et al. (2005) argue that the use of guided preparation improves performance of the venture. They define guided preparation as the assistance of an outside advisor with the activities in the resource gathering phase. Chrisman et al. (2005) reported that guided preparation has statistical and practical significant performance implications for new ventures.

Interaction with the labour market is an important impact on how SMME's operate (Down, 2010:89). This is significant in South African where the labour market has its own unique issues arising from the previous apartheid labour policies and the new dispensation's attempts to redress these.

The global market in which South Africa now competes offers expanded access to raw materials, intellectual property, human resources and other resources that companies require. Resourcing globally is no longer only the domain of multinationals but is increasingly best practice for small business (Mariotti & Glackin, 2012:252).

Wickham (2004:502) postulates a developmental approach to resource acquisition. According to Wickham (2004:502), in the initial stage, the entrepreneur must take great deal of responsibility for attracting the critical resources inputs. As the business grows, tasks can then become differentiated and the entrepreneur may have to relinquish some participation and focus more on the managerial issues. As the business grows further, roles and responsibilities can become more specialised and specific resource acquisition functions can emerge.

2.4.4 IMPLEMENTATION STAGE

This is the stage in the entrepreneurial process where the business is formed and can be called 'the entrepreneurial event'. It is here that the innovative idea (Hatten, 2006:36)

becomes a reality. A key element of entrepreneurial behaviour is the commitment at this point to bring the idea to life.

Business implementation involves one of the following: introducing new products, introducing new methods of production, opening new markets, open new supply sources, or industrial reorganisation.

This is a crucial stage for the new entrepreneur as he or she has to deal with customers, suppliers, cash flow, and other business stakeholders such as bank managers, investment bankers and other financiers. Other aspects that the new business entrepreneur has to deal with includes late payments from customers, payment of VAT, stock control, employment contracts for staff – to name a few (Deakins & Freel, 2009:276).

Several entrepreneurship scholars including Hatten (2006:36), Burke (2007:51), Deakins and Freel (2009:276) view the implementation stage as a key point in the entrepreneurial process probably because this stage is associated with increased risk. This stage is risky because the business goes from just being an idea to committing resources to bring the idea to reality.

At this point, the business 'starts-up' and begins operating. It is also where project management can play a significant role. Project management is defined as "the application of knowledge, skills and techniques to execute projects effectively and efficiently. It is a strategic competency for organizations, enabling them to tie project results to business goals — and thus, better compete in their markets" (PMI, 2013). This is precisely the skill set that the entrepreneur requires to implement the business idea and minimise risks associated with implementation. This study addresses the integration of project management into the entrepreneurial process.

2.5 SKILLS REQUIRED FOR ENTREPRENEURIAL SUCCESS

The skills required for each stage clearly differ. Kunene (2008) illustrates the skills required for each stage after reviewing the works of multiple authors. The findings of that study show that different skill sets are required at each stage of the entrepreneurial process. Table 2.1 shows a summary of the skills deemed necessary at each stage. Only motivation is considered key for all the stages. Significantly and surprisingly, project management does not feature at all in Kunene's research.

Table 2.1. Summary of important skills

Stage 1	Stage 2	Stage 3	Stage 4
Motivation	Motivation	Motivation	Motivation
Creativity		Creativity	
Marketing		Marketing	Marketing
Opportunity identification			Opportunity identification
	Resource gathering	Resource gathering	Resource gathering
		HR Management	HR Management
		Financial Management	Financial Management
		Technical skills	Technical skills
		Communication	
		Innovation	

Source: Kunene (2008)

In Subhash and Bose's (2010:6) view, the basic success ingredients for new start-up business are motivation, commitment and ideas in relation to market. These authors consider a good team as paramount for success. Subhash and Bose (2010) further view negotiation, influence and networking skills are necessary for all entrepreneurs particularly in a competitive environment. Subhash and Bose's (2010:6) view are illustrated in Figure 2.3.

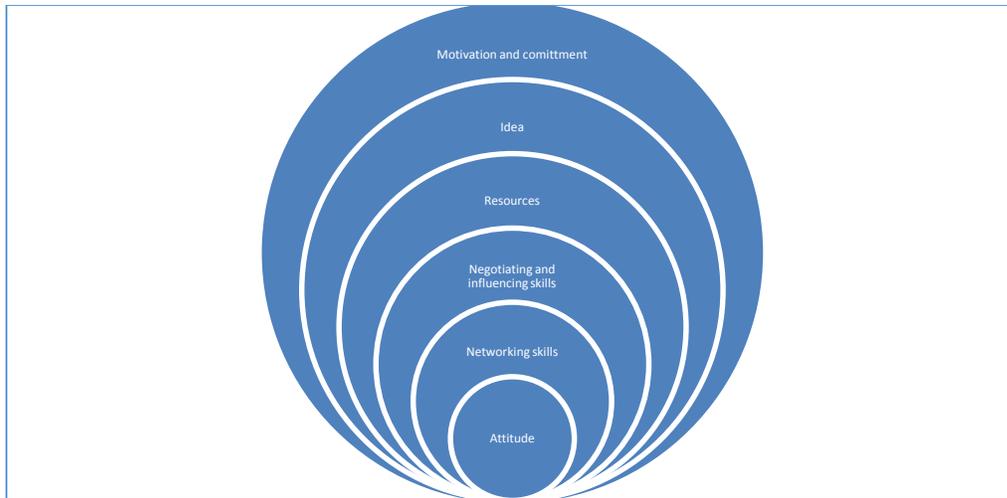


Figure 2.3: Skills portfolio required for New Venture creation

Source: Subhash & Bose (2010:6)

2.5.1 BUSINESS MANAGEMENT SKILLS FOR ENTREPRENEURIAL SUCCESS

Burke (2006:19) distinguishes between managing entrepreneurially and small business management. According to Burke (2006:19), entrepreneurial management is essentially the management of change whereas small business management is the management of business on a day to day basis. However, changes that take place in the small business would also typically require entrepreneurial management skills until the new product or service is consolidated at which time the management aspect would be dominant.

Burke (2006:18) highlights growth in the business as the ‘Achilles heel’ for the typical entrepreneur. According to Burke (2006:18), while the business is still small the entrepreneur is able to manage everything on ad hoc basis, but with rapid growth, a more formalised management approach is required.

Burke (2006:19) views small business management and entrepreneurship management as complimentary as the business swings through cycles of entrepreneurial change. Entrepreneurial change typically includes the start-up of new business, the development of new products, the introduction of new management systems and the penetration into new markets. Typically each of these change cycles would be followed by a consolidation

of the change, requiring small business management skills, until the following change cycle is introduced. These lead to more efficient and effective company performance and greater turnover.

Garvin (2004) views the new venture process as going through different stages, at which critical questions relevant to each stage are asked and furthermore that each stage requires a different management approach and different talents and perspectives. The entrepreneur and visionary who is equipped to guide the new venture in the early forming stages is often poorly suited to guide the new venture through the expansion and integration stage. This is because as the business expands, new problems emerge that often require production manager type skills.

Burke (2006:19) suggest a number of management techniques that are required by the entrepreneur in order to manage a new venture effectively. The list include:

- Project management skills - necessary to plan and control the new venture;
- Small business management skill - necessary to manage on a day-to-day basis;
- Team building and leadership skills - necessary to inspire, build and lead a team;
- Risk management skills - necessary to identify, assess, monitor and respond to risk and uncertainty that arises during the business start-up and management.

Figure 2.4 illustrates the interaction between these skills set. Developing a business idea into a venture requires effort and discipline. To change or enhance the business also requires effort and discipline. Project management is a framework that can help with this task. To keep the business running efficiently and effectively requires small business management skills. Project management and small business skills are thus complimentary in the new venture creation process. The centre of Burke's intersecting core management skills, informs that the entrepreneur should have the capability to adapt to variable business processes and changes that occur throughout the new venture creation process.

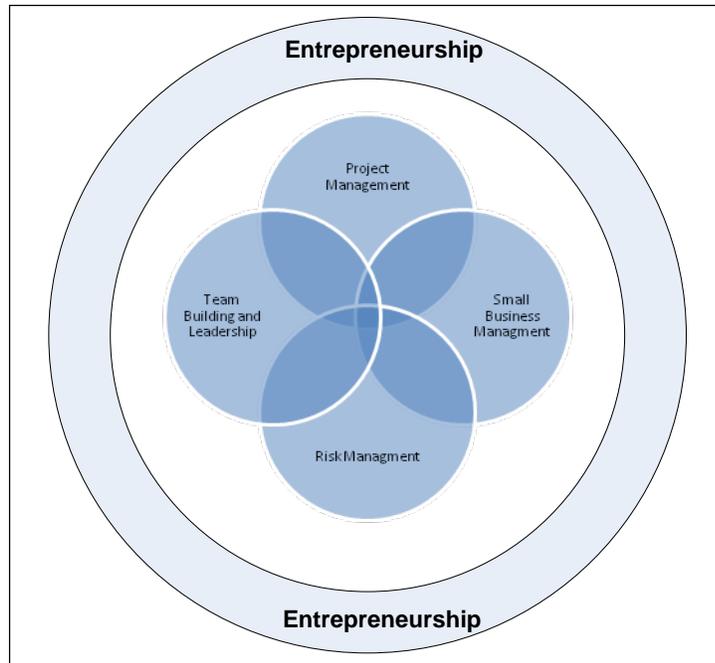


Figure 2.4: the core management skills

Source: Burke (2006:19)

Support for different skill sets required for new venture creation success is comes from research by Kickul et al. (2009). According to Kickul et al. (2009), individuals with intuitive cognitive style are more confident in their ability to recognise opportunities than they are in the planning, assessment and resource allocation. On the other hand individuals with the analytical cognitive style are more confident in their planning, assessment and resource allocation than they are in their ability to unearth and recognise new ideas. This research confirms that each stage of the new venture creation process requires a specific set of skills or abilities. It is the contention in this study that these subtle differences are of less importance than gaining the intersecting skills propounded by Burke (2006).

2.5.2 PROJECT MANAGEMENT SKILLS

Burke (206:22) considers the setting up of a new venture to have all the characteristics of a project and so requires project management skills. Burke (2006:35) warns that lack of project management skill in new business development can handicap implementation of novel ideas and opportunities. Thus, the notion that project management can and

should play a part in the new venture creation process is given credence. The task of this study is the determination of how, when and to what extent project management should be applied to the new venture creation process. It must be however be noted that a 'one-size-fits-all' approach will not achieve improvement in new venture creation. Gruber's (2007) research suggests that an adaptive project management approach is necessary to provide for continuous change and re-direction depending on external and internal factors and the nature of the founding environment.

2.6 START-UP FAILURE

The new venture creation is a complex one and there are many pitfalls along the way (Garvin, 2004:1) which can cause the launching of a new venture to fail. A business is considered to have failed when it closes down due to: actions such as bankruptcy, foreclosure or voluntary withdrawal from the business with a financial loss to the creditor or it is involved in court action such as receiving protection from creditors (Hatten, 2006:18). Failure can arise because the customer is unwilling to pay for the product or service or there is insufficient demand for them, there can be technological failures, operational failure. Institutional barriers can also cause new venture failure. A competitor's entry into the market can cause the rules of the game to change and thus new business failure. In Garvin's (2004:1) experience, these setbacks are unavoidable and no amount of risk and quality management or efficient management will anticipate them all.

Deakins and Freel (2009:274) consider the reasons for failure to be complex but cite lack of professional advice and under-capitalisation as major impediments to successful business implementation. Hisrich et al. (2010:19) agree that there are many reasons for business failure. However, they contend that the most common is insufficient experience. For Hisrich et al. (2010:19), failure can be good as more may be learned from business failure. Unfortunately, South Africa does not appear to support entrepreneurs who have failed as it is more difficult for them to obtain finance and they are often demonised by the

press. This is in contrast to the US. For example in the Silicon Valley, venture capitalists are prepared to support people who have learned from their mistakes (Turton et al. 2012).

Signs that can appear within the business to warn the entrepreneur of impending failure are:

- *Decline in gross margins.* The gross margin represents the percent of total sales that the company retains less the direct costs incurred by producing the goods or service. This requires a comparison over three consecutive periods.
- *Decrease in net margin.* Net profit is the ratio of a company's net profits to revenue. This considers the fixed expenses arising within the new venture and again requires looking at trends over three consecutive periods.
- *Irregular cash flows.* Makes budgeting difficult and may be a sign that there is a business problem.
- Sales decrease and drop in market share.
- *Core employees leave.* When employees become aware of the problems, the good ones find other jobs and the venture is left with the weaker ones

(Nieman & Nieuwenhuizen, 2009:318).

Ways need to be found to prevent business failure (or ensure start up success) especially at start up stage where failure is said to be highest and many models have been proposed for this purpose.

2.7 MODELS FOR START-UP SUCCESS

Key findings by GEM (2012) are that there are four key entrepreneurial venture launching models.

2.7.1 THE SILICON VALLEY MODEL

The Silicon Valley Model (SVM) comes about through breakthrough products and services that are created by high-quality university research with dedicated centres that

also have the capability to commercialise them. According to Turton et al. (2012), South Africa has institutions that are making strides in laying the foundations for the SVM. However, South Africa lacks a professional investor network that is easily accessible to entrepreneurs. An inadequate understanding of intellectual property rights is among the main hindrances to the growth of the SVM model in South Africa (Turton et al. 2012).

2.7.2 THE MOTHERSHIP MODEL

This model unlocks the entrepreneurial talent anchored in existing businesses, allowing and assisting them to create successful new business. The anchor firms offer support to the start-ups they have created by functioning as suppliers, customers or distributors. This model has many success stories in South Africa such as Discovery and OUTsurance. In this context, it is commendable of companies such as Anglo Zimele and Anglo American South Africa's enterprise development and investment fund have supported 228 small businesses which provide jobs to 10419 individuals and collectively turned over more than R1.3 billion in a year.

2.7.3 THE EXTERNAL TRIGGER MODEL

In this model, an external event releases many skilled or experienced workers and creates business opportunities. This can happen through layoffs, new legislation, policy changes and other triggers, and these events can be both negative and positive. This model assumes that the affected community understands and are able to exploit the factors triggered by the event. Some analysts believe that uncertainties in developing economies provide many opportunities for this model. For example, Broad Based Black Economic Empowerment (B-BBEE) could be seen as a positive or negative external trigger. It can be argued that South African companies abide by B-BBEE codes because they are compelled by legislation instead of investigating ways to use the B-BBEE codes and finance offered by the government as a business incentive (Turton et al. 2012).

2.7.4 THE LOCAL HERO MODEL

This model is based on the success of a well-known entrepreneur (local hero) in the community who has a similar background as would-be entrepreneurs and with whom they can identify and who influences their mind set and attitude. Soweto's people for example may look up to Dr. Richard Maponya who started from humble beginnings and is well known for building a business empire despite the restrictions of apartheid (Turton et al. 2012). The same can be said of Dr Herman Mashaba the founder of 'Black Like Me'.

2.7.5 SUMMATIVE ASSESSMENT OF START-UP MODELS

The above models discussed have strengths and weaknesses but they do provide a means to improving start-up success rate. There is no obvious model applicable to South Africa and more research is necessary to identify how these models can be adapted to suit the South African situation.

There is a common perception in South Africa that the path to success is through formal employment. This is particularly so for the previously disadvantaged as Black professional are enticed into the corporate world with large package incentives. Unfortunately, South Africa finds itself in a situation where attraction to corporate and professional carriers works against the entrepreneurial spirit (GEM, 2012). So, entrepreneurship is very relevant to South Africa.

2.8 RELEVANCE OF ENTREPRENEURSHIP TO SOUTH AFRICA

Official data (Stewart, 2010) shows that one in four working-age South Africans was unemployed in early 2010. During this period, Stewart (2010) reported that the number of people with a job dropped by 171,000 on the quarter, to 12.8 million. Similar figures have been reported over the years. This places new venture creation at pivotal point in addressing the challenges of joblessness and redressing the legacies of the past. Clearly, the literature review has so far revealed that entrepreneurs are the ones who create new businesses that enable job creation and positively affect a country's economy.

A strong minded, inventive entrepreneur can grow ventures into business that can have a tremendous and lasting impact on economic growth and job creation. Microsoft's Bill Gates is a famous international example. In South Africa, pioneers such as Raymond Ackerman transformed the retail industry. Southern Sun and Sun City grew from the vision of Sol Kerzner. Herman Mashaba founded and grew *Black Like Me* in 1985, against all odds and revolutionised the African hair care market (Herrington, 2011; Venter et al. 2010).

New venture creation is regarded as the corner stone of the so called 'second economy'. The following extracts from a statement issued by the Minister in the Presidency clearly spell out the importance of new venture creation in South Africa.

.....the central objective and mission is to set the country on a higher and sustainable growth trajectory by the end of the mandate period (2014) with an expanded and more diversified economic base, with unemployment and poverty having been halved, (compared to 2004) and with greater equity and social cohesion.

(Presidency, 2009).

Similarly, in a statement to the 13th general conference of UNIDO, Dr. Rob Davies, the then South African Minister of Trade and Industry, made the following statement:

...the focus should be on coordinated programmes aimed at strengthening capacity of both the developed and developing countries to continue to develop industrial capacity and create decent jobs".

(Davies, 2009).

The above statements speak to the government's commitment to creating the legislative and financial framework and supporting structures to assist the entrepreneur and nascent business.

In order to fulfil the government mandate, the DTI relies on a group of specialised regulatory and financial development agencies and institutions to address the financial,

legal and supportive requirements for new venture creation. The most significant of these institutions is the Small *Enterprise Development Agency* (SEDA). SEDA was established in December 2004 by merging three organisations, namely the Ntsika Enterprise Promotion Agency, National Manufacturing Advisory Centre (NAMAC) and Community Private Programme (CPPP). SEDA, promotes and provides business development and support to small enterprises through its national network. It also implements programmes targeted at business development in areas prioritised by the government.

2.9 STATE OF NEW VENTURE CREATION IN SOUTH AFRICA

Much as the government has made efforts to stimulate new business creation (entrepreneurial activity), these efforts do not seem to be yielding optimal results. As reported earlier in the problem statement in Chapter 1, the country's TEA which is a reflection of the percentage of the population engaged in 'nascent entrepreneurship' (he setting-up and new business ownership and still doing business after 42 months) is not very encouraging. South Africa's TEA may have improved from 5.29% in 2006 to 8.9% in 2010 and 9.1% in 2011 (Turton et al. 2012); however, South Africa still lags behind other efficient- driven economies. Differences also remain within demographic groups. Indians and Whites have the most entrepreneurs (1.6:1 and 1.7:1) respectively compared to the general population while Blacks and Coloureds have fewer entrepreneurs (0.91:1 and 1.2:1 respectively) compared to the general population (Turton et al. 2012).

The influx of people from other African countries may be blamed for the increased unemployment but the truth too is that, many of these immigrants have become vibrant entrepreneurs employing indigenous South Africans in their own right and even hopefully inspiring the larger population to entrepreneurial activity (Turton et al. 2012).

An issue that has serious implication for entrepreneurship in South Africa is the country's entrepreneurial outlook which can be inferred from a country's competitiveness index. Kelly et al. (2011) defines competitiveness as: "*the set of institutions, policies and factors that determine the level of productivity of a country*". The report uses the Global

Competitive Index (GCI), a highly comprehensive index for measuring national competitiveness based on microeconomic and macroeconomic foundations of competitiveness.

With a CGI of 4.3, South Africa's is ranked 54 out of 139 economies, and is the highest ranked country in sub-Saharan Africa. South Africa benefits from its relatively large economy by regional standards and is ranked 25th in overall market size. The country scores well on measures of quality of institutions and factor allocation, such as intellectual property protection, ranked 27th, property rights, ranked 29th, the accountability of private institutions (3rd), and goods market efficiency (40th). The country's financial market development (ranked 9th), is particularly impressive and is indicative of a high confidence in South Africa's financial markets. These and other attributes make South Africa the most competitive economy in sub-Saharan Africa (Kelly et al. 2011).

However, Kelly et al. (2011) identified the following weaknesses that need to be addressed in order to improve its competitiveness. Among the most problematic weaknesses are labour market inefficiency including inflexible hiring practices, lack of flexibility in wage determination and poor labour practices making up the bulk of this poor ranking. The business cost of crime and violence is perceived to be high and there is the sense that the police are unable to provide protection from crime. In addition, the health of the workforce remains a major concern and obstacle to doing business in South Africa.

The above figures paint a mixed view of the entrepreneurial outlook in South Africa. Clearly, the basic infrastructure elements are in place on which to build entrepreneurship and new ventures. The obstacles identified do not appear to be insurmountable and with vision and will, South Africa has the capacity and the people to take this forward.

2.10 SUMMARY

There is on-going support for the idea that new ventures create new jobs and act as a catalyst for economic growth and national competitiveness. In South Africa, where official

data show that one in four working-age was unemployed in 2010, the need for new venture creation is particularly significant for reducing poverty and creating a stable society. It is clear that the South African government is committed to new venture creation as evidenced by the establishment of support structures to assist and finance the establishment of new ventures. South Africa also has many examples of entrepreneurial role models in the likes of Raymond Ackerman, Sol Kerzner and Herman Mashaba, to name a few. South Africa's TEA has steadily improved from 5.29% in 2006 to 8.9% in 2010 and 9.1% in 2011. Although good by regional standards, South Africa still lags behind other efficient- driven economies.

There are many and varied definitions for entrepreneurs and entrepreneurship. The most salient features led to entrepreneurship to be operationally defined as *the process of pursuing a potentially risky new venture that triggers the production of novel goods and/or services leading to financial rewards*. Similarly, an entrepreneur is operationally defined as *an individual who pursues an idea or ideas of a potentially risky new venture that triggers the production of novel goods and/or services leading to financial rewards*.

Three approaches to understanding entrepreneurship were selected from literature and discussed as they were deemed most relevant to this study. The environment was considered particularly relevant to the South African new venture landscape as the government and private institutions are acutely aware of the need for a supportive environment and have consequently put structures into place to support the nascent entrepreneur.

Entrepreneurship literature is in broad agreement that the new venture creation process consists, essentially of four stages: idea generation, planning, resource gathering and implementation. Each of these stages require specific skills and management techniques. Entrepreneurial management and small business management skills are deemed necessary throughout the new venture creation process with the emphasis placed on one or the other depending on the amount of change that the new business is going through.

It is clear that setting up a new venture is a complex and risky undertaking and that a diverse skill set is required by the would-be entrepreneur.

With the exception of Burke (2006), there is little literature support for the necessity of project management in the entrepreneurial process. Burke (2006) clearly articulated that the new venture creation process has all the characteristic of a project. It is the purpose of this study to show that project management techniques can be integrated into the new venture creation process to improve the likelihood of creating a successful business.

The next chapter examines the project management process in detail in order to isolate aspects that can be conveniently integrated into the new venture creation process.

CHAPTER 3: OVERVIEW OF THE PROJECT MANAGEMENT PROCESS

3.1 INTRODUCTION

The previous chapter dwelt in-depth on the entrepreneurial process. This chapter reviews the project management process literature to highlight the main principles and techniques in order to fully comprehend how they can be used to enhance the entrepreneurial process.

Demir and Kocabaş (2010:164) contend that *“More and more organizations have embraced project management as a key strategy for remaining competitive in today’s highly competitive business environment”*. It can be inferred from this statement that project management is of increasing importance to organisations and is contributing to their strategic direction. Project management principles and techniques are therefore being applied to business for success.

In a survey conducted by PricewaterhouseCoopers LLC (PwC) in 2012, as many as 97% of respondents believe that project management is critical to business performance and organisational success and enables business growth (Schroeder, 2011).

Organisational success requires that a business be broken into projects, so that each project can be effectively and efficiently managed (Demir & Kocabaş, 2010: 164). This view is also shared by Schroeder (2011) who states that systematic project-based working rather than a more ad-hoc approach gives organisations greater control over their business implementations and outcomes.

The above illustrate the increasing role of project management techniques or principles in the management of businesses in general. Not surprisingly, Larson and Gray (2011:10) declared: *“Project management is no longer a special-need management. It is rapidly becoming a standard way of doing business.*

The increasing emphasis on project management within business gives credence to this study - which contends that project management should be an integral part of the new venture process.

3.2 MEANING AND NATURE OF PROJECT MANAGEMENT

3.2.1 DEFINING A PROJECT

The Project Management Institute's (PMI) guide to project management PMI (2008:442) defines a project as *"a temporary endeavour undertaken to create a unique product, service or result"*. This implies that the undertaking has never been done quite the same way before and that it produces a unique result within a specific time span. Wysocki (2012:6) defines a project as: *"a sequence of unique, complex, and connected activities that have one goal or purpose and that must be completed by a specific time, within budget, and according to specification"*. These two definitions complement each other. The PMI (2008:442) emphasises the temporary and unique nature of a project and Wysocki (2012:6) highlights the complexity of the interrelated processes within financial constraints. Oosthuizen and Venter (2011:3) characterise a project as: *"any planned, temporary endeavour undertaken to create a unique product, service or other complete and definite outcome (deliverable) within a limited time scale and within limited resources – limited budget"*. It can be inferred from this definition that projects come in many guises and produce varied and different outcomes. As an example, a change in a business process or processes that can occur in the new venture creation process can be seen as a project with improved process flow as output.

From the above definitions, it becomes apparent that a clear goal or objective; fixed time scale; a team of people united around a common purpose; uniqueness and change are central defining aspects of projects.

3.2.2 DEFINING PROJECT MANAGEMENT

PMBOK (2008) formally defined project management as: “*The application of knowledge, skills, tools and techniques to project activities to meet the project requirements*”. The 2013 edition of PMBOK defined project management as: “*the application of knowledge, skills and techniques to execute projects effectively and efficiently. It’s a strategic competency for organizations, enabling them to tie project results to business goals — and thus, better compete in their markets*”. The apparent broadening of the definition to include ‘achievement of goals’ supports the contention of this study that project management can enhance the new venture creation (new business) process. Richardson (2010) and Burke (2007) agree that project management offers a structured approach to managing projects and managing the fundamental issues of defining schedule, budget and resources to produce the required result.

Based on these views, this study defines project management as: *a structured approach to applying knowledge skills, tools and techniques to effectively manage schedules, budgets and resources to achieve desired business result in accordance with client requirements.*

3.2.3 SKILLS REQUIRED OF A PROJECT MANAGER

Synthesizing research outcomes from a number of studies, Pinto (2010:136) concludes that several commonalities are relevant to effective project management. These are that the project manager: must be good communicators; must possess the flexibility to respond to ambiguous situations with minimum stress; should work well with and through their project teams; should be skilled at various influencing tactics.

Larson and Gray (2011:17) opine that two broad skills areas are prominent within the actual execution of projects namely the technical and sociocultural dimensions. To be a successful project manager, both skills must be mastered. The technical dimension consists of the formal, disciplined and logical part of the process which can represent the ‘science’ of project management. Included in this dimension are clear project scope statements, creation of the deliverables and work breakdown structure that facilitates the

planning and monitoring of the project progress. The second dimension is the sociocultural aspect of project management which Larson and Gray (2011:17) suggest can represent the 'art' of managing a project. This contrasts with the structured technical world of planning and involves a much more uncertain and often contradictory world during implementation. This usually involves setting up an organisation within a larger organisation environment to bring together diverse talents and expertise, working together to complete the project.

Meredith and Mantel (2012:108) stress that the success or otherwise of a project manager is tied to the manager's ability to: acquire adequate non human resources; acquire and motivate personnel; deal with obstacles; make trade-offs; maintain a balanced outlook; communicate broadly; negotiation; and lead. As can be seen from Chapter 2, there is not a single item in this list that is not required for successful entrepreneurship. Entrepreneurship and project management are therefore ironically intertwined – entrepreneurship being flexible and project management requiring flexibility.

Acquiring adequate resources

Resource are often understated, partially due to the natural optimism regarding what can be accomplished by relatively few resources or sometimes deliberately, to reduce project tender costs, in order to ensure the project is accepted. Like in entrepreneurship, insufficient resources can occur due to project uncertainty as resource acquisition is deferred until greater certainty regarding when and what resources will be required is forthcoming (Pinto, 2010:131; Meredith & Mantel, 2012:108).

Acquiring and motivating personnel

The project manager usually has to acquire people from elsewhere in the organisation or from outside of the organisation. These resources must be negotiated for, usually with the functional managers who may be reluctant to release their best resources. These diverse people from different functional areas then have to be motivated and moulded into a cohesive team that will be capable of delivering the project (Pinto, 2010:132). The

same conditions prevail for entrepreneurship when the entrepreneurial team is being assembled.

Dealing with obstacles

The definition of a project includes uniqueness, which in turn can present unexpected occurrences which no amount of planning can completely circumvent. In the initial stages of the project, obstacles tend to be associated with resource acquisition. As the project nears completion, obstacles tend to be clustered around last minute schedule and technical changes as well as uncertainty as to what happens to team members when the project is handed over (Meredith & Mantel, 2012:111). The literature review in Chapter 2 points out that the entrepreneurship journey is obstacle laden and the entrepreneur requires resilience to overcome these obstacles.

Making project goals trade-offs

The project manager has to preserve a balance between the traditional triple constant of *time*, *cost* and *performance*. The priority given to one of these three constraints determines the response from the project manager at various stages of the project. (Maylor, 2003:62). Meredith and Mantel (2012:112) consider that the project manager has to make trade-offs between project progress and process, that is the smoothness of the running of the project team and technical progress which must balance the project with the organisation goals. For example near the end of the project, the project manager may insist that team members work on aspects of the project for which they are not well trained or do not like doing. An additional trade-off identified by Meredith and Mantel (2012:113) is making choices that require balancing the goals of the project with that of the organisation. The overlap here with the entrepreneurial journey is that, the new venture creator too may come up with several ideas but cannot execute all at the same time hence may need to sacrifice some ideas.

Maintaining a balanced outlook

The reality is that projects often run into problems, be they technical, resource or schedule related, that affect the psyche of the team and stakeholders. The project manager has to

cope with these and maintain a balanced outlook on the project progress and goals, not naively assuming everything will be all right but neither assuming failure is inevitable no matter what is done (Meredith & Mantel, 2012:114). Similarly, the entrepreneur cannot be expected to leave anything to chance. As said previously, careful planning and tenacity are the hall marks of entrepreneurs.

Breadth of communication

A stakeholder is anyone who is affected by the project or who can influence the project's success or failure (Brown & Hyer, 2010:8). The project manager will communicate with many groups throughout the project. This ranges from explaining project progress and issues to top management, to communicating to the project team itself. It is also necessary for the project manager to liaise with stakeholders in the outside world, regarding the project, such as subcontractors and legal services (Meredith & Mantel, 2012:118). In the South African context, local community participation and consultation is particularly relevant to the project management communication, as is dealing with multiple cultures. The communication concept can also be extended to virtual teams, where people are linked by technology and communication is email based, meetings are video-conferenced or text messaged (Oosthuizen & Venter, 20011:323).

Negotiation

The aforementioned demands made on the project manager require that he or she be a skilled negotiator. Pinto (2010:208) notes that much of the project manager's life is taken up in bargaining sessions of one type or another and that stakeholder management can actually be viewed as continuous effective negotiation amongst multiple stakeholders. Meredith and Mantel (2012:118) emphasise that there is almost no aspect of the project manager's function that does not relate directly to negotiation. Although Meredith and Mantel (2012:114) concede that every manager must deal with these special demands, for the project manager they are more frequent and critical. Similar to project management, one cannot think of any aspect of entrepreneurship that does not require negotiation. Right from idea generation, through planning, resource gathering to

establishment, the entrepreneur will have to negotiate. The entrepreneur will have to negotiate with, suppliers, customers, employees and so on.

Leadership

Schwalbe (2009:20) acknowledges that the terms project leader and project manager are often used interchangeably but that there are distinct differences. Managers usually deal with day to day details of meeting specific goals. “They bring about order and stability by formulating plans and objectives, designing structures and procedures, monitoring results against plan and taking corrective action when necessary” (Larson & Gray, 2011:340). A leader focusses on long-term objectives, determines and shares the vision of the project and inspires people to attain these goals.

Leadership in project management involves recognising and altering the direction or the project and articulating this so that the team align with the new direction. Larson and Gray (2011:340) concisely articulate that management is about coping with complexity while leadership is about coping with change. However, it is necessary for project managers to take on the roles of *both* a manager and a leader. The role of strong leader or strong manager is dependent on the type of project as well as the particular phase in which a project finds itself. Larson and Gray (2011); Richardson (2010) and Schwalbe (2009) agree that projects that are well defined - that is, both the solution and the scope of the project are known, (low risk) require little leadership whilst in contrast, changes in for instance scope, product features, performance, or budget calls for more leadership. To be most effective, project managers require a changing mix of skill, depending on the nature, phase and change requirements (Larson & Gray, 2011; Richardson, 2010:224; Schwalbe, 2009:20).

Having explained what project management means and the skills required to undertake project management, one can now take a historical view of the development of the concept of project management.

3.3 HISTORICAL OVERVIEW ON PROJECT MANAGEMENT

It is hard to imagine that projects that have been undertaken throughout history from the building of the pyramids, to some of Europe's greatest cathedrals, the great pyramid of Giza, the great wall of China, and so on could have been completed without some type of project management being involved (Maylor, 2003:6; Kloppenborg, 2009:5).

3.3.1 STAGES IN THE HISTORICAL DEVELOPMENT OF PROJECT MANAGEMENT

It is generally accepted that what is called modern project management emerged as a formal discipline in the 1950's and 1960's, where techniques for planning and controlling schedules and costs were developed for aerospace and construction projects (Kloppenborg, 2009; Stretton 2007). Project management can be considered to have developed through four stages (Richardson, 2010).

Stage 1: *From the mid-1940 through to the 1960's.* According to Richardson (2010), this first major era of modern project management involved the atomic bomb and other complex military projects of World War II that saw the beginning of modern project management when these strategic activities were translated into formalised documented approaches. Richardson (2010) recounts that a need emerged to appoint a project manager to take responsibility for project objectives. As a result, two pioneering techniques for planning and monitoring (Critical Path Method [CPM] and the Project Evaluation Review Technique [PERT]) were developed in the USA during this time.

According to Oosthuizen and Venter (2011); Richardson (2010) and Stretton (2007), CPM was developed at Du Pont, Newark to cater for complex projects involving shutting down chemical plants for maintenance and then restarting them again whilst the US Navy special projects office developed the basics of PERT to handle the hundreds of contractors working on the POLARIS submarine missiles systems. Stretton (2007) mentions that it was at this time that project cost management was added to project time management and some integration of the two took place. During the same period, project

management was still primarily associated with the construction, aerospace and defence industries and professional project management bodies were formed independently in Europe and North America (Stretton, 2007:9).

Stage 2: *The developments of the 1970s and the 1980s.* Richardson (2010) intimates that this period (1970's and 1980's) involved major expansion of hardware and software technologies particularly in the USA, that opened the door for improving the planning and control technologies and opened up the field of user-based computing. Recent literature adds that these many individual applications of project management in the 1970's, led to attempts to integrate them into standard principles and practice (Stretton, 2007; Oosthuizen & Venter 2011). The PMI's development of its PMI was a significant step in this direction. The systems concept at this time led to the development and refinement of distinctive project management techniques including Work Breakdown Structure (WBS), Organisational Breakdown Structure (OBS), responsibility assignment matrices and 'earned value' methods (Stretton, 2007:10).

Stage 3: *The 1990's* was a time of proliferation and maturation of information tools and techniques as well as user literacy project costs were being captured and there was an increased awareness of project activity in general and senior management began to recognise the need for formal reporting processes and metrics related to project execution (Richardson, 2010:15). There was increased effort to represent project management as a structured discipline and the publication in 1996 of the PRINCE 2 methodology as a generic methodology for all UK government projects, was a significant contribution in this area (Richardson, 2010:15). Project scope, quality, risk, human resource management, communications and contract/procurement as related to time and costs were significant additions to project management 'functions' (Oosthuizen & Venter, 2011).

Stage 4: *The 2000's and beyond.* A number of developments in project management in recent years bear significance for this study. These events are now briefly discussed.

Agile Project Management: On February 2001, the Agile Alliance was formed and published the Software Development Manifesto. This was specifically introduced as a response to the challenges of managing projects with loosely defined scopes and high levels of uncertainty, that software project development managers typically faced. The approach stresses adaptive planning and flexible response to change (Gray & Larson, 2011:593). These are typically the challenges facing new venture entrepreneurs.

Project management and strategy: Gray and Larson (2011) and Maylor (2003) indicate that the 2000s has emphasised the strategic role that projects play in organisations. For these authors, Projects are the mechanism through which strategy is implemented and every project should have a clear link to the organisation's strategy and can thus provide a source of competitive advantage (Gray & Larson, 2011:23; Maylor, 2003:7).

The customer: In the modern approach to project management, the literature including Gray and Larson (2011) and Maylor (2003) indicate that the customer plays a key role throughout the project management process. In fact the agile approach *depends* on effective customer collaboration and the customer becomes an integral part of the project process.

Risk: The subject of managing risk has received increasing attention the last number of years. The focus traditionally been on the uncertainty regarding task durations and costs. Recently however, focus has moved to distinguish between **risk** - *known unknowns* and **uncertainty** - *unknown unknowns* (Meredith & Mantel, 2012:64). Research by Lechler et al. (2012) highlights two important issues for this study. The first is that classical project management does not distinguish between risks and uncertainties and the second being that economists associate uncertainties with entrepreneurial behaviour in an economy and that without uncertainties entrepreneurial profits would be impossible. Uncertainty and risk is a constant in today's business world and these factors have bearing on contemporary project management.

Talking about today's business environment evokes the need to touch on some contemporary project management issues.

3.4 CONTEMPORARY PROJECT MANAGEMENT

A 'one size fits all' approach to project management is untenable within the current project milieu. This is primarily because of the difficulty in specifying complete requirements at the beginning of a project. This difficulty in turn, stems from changing market conditions that require rapid response to remain competitive, unclear business objectives, actions of competitors and many other factors (Wysocki, 2009).

3.4.1 THE FOUR QUADRANTS OF PROJECT MANAGEMENT

Wysocki (2009) built a so called *four quadrants of project management* to explain the current context of project management around two variables, goal and solution, as shown in Figure 3.1 below. According to Figure 3.1, the goal is either completely known (therefore specifiable) or not known. Similarly, the solution is either completely known (therefore specifiable) or not known.

		SOLUTION	
		Clear	Not Clear
GOAL	Clear	1	2
	Not Clear	3	4

Figure 3.1: The four quadrants of project management

Source: Wysocki (2009:300)

Wysocki (2009) elaborates that boundaries between “clear and not clear” are conceptual and not quantifiable and that as the project progresses and the solution becomes clearer, the project’s quadrant can change.

The range of projects that reside in quadrant 1 are simple projects that have been repeated in some form previously. They are familiar to the organisation and are characterised by well-developed templates for all or most parts of the project phases. The requirements and solution are well known and so a complete *work breakdown structure* (WBS) can be generated. For Wysocki (2009), projects in this quadrant – the *traditional project management principles*, work well.

According to Wysocki (2009:300), the range of projects in quadrant 2 are characterised by clearly defined goals with most of the solution known and the rest must be unearthed during the Project Management Life Cycle (PMLC). The PMLC approach chosen for projects in this quadrant should enable the discovery of the solution as part of the PMLC model (Wysocki, 2009:300). Due to the solution unknowns, the complete WBS cannot be generated and so the risk factor in these projects is higher (Wysocki, 2009:300). According to Wysocki (2009:300), the business value of these projects must be high enough to warrant the risk involved and so their successful completion is critical to the business. It is obvious from these specifications that the traditional project management approach cannot be used for the new venture creation process as what is needed is an approach that *incorporates* uncovering and discovering the solution. Projects like new venture creation that fall into this quadrant require some form of *agile project management* (APM).

In quadrant *three and four*, neither the solution nor the goal is completely known. These project fall into the research and development category and are characterised by high risk. These projects are typically carried out by pharmaceutical firms developing new medication.

Table 3.1: Routine or Novel Strategic Projects by Lenfle and Loch

	Routine execution	Novel strategic project
Goal	Defined and given from above	General vision and direction, but detailed goals not known and partially emergent
Activities	Can be articulated and derived from experience	A limited set of activities emerge as project unfolds
Capabilities	Capabilities exist and are identifiable and thus able to be sourced	Capabilities do not necessarily exist nor are they necessarily specifiable
Uncertainty	Variations in plan and known project variables can be catered for and managed	Unforeseeable uncertainty: new variables, new effects, new actions, which could not be anticipated at the outset

Source: Lenfre and Loch (2010:45)

Wysocki (2009:300), Lenfle and Loch (2010:45) consider all projects to fall into different categories differentiated certain variable. As shown in Table 3.2, Lenfle and Loch (2010:45) categorise projects into one of two different categories: *routine execution* or *novel strategic projects* based on the differentials *goals*, *activities*, *capabilities* and *uncertainty*. The significance of Table 3.2 for this study is that new business venture creation can be *uncertain*, are usually *not routine* and thus fall into quadrant 2; or into the ‘novel strategic projects’ as envisioned by Lenfre and Loch (2010:45).

3.4.2 THE PROJECT AND PRODUCT LIFE-CYCLE

A clear understanding of the project life cycle and the product life cycle and their interaction is necessary for any attempt to apply project management principles to the new venture creation process which is at the heart of this study.

3.4.2.1 *The project life cycle*

One of the key aspects of a project is the “Project Life Cycle” (PLC). A project life cycle is defined as a series of phases required to deliver a project outcome. Project managers, or their organisations can divide projects into phases in order to provide better management control as well as tying them with the on-going operations of the organisation carrying out the project. It is widely acknowledged that projects follow the five phases of: *selection; initiation; planning, delivery and control; closure and handoff to customer* (Kloppenborg, 2009; Brown & Hyer, 2010; Pinto, 2010). Variations in nomenclature of these phases, is

common. No matter how small or large or complex projects may be, they all follow this progression over time as shown in Figure 3.2.

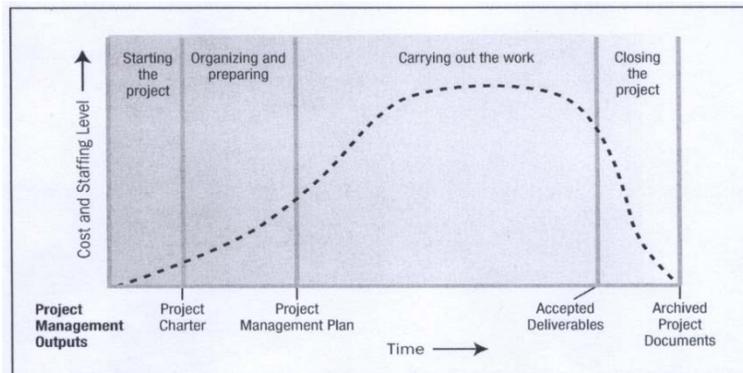


Figure 3.2: The project life cycles

Source: PMI (2008:15)

Many organisations develop their own specific life cycle phases (PMI, 2008:15). PMI (2008) considers that there can be three basic phase-to-phase relationships. The *sequential* relationship; where one phase can only start when the previous phase is completed. An *overlapping* relationship when one phase starts before the previous phase is completed (this is also called fast-tracking). The PMI (2008:22) also defines the third relationship, an *iterative* relationship, where the planning takes place for one phase and planning for the next phase is carried out while the current phase is being executed.

3.4.2.2 *The product life cycle*

The product life cycle depicts the stages that a product goes through from when the idea of the product was first mooted, until it is removed from the market. The PMI (2008:18) categorises the product life cycle as: “consisting of generally sequential, non-overlapping product phases determined by the manufacturing needs of the organisation”. Burke (2011:36) describes the five stages of the product’s life cycle (PrLC) as: *development, introduction, growth, maturity and decline*. Koppensteiner (2007) describes the stages as: *innovation, product development, adaption, sustainment and disposal*. The second description will be used as it more closely resembles the business process life cycle.

3.4.2.3 *The project life cycle and product life cycle interaction*

The PMI (2008:18) states that the PLC can occur in one or more phases of the PrLC. The PLC can intersect with the PrLC at various points throughout its life cycle as the diagram below illustrates. It seems clear that any project management approach to business development should have the capability and flexibility to incorporate the two life cycles as seamlessly as possible. Research carried out by Sharon, et al., (2008) within the engineering discipline lends credence to this argument. Sharon, et al., (2008) argue that the conceptual separation between process methods and tools within the development and sustaining of complex systems hinders the effective handling of the PLC's and PrLC's within an enterprise.

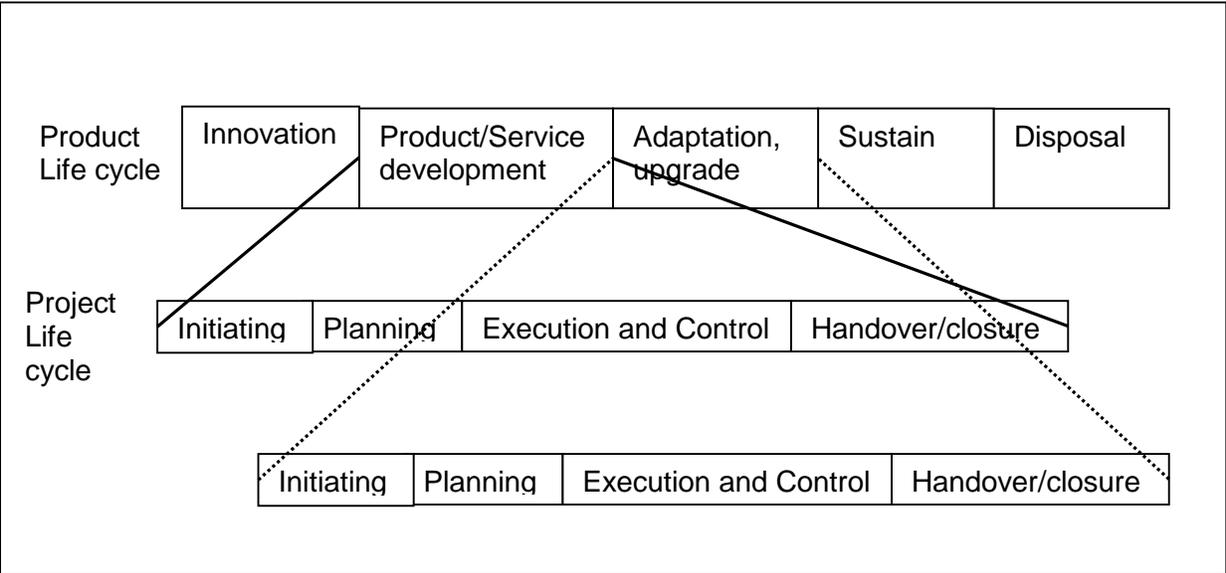


Figure 3.3: Mapping the PLC to the PrLC

Source: Koppensteiner (2007)

Having examined how the concept has evolved over time, it is also important to understand how the subject of project management can be and has been studied or approached.

3.5 APPROACHES TO PROJECT MANAGEMENT

Approaches to managing a project within an organisation, can depend on a number of factors, such as the level of project management expertise, the extent to which projects form part of the organisations core business activities and the organisation's experience in managing projects. These factors influence the organisation's need to formalise their project management processes and capability and to constantly strive to improve these processes. This section considers various two (the methodologies and the systems) approaches that can be adopted to understand hence implement, maintain and improve project management.

3.5.1 THE SYSTEMS APPROACH

Meredith and Mantel (2012:9) view the "systems approach" as one of the revolutionary changes that organisation management has undergone in the last two decades. The essence of the system approach is that when one acts on a part of an organisation or system, it is certain that other parts will be affected. A project can be seen as a system of interlinked phases and plans that can function separately to produce deliverables at each phase and can be combined to produce the entire project's (system) objective. Meredith and Mantel (2012:103) assert that the adoption of the systems approach is crucial for the project manager and is an important distinction between how functional managers and project managers carry out their tasks. To understand a component, or phase of a project system, the project manager must understand the system of which the component is part. To understand the project system, the project manager must understand the larger environment of which it in turn is part of.

The new venture creation process can also be considered a system of interrelated parts in which changes in any one part can have a significant effect on the other parts; it is also subject to the wider environmental changes. The systems approach should therefore be kept in mind during the new venture creation itself and when considering applying project management principles to the process, as is done in this study.

3.5.1 THE PROJECT MANAGEMENT METHODOLOGIES APPROACH

Westland (2003:3) views a methodology as a list of guidelines, approached or to-do lists and forms that can be tailored and used throughout the project life-cycle. Westland (2006:xvi) contends that the number one cause of project failure is the lack of adoption of a formal project methodology which provides structured and repeatable process for initiating, planning, executing and closing projects effectively. According to Burke (2011:81), all projects are subject to some form of methodology to manage their different components. These methodologies can vary from ad hoc to a formal structured methodology. At the one end of the project methodology continuum is the ad hoc methodology that is characterised by ad hoc projects that would be adopted by an inexperienced project manager or an organisation that undertakes a once-off project without the necessary experience and support structures. An organisation with experienced project manager(s) and a formal documented and approved project management system constitute the other end of the project management continuum (Burke, 2011).

The project manager using an *ad-hoc* methodology would use intuition rather than structured methods, carry out little or no forward planning and would apply a different method each time a project is carried out. The *formal project methodology* is characterised by the use of methods that have been successful in the past and found to be efficient. These methods are supported by tradition and market success. Burke (2011:82) acknowledges that between these two extremes, varying forms of methodologies exist such as the *de facto* approach used by experienced project managers who have developed methods that have worked and been successful for them in the past but not necessarily received formal approval by way of a standardisation process. The various project management methodologies will be discussed later. However, regardless of the methodology followed there is a basic process followed. This basic project management process is now examined in detail.

3.6 THE BASIC PROJECT MANAGEMENT PROCESS

The project management process can be described in terms of phases they pass, project control and monitoring and project risk management.

3.6.1 THE PROJECT MANAGEMENT PHASES

As stated earlier, every project moves through a series of phases, also known as process groups. These phase are now discussed.

3.6.1.1 *Project initiation phase*

This is the conceptual phase in which the business case is identified and justification for the project is made. The processes to start a new project or a new phase of an existing project are initiated and performed. Resources and infrastructure support are established and approval for the next phase is obtained. The output for this phase is the *project charter plan*.

The main purposes for a charter are to: authorise the project manager to proceed with the next phase; assist the project team and the sponsor to develop a common understanding of what needs to be done in the project; make it easier for the project sponsor to commit to proceeding with the project and to screen out obviously poor projects early (Burke, 2006; Westland, 2006; PMI 2008; Kloppenborg, 2009). The charter constitutes the justification for doing the project and is the first indication to the project manager regarding the nature of the business and therefore a guideline to the project approach to be used.

3.6.1.2 *Project planning phase*

At this stage the project scope has been documented, the project manager and his team have been appointed and should have taken part in the initiation process. The outcome for this phase is a fully integrated phase plan which is an essential part of the project

management process and often marks the difference between success and failure. It is now that a detailed planning is done to ensure that the activities that are to be performed in the execution phase are properly resourced, sequenced, executed and controlled. (Burke, 2006; Westland, 2006; PMI 2008; Kloppenborg, 2009).

The focus in this phase is on the nine knowledge areas as set out in the PMI guide. The knowledge areas and the main activities associated with them are given below (Westland, 2006; PMI 2008; Kloppenborg, 2009; Schwalbe, 2009). These areas are now briefly discussed.

Integration management: This knowledge area involves co-ordinating all the other project management knowledge areas. Deliverables for the integration management knowledge area are: *creating team contract* and developing the *project management plan*. The project plan is the central document by which the project is formally managed and covers the overall scope, time and cost baseline in order for the project required to realize the benefits as specified in the business case. For small projects involving a few people over a couple of months, a project charter, team contract, scope statement and a Gantt chart might be the only planning documents that are needed. A large project would have a detailed project management plan and separate plans for each knowledge area (Westland, 2006:56; Schwalbe, 2009:106). “*Because all project plans should help guide the completion of the particular project they should be only as detailed as needed for each project*” (Schwalbe, 2009:109).

Scope management: The main planning tasks performed as part of scope management include:

Scope planning: this is the process of creating a project scope management plan and formulates the approach regarding the management of the scope throughout the project life cycle. The output of scope planning is the *scope management plan*. (Kloppenborg, 2009:133; Schwalbe, 2009:114; Richardson, 2010:07).

Scope definition: This is the process of developing a detailed project scope statement, which defines the baseline for performance measurement, project control and assists in communication task responsibilities. A key feature of scope definition is the creation of the *work breakdown structure* WBS. The WBS is a tool used in most projects in order to progressively divide the work into smaller and smaller pieces, and so define the total scope of work. It is the foundation document in project management as it provides the basis for planning and scheduling and controlling the project. It also linked with the organisation units in order to establish which units are responsible for doing the work (Kloppenborg, 2009:117; Schwalbe, 2009:116; Richardson, 2010:107; Gray & Larson, 2011:112).

Time management: This involves the processes required to ensure that the project is completed on time. Essentially this process produces a schedule of activities as well as the relationship between these activities usually in the form of a network diagram. The network diagram describes the different possible routes (options) in terms of effective project execution that the project could take to realise the desired results. The critical path analysis falls within this process as a tool to assist in eliminating schedule overruns (Kloppenborg, 2009:169; Schwalbe, 2009:130).

Cost management: The processes required in this knowledge area are to ensure that the project is completed within budget. The output for this process is the cost management plan which establishes the criteria for planning, structuring and controlling project costs (Kloppenborg, 2009: 236; Schwalbe, 2009:147).

Quality management: The primary purpose of project quality management ensures that the project will meet the material standards of the product outcome – do they live to the expectations envisaged. Key aspects of this process are a quality management plan, quality matrices and quality checklist. The quality management plan specifies the actions necessary to implement the quality policy as well as responsibility and timelines (Kloppenborg, 2009:296; Schwalbe, 2009:167; Richardson, 2110: 269).

Human Resource management: People carry out and manage projects, and in the end determine the success of the project. Human resource management is concerned with making effective use of the people involved with the project. Major outputs of this process include a project organisational chart, a responsibility assignment matrix, a resource histogram and a staffing management plan (Burke, 2007:304; Schwalbe, 2009:169).

Communications management: Some project managers assert that 90% of their task is communication (Schwalbe, 2009:233). Communications planning is the process of determining the communication and information needs for the project stakeholders and the output of this process is the communications plan. It is important that the type, detail and frequency of the communication is appropriate to the needs of the specific stakeholder. That is, that the right information gets to the right person at the right time. (Kloppenborg, 2009:109; Schwalbe, 2009:235; Oosthuizen & Venter, 2011: 294).

Risk management: PMI (2008:275) defines project risk as an uncertainty that can have a negative and a positive effect on meeting the project objectives. There is a clear link between project risk and project objectives and it is widely accepted that project risk is a key contributing factor to project success. Because of the importance attached to the risk process it is discussed further in a later section.

Procurement management: This is the process to determine what resources and/or service needs are to be acquired at the best price, as well as when and how to do this. Contract management is a key consideration in any procurement process. The main approaches to contracts are: *Fixed-price contracts*, *Cost-reimbursable contracts* and *time and material contracts*; (Kloppenborg, 2009:318; Schwalbe, 2009:190; Burke, 2011:53).

3.6.1.3 *Project execution phase*

This phase follows the planning phase and is the longest and most resource intensive of the project phases. This is the phase in which the actual deliverables are produced and presented to the customer for acceptance. The processes carried out in this phase ensure that planned deliverables meet customer expectations. The processes are performed as defined in the project management plan in order to meet the project specifications. The output for this phase is the actual deliverable as specified (Westland, 2006:10; PMI 2008:16). One of the most crucial aspects of this phase and of the project manager's tasks are monitoring and control. The project manager monitors and controls the activities, resources and expenditure against the planning done in phase 2. Changes to the plans are managed by change control and the plan is adjusted accordingly (PMI, 2008:16; Westland, 2006:12; Oosthuizen & Venter, 2011:172).

3.6.1.4 *Project closure phase*

This process group finalises all the activities across all the process groups and it is just as important as any other phase although many organisations do not give it the attention it require and is often incorrectly perceived as not adding value to the projects deliverables. Project closure also requires resources from a budget that may be depleted at that stage. Project closure involves preparing a comprehensive file comprising an evaluation and results of the project. This file is used as input to future projects so that their execution can be improved upon. The project is reviewed and accepted by the customer who accepts responsibility for it. Resources are re-assigned back to the functional groups or in the case of a project organisation assigned to other projects (PMI, 2008:16; Westland, 2006:12; Oosthuizen & Venter, 2011:172).

3.6.2 PROJECT CONTROL

Most projects have an element of uncertainty attached to them and although project plans are set-up with the best information available at the time. Change is an inevitable part of any project. Change management is the on-going process by which changes to the

project scope, deliverables, timescales and resources are managed. Change control is project specific and deals with the process of determining and accounting for changes to the project baseline. Project teams establish a change control system, in order to define how documentation will be controlled and managed when changes. *Scope creep* is the phenomenon whereby the original requirements subtly change over time

The central theme of this study is that change is not only inevitable; it is invited as the only way to unearth the best solution. The change control envisaged in the previous section is too cumbersome and inflexible to cope with unexpected changes and does not fit the paradigm of a rapidly changing business environment.

Wysocki (2009:328) considers that a major weakness of all linear project management life cycle models is that knowledge gained from one process group, cannot be used to revise and improve the deliverables from a previously completed process group. Lenfle and Loch (2010:21) consider that the phased approach has influenced the project management discipline, in that the project manager focuses only on project execution of strategic decisions made by top management and does not participate in these decisions. They further reason that the linear phased approach has handicapped many businesses' ability to pursue innovative projects requiring iteration and parallelism.

3.6.3 PROJECT RISK MANAGEMENT

Project risk management is widely accepted as fundamental to project success. Pinto, (2010:221) simply defines risk as any possible event that can negatively affect the viability of the project. All projects involve risk; there is always at least some level of uncertainty in the outcome of a project. The Microsoft Project Gantt chart may imply a level of comfort which is not necessarily valid (Kendrick, 2009). (Kendrick, 2009:1; Kloppenborg, 2009:262).

Risk management consists essentially of:

Step 1. Risk identification. This is the process for determining the specific risk that can reasonably expect to occur on a project. It is the foundation for successful risk

management, which in turn must be the key to successful projects. Risks can fall into a number of categories, namely: Financial risk; technical risk; commercial risk; execution risk; contract or legal risk (Kloppenborg, 2009:265; Schwalbe, 2009:177; Oosthuizen & Venter, 2011: 231; Pinto, 2010:224).

Step 2. Risk assessment. This step is involves analysing each risk and deciding which risks are major and need to be managed carefully and minor ones can be managed with less concern. The project manager attaches a reasonable likelihood of each of the risks occurring. Risk impact matrix can be used to prioritise the risks so that the team can focus on those risks which need more attention (Kloppenborg, 2009:265; Schwalbe, 2009:177; Oosthuizen & Venter, 2011: 231; Pinto, 2010:224).

Step 3. Risk response development: This involves developing contingency plans to minimize the potential impact of those risks that threaten the viability of the project. Responses to risk can be classified as: Mitigating risk: that is reducing the likelihood of the risk or reducing the impact of the risk. Avoiding risk: that requires changing the project plan to eliminate the risk. Transferring risk: that is, to pass risk on to another party. This is typically done via subcontracting or insurance. Retaining risk: this is a conscious decision to accept the risk of the event occurring.

Step 4, Risk monitoring and control. This involves executing the risk reduction plans, identifying new risks and evaluating their effectiveness throughout the project life cycle.

(Pinto, 2010: 224; Larson & Gray, 2011:213; Meredith & Mantel, 2012:249)

In those rare projects that have little uncertainty, the project manager is primarily a coordinators and scheduler, using the standard work breakdown and critical path techniques, and experience to plan the tasks. Human Resource Management is applied to clarify responsibilities, identify conflicts and define deliverables. Monitoring and control consists of comparing budget, schedules and deliverables against the project plan,

coordinating stakeholders and suppliers and enforcing deliveries. (Meyer, Loch & Pich, 2002:61). The greater the uncertainty inherent in a project may mean that the team will have to redefine the tasks and/or the structure of the plan during the project execution. Meyer, Loch and Pich (2002:62) state that clarity should be obtained up front regarding how changes should be managed. If this is not done, the project manager resorts to fire fighting to get the project back on track.

3.6.3.1 *Risk classification*

The domain of risk is broadly divided into two categories, referred to as: known risks and unknown risks. *Known risks* are those that can be anticipated and logically expected to occur. These types of risks can be reasonably dealt with and minimised using accepted risk management techniques. *Unknown risks* are events that are not usually predictable or identifiable. They can occur randomly throughout the project. The only difference is, that unknown risks are only perceived and handled after the fact. For successful projects, risks need to be identified, and consistently and proactively managed (Richardson, 2010:299). It is significant that Richardson (2010:300) recognises that risks that are opportunities have the potential to benefit the project and the organisation as opportunity risks lie at the heart of new venture creation.

3.6.3.2 *Project risk and business opportunity*

Research conducted by Lechler et al. (2012) on projects, revealed that uncertainties (unknown- unknowns) were at times perceived as risks (known known) and risks were identified as uncertainties. Following the arguments of economists that uncertainties are a necessary condition for the existence of opportunities that can improve or at least change the value proposition of projects, they argue that it is important to distinguish between the two types of risks. Lechler et al. (2012) further identify the need for the project manager to be able to consider the potential opportunities and evaluate the alternatives that would create business value from the uncertainty environment. They conclude that the selecting of project managers with business perspective may be an important factor, not only for the success of the project, but also to maximise the potential benefit of the

project for the enterprise. The research conducted by Lechler et al. (2012) lies at the core of the blending of project management and new venture creation. Significantly, they consider classical project management to be conceptually limited in its ability to address opportunity arising from uncertainty nor does it include the notion of maximisation of these opportunities.

Having discussed the basic project management process that is generic to all methodologies, one can now discuss the various contemporary methodologies that can be classified as traditional, agile, and adaptive.

3.7 PROJECT MANAGEMENT METHODOLOGIES

3.7.1 TRADITIONAL PROJECT MANAGEMENT

Traditional project management contends that the probability of success is assured when emphasis is placed on thorough planning up front and then executing the plan with corrective actions when deviations occur. In the planning of the project, problems and risks of schedule and financial overruns are identified and assessed before the project begins and estimates are made regarding resources and finances. A baseline budget and schedule is then created and control is achieved by comparing the actual progress and budget against the planned. Deviation from the plan are corrected for and managed via change control and other mechanism (Larson & Gray, 2011:584).

3.7.2 AGILE PROJECT MANAGEMENT

Agile project management first emerged in the mid 1990's in response to the realisation that a one-size fits all projects management methodology did not meet the needs of certain types of projects, in particular, projects whose end product is not well defined and evolves over time. Its focus was on software development projects as a means to adapt to changing requirements as more information is unearthed by the process (Larson & Gray, 2011:583). Highsmith (2010:10) cites examples from various industries such as pharmaceutical and automotive industries that are adopting some form of agile

development in order to remain leaders in their industries. Kettunen (2009:409) sees agility as a means for more applicable operations in many industries facing unpredictable changes in product demands and customer needs.

According to Highsmith (2010:20), success can no longer be defined in the traditional manner of project management and illustrates this evolution of success by means of the commonly accepted triangle of scope, time and cost of project management. Figure 3.4 shows Highsmith's (2010:20) view of these changing requirements. In the case of the leftmost "iron triangle", scope is considered to be fixed and cost and time varies, although in practice project managers attempt to keep them all fixed (Highsmith, 2010:20). The second triangle represents an early view of agile development where time was fixed (time boxed) for specific processes (iterations) but scope was allowed to vary. Highsmith's (2010:20) views this approach as still conforming to the constraints of time, cost and scope. The third triangle, the agile triangle, measures the value *to the customer*, the quality – that which is required to deliver continuous value *to the customer* and the constraints (still time, scope and costs). Highsmith (2010:20) emphasises that constraints are still important but that they are not the goal of the project; rather *value* is the goal and time, scope and cost may need to be adjusted as the project progresses in order to increase customer value.

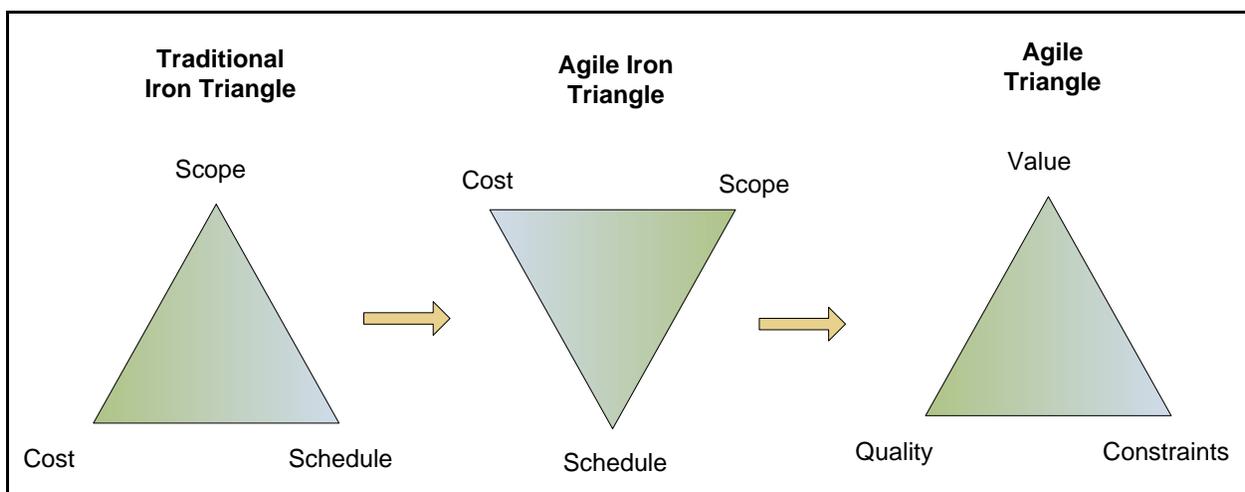


Figure 3.4: The evolution to an agile triangle

Source: Highsmith (2010:21)

The agile approach is more responsive, than the traditional approach of forcing the customer to accept what was specified at the beginning of the project (regardless of what has been learned in the meantime) and charging them excessively for change requests.

With reference to software projects, Leau et al. (2012) cite the ability of agile methods to deliver results quickly and inexpensively on complex, poorly defined projects, as one of the major differences between agile and conventional methods. Agile emphasises business return on investment (ROI) as an absolute priority. Leau et al. (2012) consider agile methods to excel traditional methods in small to medium project development, it is still better to adopt traditional approach for large-scale projects. In this study, the focus is on SMME's which would constitute small to medium sized projects, indicating an agile deployment methodology.

3.7.2.1 Agile Methods

Agile project management is related fundamentally to the process of iterative development. Iterations are short time boxes that typically last from one to four weeks. As can be seen in Figure 3.5, the goal of each iteration is to produce a working product that demonstrates some features to the customer. At the end of each cycle, adjustments are made and a different iterative cycle begins. Each iteration is reviewed and evaluated by customers and stakeholders to determine progress and re-evaluate priorities to ensure the product is still in line with customer goals and based on this information, the following iteration cycle begins.

The process, graphically illustrated is described.

- A prioritised list of requirements (features) that are to be built are represented by (1) in the figure. The priorities are assigned by the business user and ranked according to their strategic importance.

- A subset of these features are then selected for development or action, represented by (2) in the figure. This selection is based on the highest priority of the remaining features.
- This subset (2) undergoes analysis, development, testing and evaluation during a short, fixed “time box”. The duration of these iterations varies, but 2 to 4 weeks is the normal time.
- Daily communication and risk assessment takes place in the assessment cycle (4). These meetings are usually time boxed to 15 minutes and each team member reports on:
 - what they have been working on since the previous meeting.
 - what they will be working on that day.
 - any problems or issues that are impeding their ability to progress.

These short meetings feedback on progress and also enable team sharing of information. Risks are also mitigated by the project manager. Each iteration, (5), requires that the previous iteration be evaluated and documented in order to improve (Griffiths, 2004:2).

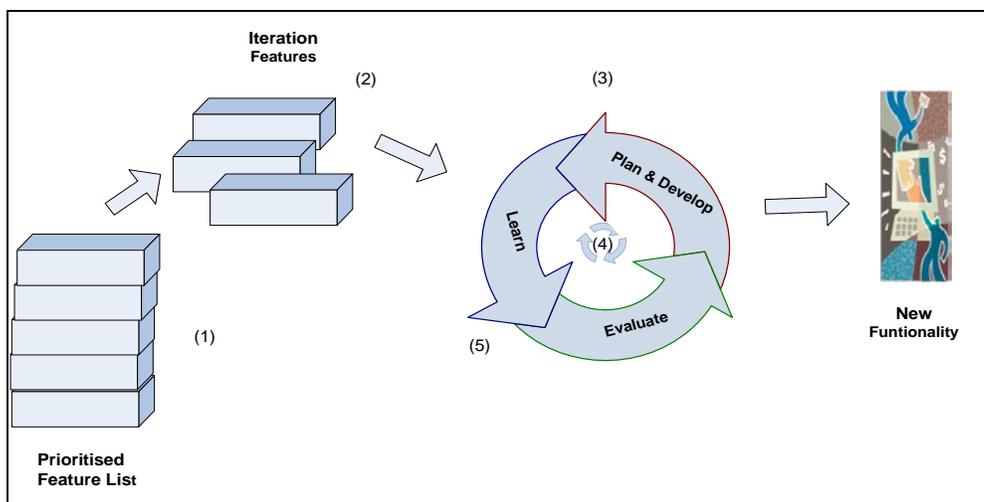


Figure 3.5: The basic elements of the agile execution and control process

Source: Griffiths (2004)

A number of agile methodologies are available in the software industry, such as extreme programming (XP); Crystal Methods and SCRUM. However, these methodologies are all designed for software development. A methodology not built solely for software development project management is the adaptive project framework developed by Robert Wysocki which uses many of the tools of traditional project management but differs in that the plan is not built at the beginning of the project but instead it is built in stages at the completion of each cycle (Wysocki, 2007).

The relevance to this study is that the new venture creation process exhibits the characteristics of uncertainty that cannot evidently be managed by traditional project management. However it is self-evident that the marrying these two concepts is necessary if one is to apply a project management approach to new venture creation.

3.7.2.2 Agile project management versus traditional project management

Agile project management is mainly associated with Information technology as numerous sources attest (Cohen, 2004; Augustine et al. 2005; Beck et al. 2006). Chapter 2 on new venture creation underlines the necessity of quickly changing and adaptation to changing circumstances and new constraints as they are unearthed in the new venture creation process agile project management outside of the scope of software development.

Various authors advocate the use of agile and traditional methods (Augustine et al. 2005; Sliger, 2007; Fernandez & Fernandez, 2009). These authors promote the use of these as co-existent methodologies, that is, traditional methods would be used for projects where there is a high degree of predictability. These methods, as shown previously, concentrate heavily on up-front planning; tracking actual progress against these plans, and taking corrective action when plans deviate. Agile methods will be used for software development as the environments are more volatile, as well as organisations adapting to changing technology, markets and social conditions (Augustine, et al. 2005). Sliger's (2007:5) approach is that the two philosophies are quite compatible and that the PMI is a guideline of best practices and organisations must apply accordingly.

Sliger (2007:6) proposes an application of the process groups in TPM, PMI (2008) to Agile project management as shown in Figure 3.6.

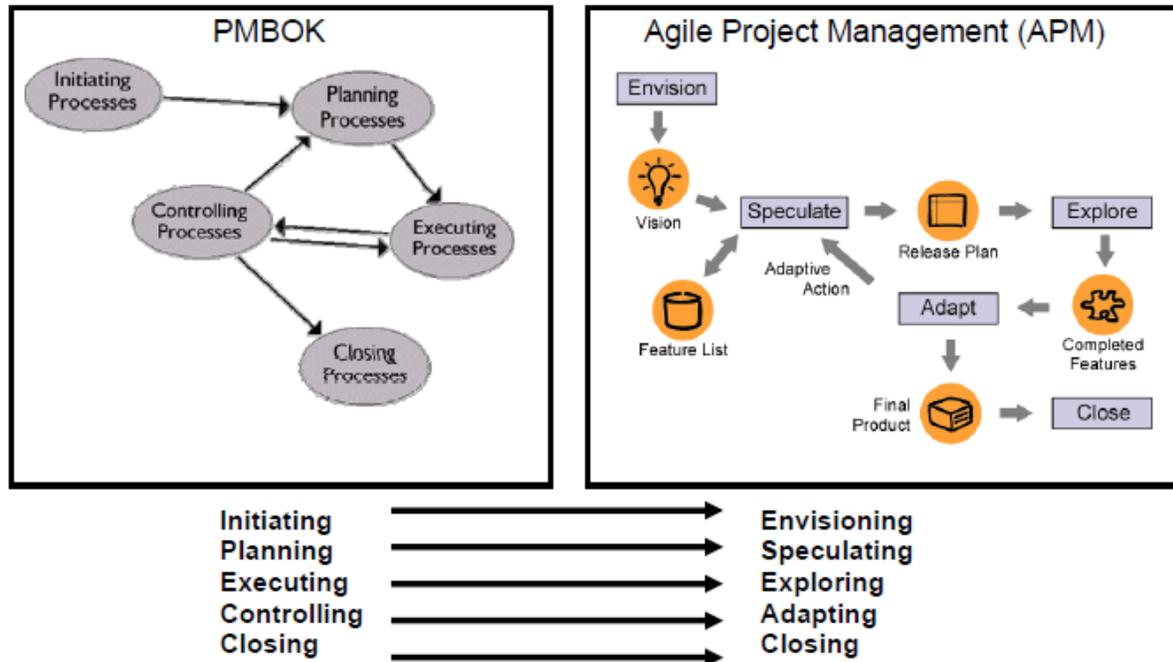


Figure 3.6: PMI's project management process mapped to Highsmith's agile project management framework

Source: Sliger (2007:5)

3.7.3 THE ADAPTIVE PROJECT FRAMEWORK (APF)

For this study, a number of different approaches to bridge the gap between the two seemingly conflicting philosophies of new venture creation and project management were investigated. A number of possibilities emerged from the engineering discipline for new product development. These were eventually discarded due to their complexity, which was judged to detract from the goal of achieving a business objective. The APM developed by Wysocki was eventually chosen as best fit to marry these two philosophies.

As was noted earlier, the APM life cycle models have been designed primarily for software development projects. Wysocki (2009:332) saw this as a serious shortcoming and it led him to develop the APF for application to any type of project. Figure 3.7 portrays how the

adaptive project management life cycle (APMLC) model is structured. This model consists of a number of phases that are repeated in cycles, with a feedback loop after each cycle is completed. Each cycle proceeds, based on an incomplete and limited understanding of the solution. Each cycle learns from the preceding cycle and this learning is used to plan the next cycle, in an attempt to converge on an acceptable solution. The last phase in the group, may release a partial solution, dependent upon the clients discretion. (Wysocki, 2009:332). The adaptive PLC models expect and accommodate frequent change and they succeed by learning and discovery by the team and importantly *with* the client. Because change is seen as intrinsic to the project, a minimalistic approach to planning is employed. In fact planning is actually done just in time. As the future is unknown, any planning effort aimed at the future is viewed as non-value added effort. “Spend your time planning the certainty part of the project and leave the uncertainty to the future (you will discover it in good time) - when in doubt, leave it out” (Wysocki, 2009: 410).

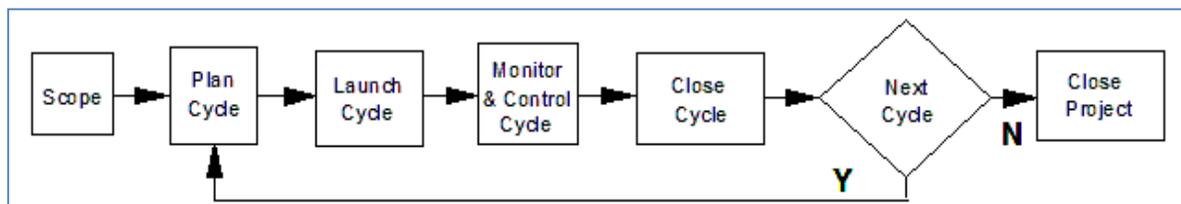


Figure 3.7: The adaptive PLC model

Source: Wysocki (2009)

3.7.3.1 Adaptive

From the onset APF is designed to continuously adapt to the changing situation of a project. The changes in approach are a creative response to the changing needs of the situation. The APF requires meaningful involvement of the client and the project team.

3.7.3.2 Project

As projects are unique and never repeated under the same set of circumstances, the approach to managing them should also be unique. In saying this, Wysocki (2010:5-6)

does not advocate a wholesale change in management approach but rather a thought-out approach that takes into account and deals with the inconsistencies of the project.

3.7.3.3 *Framework*

Wysocki (2010:7) compares the TPM to following a recipe or step by step task list with little thought of why. The APF project manager needs to understand the situation they face and adapt their toolkit to fit the specific situation. “*We are going to look at a process that is really a process to define a process*” (Wysocki, 2010:8).

3.7.3.4 *Adaptation of APF*

Of particular relevance to this study is the adaptation of APF to other PMLC models. According to Wysocki (2009:443), practical experience has demonstrated that the APF can be embedded in other PMLC models. In the case, for example, where the solution is completely known except for one module, the linear PMLC model can be used for the project, except for that one module, that will require using APF. In this case one would build the WBS as usual and treat this module as a task on the WBS for the meantime. The planning process would continue as required in order to develop a project schedule, wherein the earliest start latest finish time box for the APF module would be determined. The APF module is then executed as per the APF process to find the missing solution (Wysocki, 2009:442). In this study, some aspects of biodiesel build, lent themselves to linear the PMLC. However, there were other aspects that had uncertain solution and exhibited all the characteristics of uncertainty expected of a new business venture and was treated as such.

3.8 SUMMARY

The contemporary business environment is characterised by: *high speed; rapid change; lower cost; uncertainty*. One way they are managing these complexities is for project management to replace middle management (Gray & Larson, 2011:11). Not only must

project management manage uncertainty, as we have seen in this chapter, it must embrace the uncertainty and use it to add business value.

Traditional project management springs from the engineering and construction disciplines and is sequential in nature. It works best if complete and clearly defined goals, solutions functions and features are known upfront. Changes should be few and managed with change requests. The methodology for traditional project management is well documented, tried and tested PMI (2008).

New business development is characterised by risk and uncertainty. There is evidence from economists that uncertainties are a precondition for the existence of opportunities (Lechler et al. 2012). Several authors including Lechler et al. (2012) have criticised the limitations of classical (traditional) project management to recognise and exploit these business uncertainties.

The uncertainties that are now observed in many projects have been part of software development for some time. Hence the necessity for methodologies such as iterative processes, and agile project management were developed to address these issues. The agile approach relies on incremental iterative development cycles to complete projects and is more responsive than the traditional approach of forcing the customer to accept what was specified at the beginning of the project. New venture creation is characterised by uncertainty and risk and thus lends itself to the philosophy of agile project management. However, as stated earlier, the agile approach is primarily focussed on software development, leaving a gap in the continuum of project management methods. This prompted Wysocki (2009) to develop the APF for any application to any type of project. Aspects of the APF was used for this study for those business processes that did not have clearly defined goals as will be shown in the following chapters of this study.

The title of this study is: "Implementation of a project management model for new entrepreneurial venture creation in South Africa". This chapter brings a number of different facets into focus. These are: *the new venture creation process; traditional project*

management; agile project management; adaptive project framework; and uncertainties as a necessary condition for existence of opportunities.

A project management model that endeavours to address new venture creation must address all of these aspects in one form or the other. The next chapter reports the results of the practical implementation of the framework.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

Knowledge of how to integrate project management and entrepreneurship is very limited, especially when one considers that the two concepts project management and entrepreneurship are seemingly intrinsically diametrically opposed philosophies. This study attempts to address the significant and complex problem of new business creation, through applied systematic research.

In the business field, applied systematic research process usually starts with a management problem. To clarify the problem, the researcher does preliminary reading – literature review. Research questions are then formulated. This is followed by identification, selection and execution of a suitable strategy for data collection and analysis. After data analysis, the results are interpreted through a sense making process that can happen in many ways. Once the researcher has made sense of the results, conclusions are drawn followed by recommendations for solving the management problem and for future research. This is what is termed the research process. This chapter details the systematic research process followed to achieve the objectives of this study.

4.2 RESEARCH APPROACH

There are many approaches to research with each approach underpinned by guiding principles or beliefs called research philosophy or research paradigm. Because approaches are influenced by philosophical inclinations hence different belief systems, there is bound to be differences in opinion regarding ones chosen approach. In order to justify the research approach followed in this study, it is considered crucial to thoroughly elaborate on the guiding philosophy for this research more so when the chosen approach – Action Research is quite new and attracts both following and criticism.

4.2.1 THE UNDERLYING RESEARCH PHILOSOPHY

Although there are many philosophical standpoints in research, the ones most talked about which are considered relevant for the current study relate to **ontology** and **epistemology**.

4.2.1.1 *Ontological position adopted*

The ontological position taken in this study is **constructivism** as against **realism**. Ontology is the philosophical study of the **nature of being**. The theory of **being** concerns whether or not a particular phenomenon in which one is interested exists **independently** of our knowing and perceiving of it or is **a product of our perception** (Symon & Cassell, 2012:17). Thus, two broad camps exist in the ontology (**nature of being**) debate. The **realists (objectivism)** camp consider that phenomena exist independent of our perceptual and cognitive constructs (Bryman & Bell, 2011:20; Symon & Cassell, 2012:17). This is the philosophy of natural science researchers which when adopted in social science research means that **reality** is or should be external to social actions and actors. This implies objective reality. On the other hand, the **constructivists (subjectivism)** camp take the position that what is experienced to be a social reality is actually a creation of our own consciousness and cognitive processes (Bryman & Bell, 2011:20; Symon & Cassell, 2012:17). The meaning of this is that one creates reality by own actions of perceiving and knowing. That is, unlike realists, constructivists believe that **reality** is not external to social actions and actor. This implies subjective reality. Since as stated above, this research is carried out under the **constructivists (subjectivism)** philosophy or paradigm, it means that the researcher will be an active participant in the research process and not detached from it. This position invariably has implications for the epistemological position adopted.

4.2.1.2 *Epistemological position adopted*

The adopted epistemological position for this study is **interpretivism** as opposed to **positivism**. **Epistemology** is concerned with what constitutes valid and acceptable knowledge in a discipline and how can it be obtained? Epistemology can therefore be

said to be the study of the criteria by which one can know what comprises 'true' knowledge. A pivotal epistemological issue is the question of whether the principles, procedures and ideology adopted in the natural sciences should be used to study the social world (Bryman & Bell, 2011:15; Symon & Cassell, 2012:17).

As alluded to above, there are two broad divisions of epistemology. One is **positivism** and the other **interpretivism**. **Positivism** is associated with the position that advocates the application of the methods of the natural sciences to the study of social reality. Central to positivism is discovering patterns in observable events, describing the rules that govern them, and researcher independence from what is being observed For (Bryman & Bell, 2011:15; Farquhar, 2012: 18). These positions are possible in physical science because physical phenomenon like a reaction between two chemicals are observable. However, for the social science researcher like the business management researcher, constructs being mostly abstract are less easy to observe than can be the case in the natural sciences, hence positivism leads to weak understanding social processes encountered in business research (Bryman & Bell, 2011:15; Farquhar, 2012:18). This gave birth to **interpretivism**. Interpretivism is based on the belief that humans interpret and give meaning to the world they inhabit. Therefore, central to interpretivist research is the interaction between the investigator and the research object, where the researcher is an active agent, not a detached observer and it is only through this interaction that deeper meanings can be uncovered (Bryman & Bell, 2011:15; Farquhar, 2012:18).

To sum up, ontologically, this research lies in the subjectivist realm whilst epistemologically, it is guided by interpretivism. That is, the social science approach to scientific research was followed in this research. What this means for this research is that, in order to understand the role of selected elements of the project management in the new venture creation process, the researcher was an active agent and not a detached observer. As can be seen from these two philosophical stances, philosophical leanings have implications for ones chosen research design.

4.3 RESEARCH DESIGN

Research design refers to the general plan or blueprint that guides how data is collected and analysed (Cooper & Schindler, 2008:141). There are many ways to classify research design depending upon the descriptors used (Cooper & Schindler, 2008:142). After consulting the numerous literature in order to select the most appropriate research design, the adopted design includes elements of; *grounded theory*; *case study*; *applied research*; *cross-sectional study*; *descriptive study*; *exploratory research*; but is dominated by *action research* (AR). All the above made the study a qualitative one. The following section describes each of these elements briefly with much emphasis on AR, the dominant element.

4.3.1 CHOSEN RESEARCH DESIGN WITH THEORETICAL JUSTIFICATION

There are many research designs available for one to choose from. This section discusses design types applicable to this study.

4.3.1.1 *Grounded theory*

Grounded theory was applied at the data analysis stage where emergent issues were subjected to further analysis in a cyclical nature. Cameron and Price's (2009:249) view is that, to understand a phenomenon, the researcher has to start with observations rather than with literature. That is, observations should inform theory rather than the other way around. This is called grounded theory. The focus of grounded theory is not on hypothesis testing; rather it is to find out which theory best accounts for the phenomenon. The central feature of grounded theory is that it is iterative or recursive - meaning that data collection and analysis process are in tandem and repeatedly referring back to each other (Bryman & Bell, 2011:577; Symon & Cassell, 2012:408).

4.3.1.2 *Case study*

This study used a small biodiesel start-up as case study to investigate the blending of the two processes, namely project management and entrepreneurship. Farquhar (2012:5)

defined case study research as: “*an empirical enquiry that investigates a phenomenon in depth and within real life context, especially when the boundaries between the phenomenon and context are not clearly evident*”. The case study researcher collects evidence about a phenomenon where it is actually taking place so that it can be viewed in context. This type of research is suitable for answering how, what and why questions. Case studies are based on knowledge and experience and enable the researcher to look in-depth at a topic of interest or phenomena. (Farquhar, 2012:5).

4.3.1.3 Applied research

Welman, et al., (2005:26) note the importance of distinguishing applied research from pure research. Applied research is rarely used to merely test a theory or satisfy an intellectual interest. Its goal is rather to improve the effectiveness of an organisation. As an applied study, this research attempts to solve the management problem of how to enhance the entrepreneurial process through the application of project management principles.

4.3.1.4 Cross-sectional study

When research is looked at in terms of duration of the project, it is either longitudinal - takes place over a long period of time or cross sectional - takes place over a short time period, typically one to three years. The empirical part of this study was done in about a year therefore falls within the cross sectional study domain.

4.3.1.5 Descriptive study

In this study, the phenomena of project management and entrepreneurship were brought together, and their interaction described. Descriptive research describes the current state of some observed phenomenon and involves either identifying the characteristics of the phenomena or exploring possible correlations among two or more phenomena (Leedy & Ormrod, 2005:9).

4.3.1.6 *Exploratory research*

This study is exploratory, as it is concerned with marrying two concepts that has not been attempted before. Exploratory research is often conducted because a problem has not been clearly defined, or its real scope is not yet clear. This approach is primarily concerned with discovery of, or with generating or building a theory.

4.3.2 THE ACTION RESEARCH PROCESS

As stated above, action research (AR) is the dominant research approach used in this study. Through this action research, new insights were gained and these were incorporated into the initial model to help improve new venture success rate. It is therefore paid much attention in this section.

Gradually being accepted as a legitimate research method in the social sciences, action research is slowly gaining acceptance in business related disciplines (Whitehead, 2005; Coughlan & Coughlan, 2002). Unlike in traditional forms of research where researchers are seen to be neutral, value-free agents, action researchers consider what influence they may be having on their and others learning during the research process (Whitehead, 2005). Learning from action research helps in solving practical problems (Whitehead, 2005) and Action research should make a marked difference for practitioners (Stringer, 1996:11). The action research employed in this study is intended to solve the problem of new venture creation failure.

Action research is a process of interrogating one's own practice as a means of moving forward to an envisaged goal. It is a reflective study of one's actions (Riel, 2011). The idea of self-reflection is central to action research in contrast to traditional forms of research, where research is done on others (McNiff, 2002). This approach is further supported by Cronholm & Goldkuhl (2003:2) that research should be performed 'with' rather than 'on' people and that subjects should be fully involved in research decisions about both content and method. In this study, the researcher developed a theoretical model which incorporated aspects of project management into the new venture creation process. The researcher then went through the process of establishing a new small bio-diesel plant based on the framework. The researcher then used lessons learnt from this

practical implementation to modify the framework and to provide guidelines for implementation.

In the process of working through a series of reflective stages, the action researcher learns from the research and develops a deep understanding of the dynamic forces within the research environment (McNiff, 2002). This cycle of reflective series of study, contemplation and review is illustrated below.

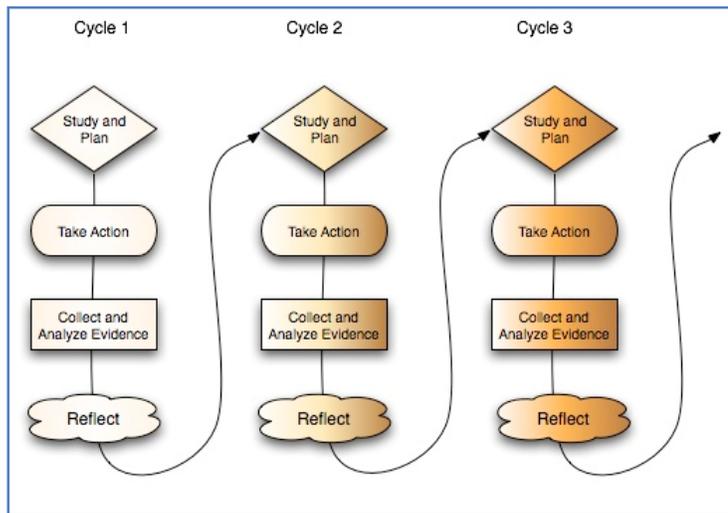


Figure 1.1: Progressive Problem Solving with action research

Source: (Riel, 2011)

Action research begins with an idea, checked against the anticipated outcome, and then modified if need be (Riel, 2011). In the current research, the idea is that it is possible to integrate elements of project management in to the new venture process. In the action enquiry cycle, one would identify something of concern, try a different way of doing things, reflect on what was happening and based on these reflections try a new process, which may or may not be more successful (McNiff & Whitehead, 2006:8). In the current research, elements of project management were integrated into the various phases of the venture creation process. The results were then evaluated for problem areas. That is, lessons learnt were noted. As a systematic process, the basic steps of action plans consist of: test the validity of the learning process; modify the practice in light of the

findings; and review and evaluate the modified action (McNiff & Whitehead, 2006:8). This process can be repeated a number of times, as illustrated in Figure 1.2. These aspects are reflective of the grounded theory. For this study, there was no hypothesis. Rather, it was theorised that the entrepreneurial process could be improved by applying project management principles. This theory was then tested through practical implementation. The iterative nature of AR was applied in the research situation.

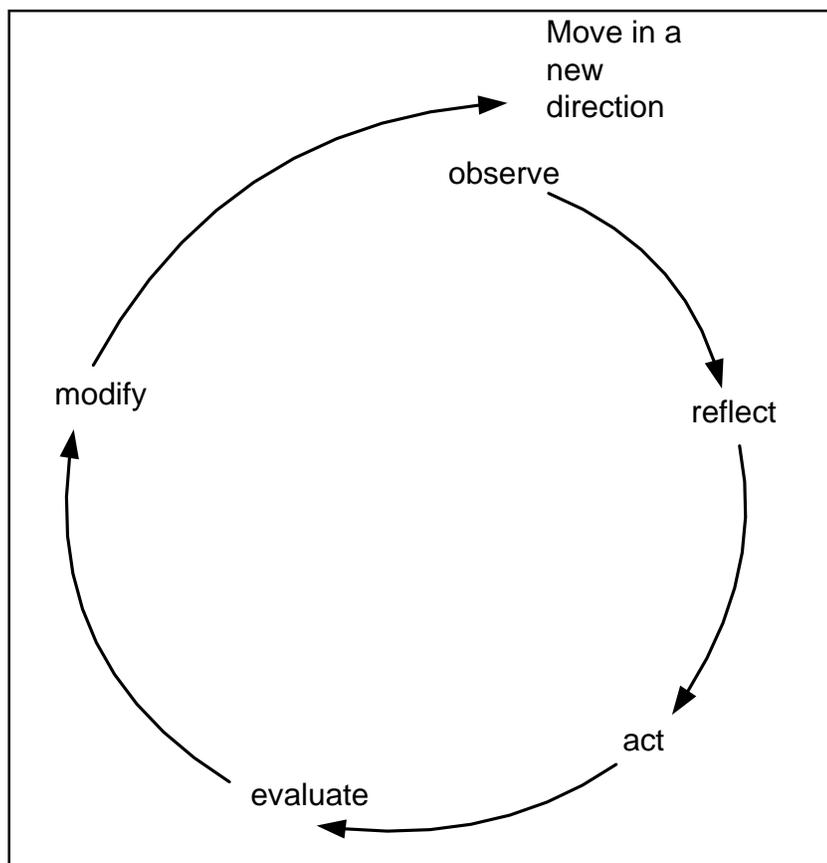


Figure 1.2: An action-reflection cycle

Source: McNiff & Whitehead (2006:9)

4.3.3 JUSTIFYING THE USE OF ACTION RESEARCH

The use of action research comes from an understanding of how ontological perspectives influence personal and social practices. McNiff and Whitehead (2006:10); and Dick (2000) suggest that action research is most suited to those occasions where action and research are both desired. McNiff and Whitehead (2006:13) are of the opinion that action research

can be used for improving understanding; developing ones learning; and influencing others' leaning.

For Heale (2003:6), problems and issues that practitioners are confronted with can often be far removed from those investigated by researcher and the effect that research has on practice depends on how closely the research mirrors the practitioner's experience in the field. According to Heale (2003:6), action research is relevant to everyday practice as it combines theory, research and practice and thus decreases the theory – practice gap. As this study involved the building of a small biodiesel production plant with which the researcher was closely involved, there was a merging of practice, theory, emulative of exploratory and descriptive research.

Dick (2000) asserts that the key strength of action research is that it is designed for a dual purpose - to yield change and understanding. The author elaborates that the emergent nature of action research leads to growing understanding, responsiveness, change, and ability to deal well with very complex situations. It must be noted that venture creation is a complex process. In the current study, the researcher was fully engaged in the research process, responded to issues as they emerged with the sole aim of coming up with a model that can ensure higher new venture success rate than currently is the case.

4.3.4 THE SPECIFIC ACTION RESEARCH MODEL USED

Action research has generally been applied to education, health and related similar professional industries, and the research models have been built around these requirements (McNiff, 2002; Khanlou & Peter, 2005; McNiff & Whitehead, 2006; Bath, 2009). This study partially used the business improvement action research model shown below that has been adapted from McNiff (2000), McNiff and Whitehead (2006), Dicks, (2000), and Ordowich, et al. (2007) and blended with the canonical action research process model of Susman (1983).

4.3.4.1 *The business improvement action research model*

Essentially, the business improvement action research model shown below in Figure 1.3 extends the model of Ordowich, et al. (2007).

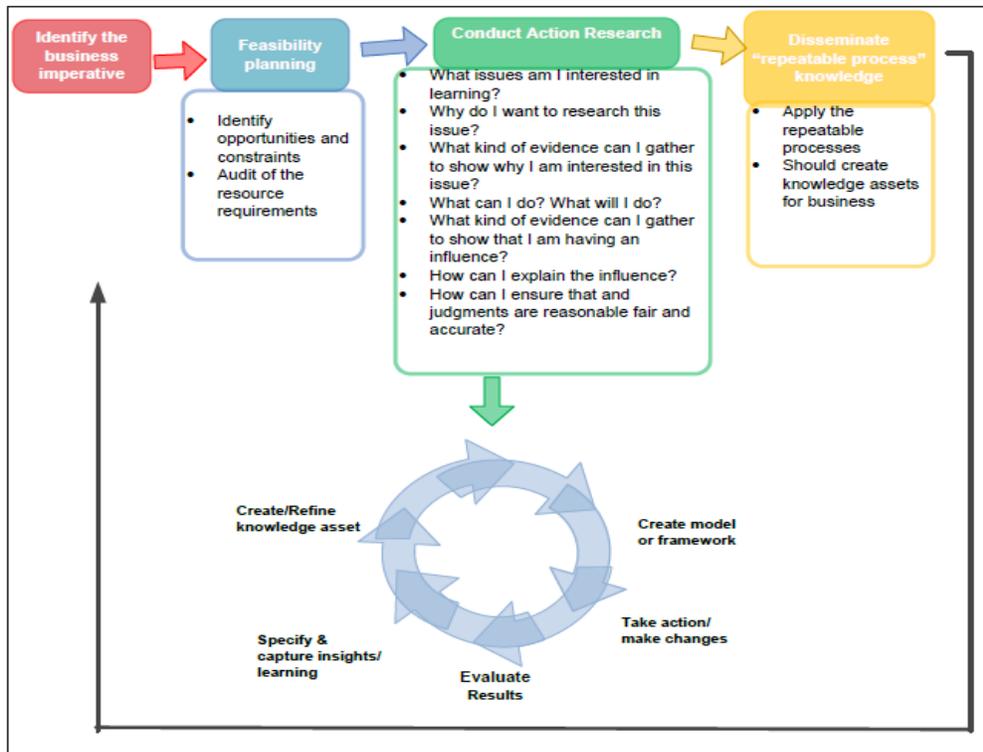


Figure 1.3: The ‘business improvement’ action research model

Source: Ordowich et al. (2007).

Identify the business imperative

There should be a valid and implementable business reason for undertaking action research. That is to say that action research should make a difference by improving business system (McNiff, 2002; Ordowich, et al. 2007). The business imperative for this study was to create an entrepreneurship model that will assist in improving the new venture success rate.

Feasibility planning

Before one begins planning, an appropriate feasibility study has to be done in order to assess the extent of the study, identify some of the opportunities and constraints and do an audit of resource requirements in order to ascertain whether it makes sense to go on

with the planning. (McNiff & Whitehead, 2006:80). In the current study, a small business biodiesel facility was already conceptualised and in the process of starting that made an ideal base against which to test the concepts. The researcher was directly involved in the new venture creation process thus suggesting an action research approach to the study; limited funding for the project was obtained from a venture capitalist; and the project was intended as a spring board for multiple projects of its kind with the accompanying spin-offs.

Conduct action research

Once the critical business is identified and the feasibility of carrying out the research is verified, the actual action research process is followed (Ordowich, et al. 2007:15). After the feasibility study, the current study then proceeded through the research cycle described previously in which the action-reflection iterative cycle of McNiff (2000) was carried out. This consisted essentially of: observe – reflect – act- evaluate – modify and then change direction if the previous action justified such an action.

Disseminate “repeatable process” knowledge

One of the action research expectations is to improve practice and/or to generate new ideas (McNiff & Whitehead, 2006:63). These new practices and/or ideas should be applied and further evaluated. They are then available to be reconsidered within the whole “business improvement research cycle”. It is expected that the model will be applied by the entrepreneurship community and lessons learnt would be used to improve the model.

4.3.4.2 The canonical action research process

Basically, the canonical action research (CAR) follows a circular iterative process starting with diagnosis of the problem, followed by action planning, action taking, evaluating effect of action and then specifying the learning that has taken place (Susman, 1983). Figure 1.4 illustrates the initial canonical process model by Susman (1983).

Making it unique among forms of action research, CAR is iterative, rigorous and collaborative and involves a focus on both organisational development and the generation

of knowledge. The iterative characteristic implies a cyclical process of intervention with one or more (usually more) cycles of activities that designed to focus on the problem(s) experienced within an organisational setting (Susman, 1983). The two key components of CAR are iteration and the continuous process of problem diagnosis.

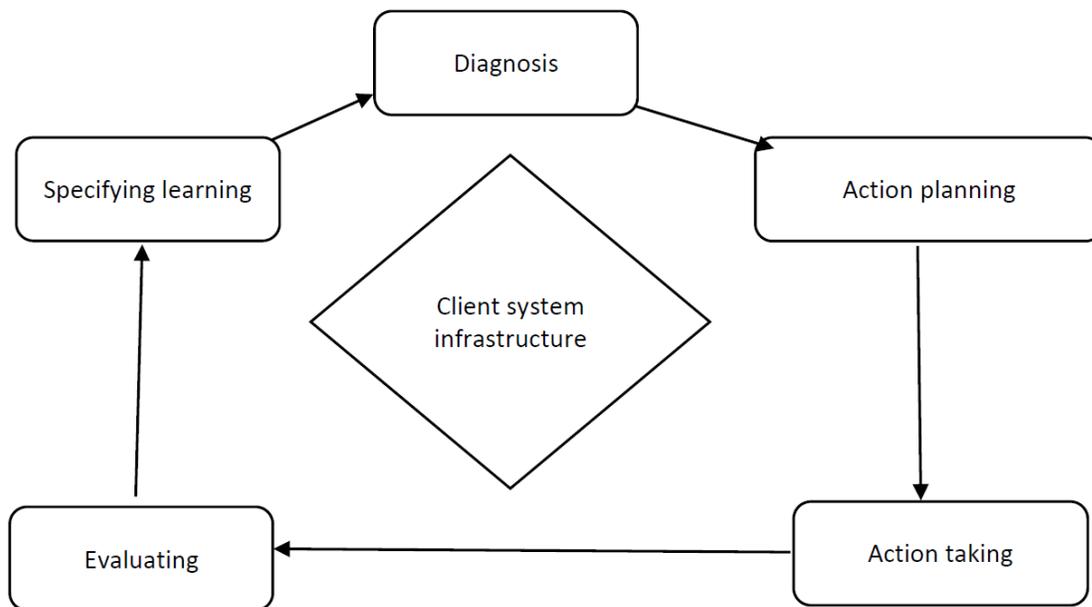


Figure 4.4: Canonical action research process
(Susman, 1983).

By iterating through the cycles of activities, researchers can both develop an increasingly detailed picture of the problem being addressed and at the same time move closer to the problem solution (Susman, 1983). The same principles were used in the current study. Having developed the theoretical model, it was then tested in a 'live' situation in the form of the new small scale bio-diesel plant. In this way, practical problems were identified and resolved. Details of how Figure 4.4 was applied is provided in Chapter 5.

4.4 SUMMARY

This chapter focused on the research methodology. It was indicated that the basic methodology is action research, a relatively new and sometimes controversial approach. The various aspects of the methodology was fully presented and discussed with much attention paid to the philosophical underpinnings. Details of the action research process (Figure 1.4) was applied is provided in Chapter 5.

CHAPTER 5: REPORTING THE ACTION RESEARCH

5.1 INTRODUCTION

Chapters 2 and 3 discussed the two key components of the study, the project management process and the new venture creation process while Chapter 4 presented the research methodology followed. This chapter reports the outcomes of the empirical research to integrate project management procedures in the new business start-up process.

An important augmentation to this study was the work of Rico et al. (2011) who submit that studies that attempt to explain new venture creation from a multitude of theoretical perspectives proliferate entrepreneurial literature, but that the critical question of “*how*” the process unfolds remains unsolved. They further argue that there is no process “road map” that can guide the prospective entrepreneur through the unknown territory between inputs and desired outcomes and the associated risks. They go on to state that a serious research gap exists regarding the process, methodology and tools for new venture creation. Thus these authors call for a well-structured process model that can prevent entrepreneurs from repeating actions that could lead to loss of time and resources in the process of starting their own business. Unlike the SAD mooted by Rico et al. (2011), this study attempts to close the gap by interposing the new venture creation process with the project management process.

What follows is the recorded accounts of the researcher who approached the study from action research perspective meaning that the researcher was not a passive participant but an active participant who together with other participants observed events as they unfolded and used the lessons learnt to improve the new venture creation process. It is considered quite in place to first to recapitulate the goal of the search (Chapter 1), the new venture creation process (Chapter 2) and the PMP (Chapter 3) so as to assist the reader to place what is being reported on into context.

5.2 THE GOAL OF THE RESEARCH

5.2.1 MAIN GOAL

As stated in Chapter 1, the goal of this study is to combine the concepts and processes of “entrepreneurship” and “project management”, two seemingly diametrically opposed management philosophies into an integrated process model that will contribute to the entrepreneurship body of knowledge and assist in improving the new venture success rate.

4.2.2 SUBSIDIARY OBJECTIVES

1. To identify project management principles and techniques that can be incorporated into the new venture creation process.
2. To generate a pragmatic process model that incorporates the two processes of project management and entrepreneurship.
3. To practically apply the model in the creation of a new small scale bio-diesel venture and refine it if necessary.
4. To provide guidelines for implementing the model

4.3 PROJECT MANAGEMENT IN NEW VENTURE CREATION

4.3.1 PROJECT MANAGEMENT IN NEW VENTURE CREATION

A thorough search of literature reveals paucity of academic research in the integration of project management and new venture creation. This study suggests and implements a generic model for integrating aspects of project management into the new venture creation process with the expectation that it will enhance the new venture creation success rate. The model should cater for start-up business of varying uncertainty. The generalised model should also cater for changes in the level of uncertainty during the new venture creation process, as new information is forthcoming. The model should not be

too complex such that the potential benefits derived from the model are lost in the understanding of the model.

4.3.2 NEW VENTURE CREATION PROCESS SPECIFIC ACTIVITIES

4.3.2.1 *The planning stage*

Pre-planning

- Establish the business framework
 - Write mission statement
 - Select business name
 - Start writing business plan
- Legal
 - Select business entity
 - Familiarise with health and safety regulations
- Study your industry
 - Decide who your customers should be
 - Determine competitors target market
 - Prepare initial product/service list
 - Talk to trade sources, advisors, and your SME finance group
 - Internet research on the business
 - Research similar businesses
- Marketing plan
- Sales plan
- Customer strategy plan
- HR plan
- Financial planning
 - Establish pricing strategy
 - Establish sales forecast
 - Establish financial objective
 - Determine capital needs
- Personal development
 - Business skills course
 - Establish outside advisors/mentor

- Consult SETA's
- Product development
- Keep a note book clip file

Planning

- Establish the business framework
 - Complete business plan
- Legal
 - Establish legal advisor to consult
 - Apply for business licence
- Study your industry
 - Identify significant competitors
 - Interview perspective customers
 - Prepare final product/service list
 - Internet research
- Financial planning
 - Establish bank relationship
 - Re-assess capital needs
 - Establish pricing strategy
 - Establish rational sales forecast
 - Review financial objectives
- Information needs
 - Determine IT needs
 - Determine book keeping system
- Product development
- Update a note book clip file

4.3.2.2 Resource gathering stage

- Determine HR requirements
 - Set up list of personnel
 - Determine job profiles
 - Determine personnel reporting structure
 - Establish HR consultant to verify
- Establish business contacts

- Find location for your business
 - Talk to estate agents, bank manager, local chamber of commerce
 - Research trade association site suggestions
 - Check location that fit in with image clientele
 - Identify business location
- Establish resources for product development

4.3.2.3 *Implementation stage*

- Industry
 - Finalise product/service list
 - Legal
 - Create legal business entity
 - Ensure health and safety requirements
 - Ensure business licence
 - Financial planning
 - Secure financing
 - Set-up bank accounts
 - Information needs
 - Validate IT infrastructures
 - Validate book keeping system
 - Determine HR requirements
 - Hire key personnel
 - Train personnel
 - Find location for your business
 - Sign lease agreements
 - Lessor to make necessary locale alterations
- Develop product

(Bang, 1993; Kunene, 2008; Deakins & Freel, 2009).

4.3.2.4 *Generic business processes*

The above stages and activities are shown in a self-explaining mind map view of the generic business processes, in Figure 4.1 below. Note that product development is not

included as this is a separate development plan and strategy that runs in parallel with the business processes. Figure 4.1 shows the fundamental new venture processes that should be addressed when setting up a new business. There is deliberately no sequence in these processes as sequence implies a linear progression, which is not always the case as processes can often be carried out in parallel or go through cycles of iteration. The processes shown are on a relatively high level and are intended to be used to stimulate ideas regarding a more granular breakdown. This is a generic mind map that could also be refined for particular business activities and serve as a template for them.

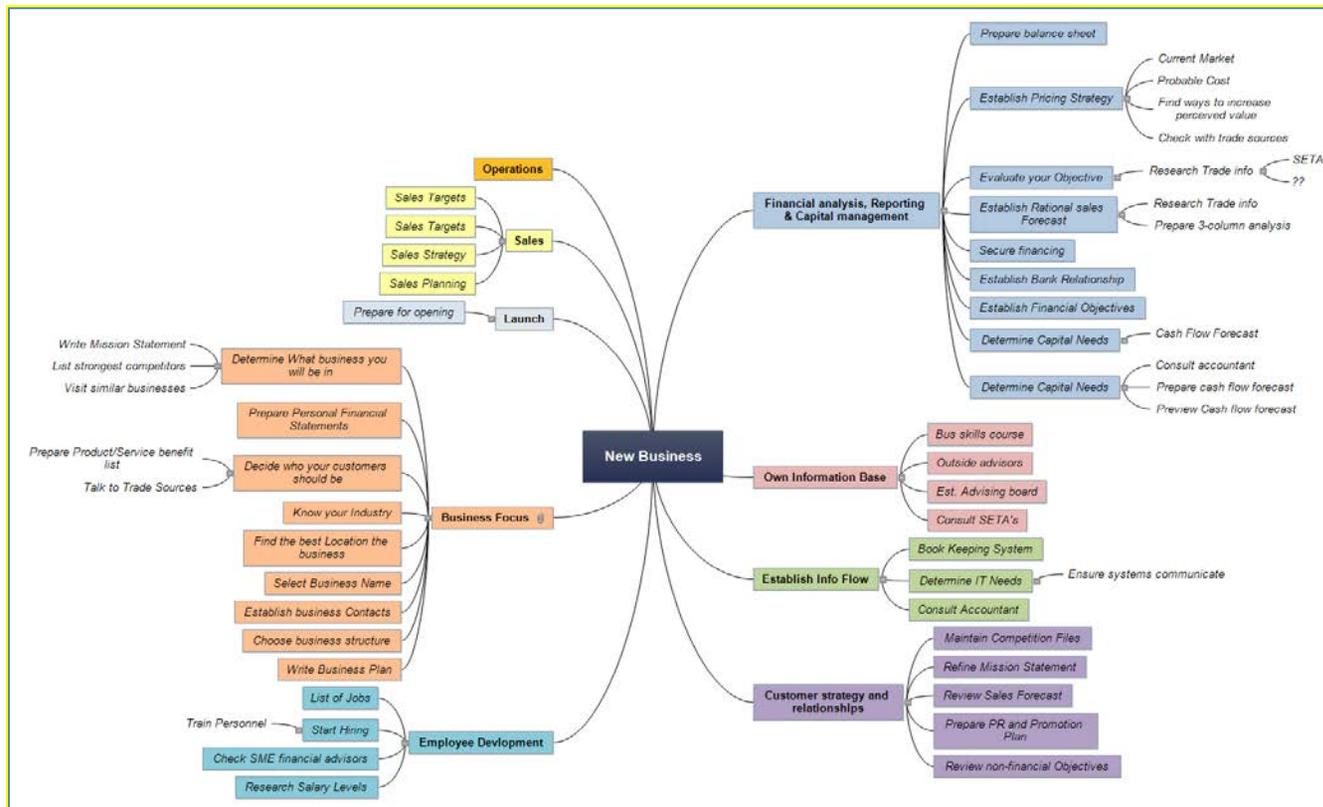


Figure 4.1: New Business Processes

Source: Bang (1993); Deakins & Freel (2009); Kunene (2008)

4.3.3 PROJECT MANAGEMENT PROCESSES SPECIFIC ACTIVITIES

The project management process and its activities described in Chapter 3 can be surmised as follows.

4.3.3.1 *Project initiation processes*

- Develop a project charter
- Appoint the project team
- Set up a project Office
- Phase Review

4.3.3.2 *Project planning processes*

- Develop project management plan
- Define scope
 - Collect requirements
 - Create WBS
- Develop schedule
 - Define activities
 - Sequence activities
 - Estimate activity resources
 - Estimate activity durations
- Determine budget
 - Estimate costs
- Plan quality
- Develop Human Resource Plan
- Plan communications
- Plan Risk management
 - Identify risks
 - Perform qualitative risk analysis
 - Perform quantitative risk analysis
 - Plan risk response
- Plan procurement

- Phase review

4.3.3.3 *Project execution processes*

- Build/undertake deliverables
- Direct and manage project execution
- Project Team
 - Acquire project team
 - Develop project team
 - Manage project team
- Conduct procurements

4.3.3.4. *Monitor and control processes*

- Monitor and control project work
- Perform integrated change control
- Scope
 - Verify scope
 - Control scope
- Control schedule
- Control costs
- Monitor and control risks
- Administer procurements
 - Perform phase review.

4.3.4.4 *Project closure*

- Perform project closure
 - Review project completion
- (PMI, 2008; Westland, 2006)

4.4 CARRYING OUT THE ACTION RESEARCH

The integration of the project management aspects into the new venture creation process followed the CAR discussed in detail in Chapter 4 and now described below. As stated in Chapter 4, what makes CAR unique among forms of action research is its iterative, rigorous and collaborative nature that involves a focus on both organisational development and the generation of knowledge. Through this process, actions taken to integrate aspects of project management into the new venture creation process are evaluated focusing on the problems experienced within the new biodiesel venture setting. The two key components of CAR in this exercise were therefore *iteration* and the continuous process of problem *diagnosis*.

By iterating through the cycles of activities, the researcher was able to both develop an increasingly detailed picture of the problem of integrating aspects of project management into the new venture creation process, and at the same time move closer to solving associated problems, bearing in mind that project management and new venture creation happen to come from two different management philosophies that have potential of being opposed to each other. Continuous diagnosis ensured that the activities planned were always relevant to the problem as currently understood and experienced. As stated in Chapter 4, the collaborative aspect of CAR ensured cooperation in roles that are appropriate given the particular context and circumstances of the problem (Davison, et al. 2004:68). The principle on which CAR is based, is reflected in the cyclical process model in Figure 5.2 below. The cyclical nature suggests a one-directional flow, with *diagnosis* followed by *planning*, *intervention*, *evaluation* and *reflection*. Davison, et al. (2004:72) suggests that while the uni-directional flow is desirable, some iteration between stages may be needed.

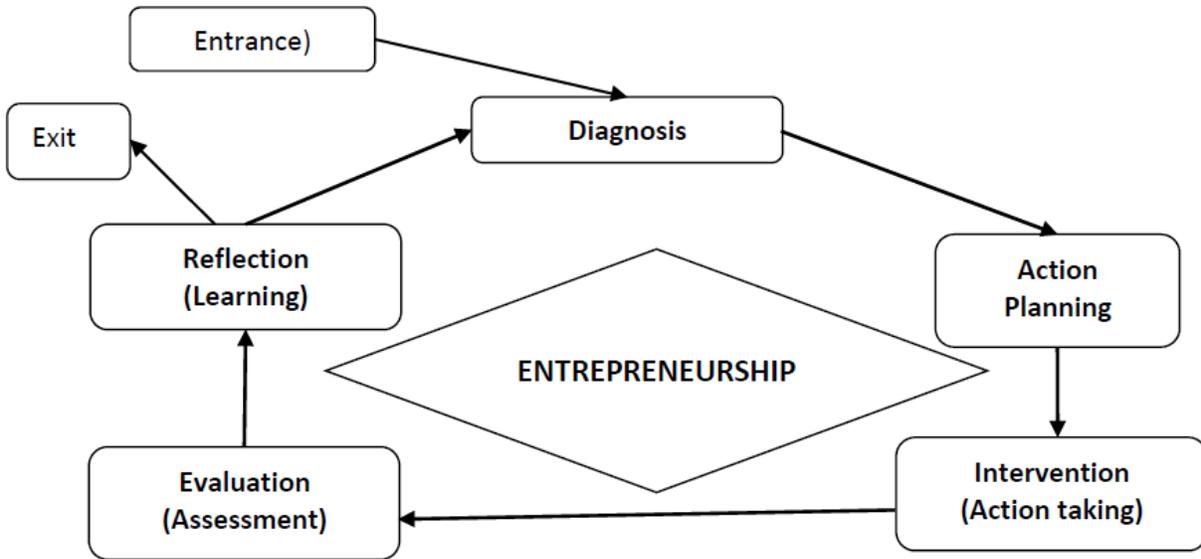


Figure 5.2: CAR cyclical process model

Source: Davison et al. (2004)

5.4.1 BLUEPRINT FOR THE NEW VENTURE BIODIESEL PROJECT

The purpose and outcome of each activity in the above CAR process is briefly considered. **Diagnosing** is the process of identifying primary problems that are possible causes of the organisations desire to change and the appropriate project management procedures that can be integrated into the new venture creation process. For each of the cycles, questions were compiled derived from the learning of the previous cycle (Baskerville & Wood-Harper, 1998:97). The next activity, **action-planning** involves cooperating with the other research participants in order to determine the actions that would address the primary problem. These actions were in turn built into the biodiesel development and business processes. The following step, namely **intervention (action taking)**, involved the implementation of the planned changes as suggested by the participants in the action the action-planning stage. In completion of these stages the participants and the researcher collaborated in **evaluating** the outcomes of the applied actions. The purpose of this was to determine whether the planned actions were realised and whether they contributed to improving the primary problem.

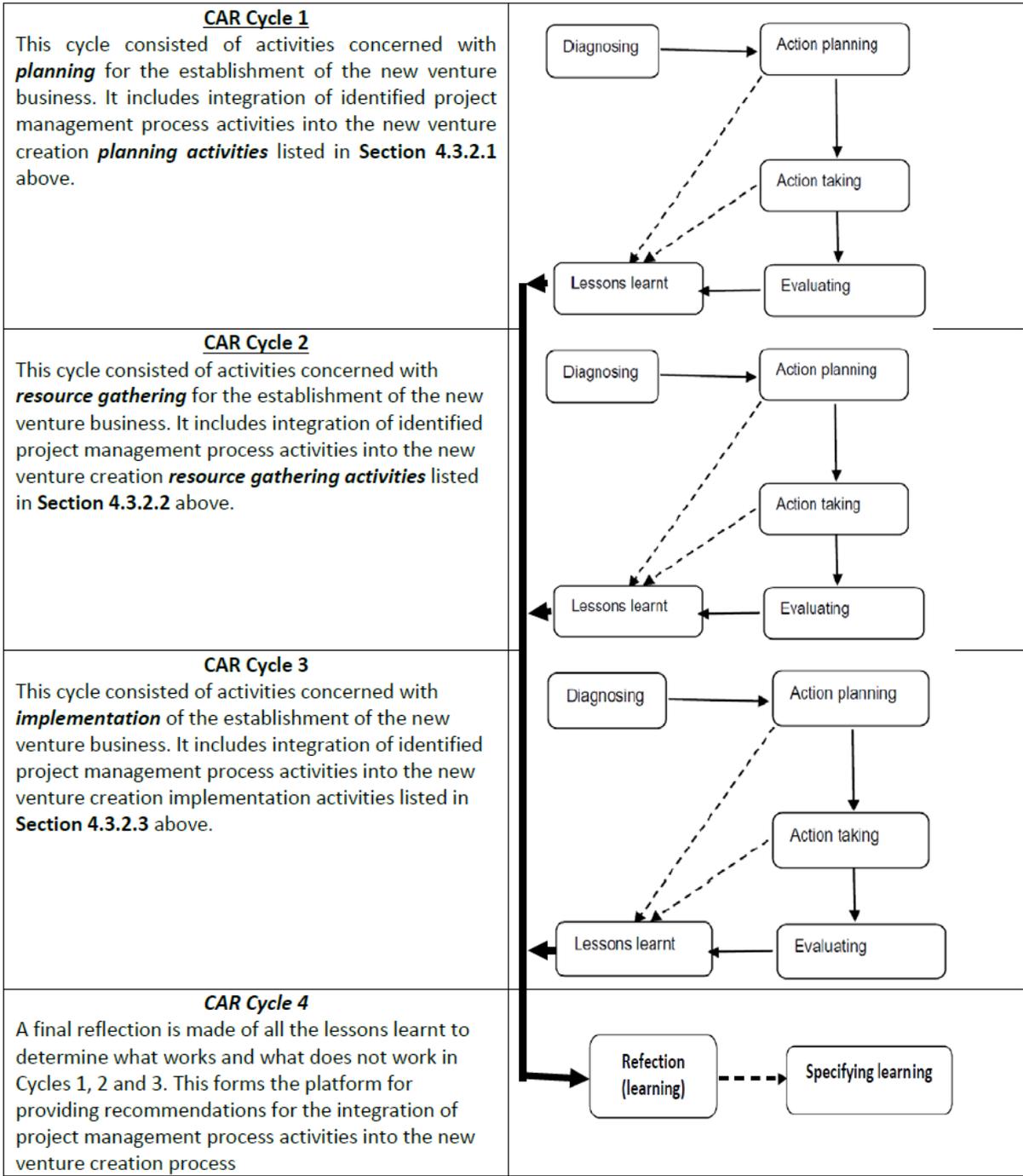


Figure 5.3: The AR blueprint

Although **reflection (learning)** is seen to be the last activity, in practice, this process is considered throughout the cycle. The knowledge gained from the outcome of one cycle was in turn incorporated into the next cycle. This knowledge gained can be used to

restructure or make changes to reflect the learning gained. If the change is unsuccessful, the additional knowledge gained can still be used for diagnosis in preparation for further CAR intervention.

5.4.2 CAR CYCLE 1: NEW VENTURE PLANNING

New venture creation process is represented pictorially in Figure 5.4

	NEW VENTURE CREATION ACTIVITIES	PROJECT MANAGEMENT ACTIVITIES	ACTION RESEARCH ACTIVITIES
CYCLE 1: PLANNING	1. Plant construction <ul style="list-style-type: none"> • Design • Materials • Feedstock • Waste use or disposal 	1. Appoint project team	<pre> graph TD Diagnosing --> Action_planning[Action planning] Action_planning --> Action_taking[Action taking] Action_taking --> Evaluating[Evaluating] Evaluating --> Lessons_learnt[Lessons learnt] Lessons_learnt -.-> Action_planning Lessons_learnt -.-> Action_taking </pre>
	2. Business plan 3. Marketing plan 4. Sales plan 5. Customer strategy 6. Product delivery plan and strategy <ul style="list-style-type: none"> • Delivery 7. Customer strategy <ul style="list-style-type: none"> • Identify customers 8. Legal <ul style="list-style-type: none"> • Bio-fuels legislation • Business entity 9. Finance <ul style="list-style-type: none"> • Plant construction • Operating cost • Venture capital 10. Information system <ul style="list-style-type: none"> • Bookkeeping 11. Quality testing 12. Management	2. Develop a project management plan <ul style="list-style-type: none"> • Create a Work Breakdown Structure (WBS) • Define activities • Sequence the activities • Estimate activity duration 5. Defining the project scope 6. Drawing up a quality assurance plan 7. Plan risk management	

Figure 5.4: CAR cycle 1 - New venture planning

The CAR Cycle 1 which involves integration of project management techniques into the Cycle 1 (new venture planning process) as captured in Figure 5.4 is now explained.

Diagnosis

The new venture planning stage consisted of both planning of the biodiesel plant construction as well as the accompanying business processes required to launch the business. The major activity at this diagnosis stage was to identify which of these planning activities needed to be enhanced by which project management activity. In doing the diagnosis, it emerged that all of the new venture creation planning stage activities would benefit from the project management techniques Work Breakdown Structure (WBS) and activity planning.

Action planning

In line with project management procedures, the first step here was to appoint a project team. The team consisted of a technical, administration, finance experts and the new venture entrepreneur who was the researcher as well as the project leader. All the team members met on regular basis, determined by the intensity of the activities at the time.

Action taking

The main business planning problems the team faced and had to deal with were WBS analysis; determining scope of activities; determining activity durations; determining critical paths; and sequencing of activities. WBS analysis was carried out so that the scope of activities could be determined. Thereafter, activity durations were determined, sequence of activities was determined. The defining project management technique that was applied here was that of identifying the **critical path** (*meaning that any activity that is delayed on the critical path will delay the project*). As there were a number of interlinking dependant processes, the *critical path* was fundamental in managing these activities. The *critical path* enabled the project manager to focus his attention on the activities that could not only delay the project but could cause the project to fail. It is important to mention here that while budgeting of time for each activity was done according to project management principles, financial planning was left untouched as it was considered that

project management cannot really bring anything that normal financial management does not already have. (See Figure 5.4 above for all the full list of project management activities undertaken).

Evaluating

The main task here was to determine whether or not the various project management techniques were flexible enough to respond to frequent changes that normally occur in the entrepreneurial process. The result of the evaluation is reported under lesson learnt below.

Lessons learnt

The main learning experience in an entrepreneurial venture sense, is that planning has to be very flexible for *some* of the activities. As such, an agile approach, particularly the APF appears the most appropriate to manage these planning activities. The WBS is a very useful project management tool for the planning phase and is an aid to determine which activities do not have a clearly defined solution and which should follow the APM methodology. A major issue uncovered here was that there are links between plans from different activities that feed into each other and thus have a bi-lateral affect, meaning that a change to one activity directly influenced another in more ways than just changing the schedule. It is here that CPM plays an important role. However, flexibility is again necessary as activities that were not on the critical path could quickly become critical activities. This was the case with the waste product that contained the dangerous chemical, Methanol. Methanol could be recovered in the production plant which would then remove it from the waste product and so render it harmless. From a project management perspective, Gantt charts may look impressive but they often bear no relevance to reality nor can they be easily changed on the fly to represent the reality. Gantt charts worked well when solutions were clear. A white board with sticky notes may be all that is necessary to represent the more volatile activities. The next section describes Cycle 2 – the resource gathering phase of the new venture creation process.

5.4.3 CAR CYCLE 2: RESOURCE GATHERING

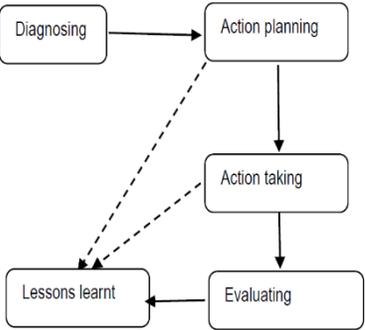
CYCLE 2: RESOURCE GATHERING PHASE	NV ACTIVITIES	PMP ACTIVITIES	AR ACTIVITIES
	1. Non-financial resources <ul style="list-style-type: none"> • Materials • Equipment • EIS 2. Physical location 3. Financial resource 4. Human resources 5. Fixed assets	1. Determine requirements 2. Define activities 3. Schedule activities 4. Estimate activity durations 5. Prioritise activities	 <pre> graph TD Diagnosing --> Action_planning[Action planning] Action_planning --> Action_taking[Action taking] Action_taking --> Evaluating Evaluating --> Lessons_learnt[Lessons learnt] Action_taking -.-> Action_planning Evaluating -.-> Diagnosing </pre>

Figure 5.5: CAR cycle 2. Resource gathering

Diagnosis

Problem diagnosis centred mainly on establishing resource needs to establish the business. The diagnosis reveals that resource gathering involved two main activities as far as new venture creation is concerned. On the one hand, there were all the activities necessary to set up the biodiesel production plant that included: materials procurement, physical facilities for constructing the plant as well as the facilities for operating the plant. On the other hand, there were all the related business activities that involved establishing the technical and the human resource teams as well as estimating capital and operational costs. The main project management techniques identified to be applicable here were: requirements determination and scheduling of activities. The human resources aspect consisting of a wide range of skill levels and professions, ranging from the chemical engineer that was responsible for the reaction and the economic use of the waste product, to the venture capitalist and his administration team who formed the new company named FAME. There was also the requirement for a technical operator.

Action Planning

Action planning involved establishing and coordinating all aspect of the resource gathering. Whereas in the planning cycle, an overall project plan was produced, in the resource gathering cycle, requirements and activities related to resource gathering were carried out. The main project management techniques applied in this cycle were: requirements determination and scheduling of activities. Time was budgeted for all activities to produce a high level resource budget. Human resources were identified (See Figure 5.6).

Evaluating

This stage involved determining whether or not, the project management tools that were applied were effective in carrying out the resource gathering process.

Lessons learnt

It was found out that financial and non-financial requirements determination is same in project management and any normal business endeavour as they use the same formula. However, scheduling of activities and time budgeting were able to enhance the resource gathering process. Therefore, project management techniques of scheduling of activities and time budgeting are a requirement for the resource gathering stage and it would be an indispensable requirement for any entrepreneur.

So, resources have now been gathered and the next stage was the implementation of the new biodiesel business.

5.4.4 CAR CYCLE 3: IMPLEMENTATION CYCLE

CYCLE 3: IMPLEMENTATION STAGE	NV ACTIVITIES	PMP ACTIVITIES	AR ACTIVITIES
	<ol style="list-style-type: none"> 1. Legal Register business Establish health and safety units 2. Finance Secure finance Set up bank account 3. Locate business premise Lease or buy 4. Do physical construction Construct Acquire materials 5. Establish operational departments Sales Accounting Production, etc. 6. Human resourcing Hire key personnel Train personnel 7. Information Set up and validate information infrastructure 8. Sales and purchases Sign up suppliers Sign up customers Make input purchases Take first orders 	<ol style="list-style-type: none"> 1. Implement plans: Create WBS Schedule activities Estimate activity duration Implement each activity as scheduled 2. Monitor and control activities in terms of: Quality Schedule Costs 3. Monitor and control risks 	 <pre> graph TD Diagnosing --> Action_planning[Action planning] Action_planning --> Action_taking[Action taking] Action_taking --> Evaluating[Evaluating] Evaluating --> Lessons_learnt[Lessons learnt] Lessons_learnt -.-> Action_planning Lessons_learnt -.-> Action_taking </pre>

Figure 5.7: CAR cycle 3 implementation.

Diagnosis

Diagnosis at this stage involved determining implementation activities and the project management activities that can enhance the implementation. The diagnosis through the literature review revealed that new venture launching or implementation generally consists of establishing the business entity in its legal form; securing finances; appointing staff; putting up physical structures or leasing premises; setting up the business processes required to start operating; and so on (see Figure 5.7). One key implementation issue that was identified at this stage was the disposal of the waste product. Other implementation problems faced were: how to implement within the complex legal issues regarding the sales of biofuels fuels, as the government was in the process of formulating legislation around the biofuels industry; setting up a customer base prepared to use the biodiesel product; and obtaining sufficient and regular supply of

feedstock – raw materials. Monitoring and control techniques as well as scheduling (time management) were identified as the main project management procedures that can enhance implementation. However, the full gambit of project management knowledge areas were also considered necessary to a lesser or greater extent depending on analysis of the requirements.

Action Planning

The action planning consisted of agreeing on: the physical structures to put up; the business processes such as functional departments and the preferred information system; the actual numbers of employees required and the applicable remunerations; production capacity; the type of bank account and the company's preferred bankers; and sources, types and amounts of finance required. Following this, contracts were signed with suppliers and customers. It was also decided at this stage that the production of biodiesel would take place within the existing legislation and the consequence of new legislation would be managed when that occurred. All these implementation plans were carried out using the project management tools of WBS, activity scheduling, activity and duration estimation.

Action taking

This is where the business idea became operational. The first action taken was to establishing the business entity in its legal form. In terms of new venture creation, the bio-diesel plant was launched. At this stage, employees were appointed; banking account opened; finances were secured and banked; information system was set up and running; raw materials were procured; first orders were taken and production commenced. Also, in this phase, project monitoring and control techniques were applied. Monitoring and controlling were the main project management tools used at this stage. Change control was applied to both technical and business activities where necessary. Monitoring and control of the scheduled process also took place. Schedule monitoring was accomplished by visually showing the actual progress of activities against planned. Dynamic activities identified in the planning stages were monitored using APM methods

Evaluating

Evaluation at this stage involved determining how smoothly the launch of the venture took place in the wake of the application of project monitoring and control mechanisms put in place. That is, evaluation involved how the implementation activities responded to the integration of project management techniques. This involved documenting implementation results. The results are listed under lessons learnt.

Lessons learnt

Firstly, some basic project management tools were found to be an essential part of any new venture implementation process. These include monitoring and control. It was however recognised that certain processes in the entrepreneurial process are dynamic (can quickly change) and have to be monitored and controlled using the more flexible APM techniques. Also, activities that initially were standard became dynamic as a consequence of activity interaction. Because new venture creation occurs in a rapidly changing business environment full of uncertainty, not all plans will work. There is therefore a need to incorporate change control management. The project monitoring and control tools and techniques were effective in achieving the necessary levels of control needed. In particular application of the APM monitoring and control techniques enabled the dynamic activities to be successfully carried out.

Secondly, it became clear that not all the nine knowledge areas of project management may be applicable at the implementation stage. Besides monitoring and controlling, it was found that the application of risk management for example could timely identify risks for proactive measures to be taken. For example, risk analysis helped uncover the risk associated with vehicle warranty in vehicles that used biodiesel. Similarly, the implementation of a quality plan built into the entire process as advocated by project management principles enabled the production of bio-fuel that would pass the stringent South African National Standard (SANS) quality standards.

Change control can be used when scope changes need to be managed. In this study, scope changes were caused by having to change aspects of the construction process to

overcome risks associated with methanol in the waste product. Implementing change control enabled the change process to proceed in an orderly manner with the allocated fund and time constraints.

5.4.5 CAR CYCLE 4: FINAL REFLECTION

Planning stage

Clearly, planning forms an important part of any entrepreneurial venture and is at the core of project management too. The research confirmed the value of good planning and activity scheduling but also exposed the failure of plans to always cope with rapid changes in the business environment. The dependency between activities and their planning was also exposed. It is granted these dependencies can be managed with a Gantt chart or network diagram. However, a lot of effort goes into maintaining Gantt charts especially when changes are happening quickly and frequently. In practice, it was found that it is much more convenient to use a white board with sticky notes to represent those activities which have uncertain solution (Figure 5.8). It is a simple matter to move the activities and draw connecting lines between dependant activities. The different colours represent the activities for which teams or individuals are responsible. This technique was adapted from APM and can be refined depending on the complexity of the new business environment. In the case of this study, a 'product' was being developed simultaneously with the business processes, which complicated the project. The WBS is an essential tool in the planning endeavour as it firstly enables the team to ensure that all the activities have been identified and secondly it shows which processes have uncertain solution.

Resource gathering stage

The resource gathering cycle also benefited from the WBS as resources could be allocated at activity level and activities could be grouped together for control purposes. Costs could also be allocated at activity level and the 'rolled up' to the next level and a cost for specific grouped of processes determined and for the entire project.

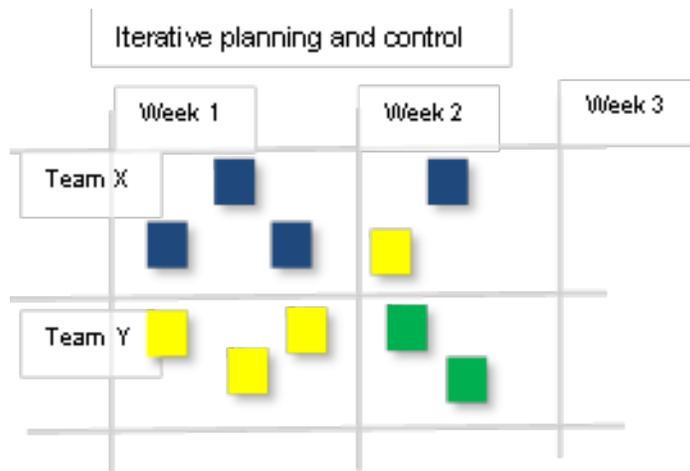


Figure 5.8: activities with uncertain solution

Implementation

Implementation is about starting the business and monitoring and control. Those processes for which the solution was known could simply be controlled by monitoring progress against plan. The white board and sticky notes could effectively be used in the implementation and control cycle for those processes for which the solution is not well defined and for which the solution can be discovered during the process. Considerable value was gained in the application of the nine knowledge areas. In particular, risk and quality management highlighted the importance of applying the project management techniques in the new venture creation process. A comprehensive risk plan identified risks early in the project and risk actions plans were thus proactively implemented. It is quite clear that not all the nine knowledge areas of project management are important in the new venture creation process. The venture leader and team need to be aware of the most important knowledge areas of project management and when to apply them in the new venture process.

Figure 5.9 shows the finished biodiesel plant. The main unit in the middle (blue) is the reactor and the blue unit on the right the washing tank. The system was electronically controlled by the control unit on the extreme right.



Figure 5.9: Biodiesel plant

5.5 SUMMARY

This chapter is the focal point of the study. The objective of this study was to combine the processes of *entrepreneurship* and *project management*, two seemingly diametrically opposed management philosophies into an integrated process model that would assist in improving the new venture creation success rate. In this chapter, these two processes were brought together in a model through the application of the canonical action research (CAR).

The need for a process model such as the one presented in this chapter is underlined by the research of Rico et al. (2011) who submitted that there is no process road map that can guide the prospective entrepreneur through the uncharted territory between inputs and desired outcomes while also dealing with the associated risks. They also saw the need to combine disciplines in this endeavour and consider the field of systems analysis and design to be the skill set needed together with the entrepreneurial processes.

This study partially heeds the call of Rico et al. (2011) but instead of systems analysis and design, falls on project management as the tool for engaging the entrepreneurial

process. The final outcome is shown in a process model (see Chapter 6, Figure 6.3) where the project management process is used at appropriate times during the new venture creation process. The model resulted from lessons learnt from a case study scenario using a small biodiesel business.

Some important lessons were learned in this process regarding the combination of the new venture and project management processes. As was expected, the standard project management processes of activity planning and scheduling are key to any new venture creation business and can be used for most of the business processes. These project management activities are imbedded in the project management process groups or the life cycle phases. However, there are processes that are volatile and require flexible planning and control methods similar to those proposed by agile methodologies where the traditional project planning and control techniques fall short. Another key lesson was the application of the project risk management in the new venture business processes. In the case of this study, risk management processes uncovered risks in the bio-diesel venture which could have stalled the launch of the venture or even scuttle it completely.

In short, it is clear that the new venture entrepreneur should have a good working knowledge of project management, its tools and techniques in order to know when to apply them and to what detail. The level of detail is important and valuable time can be lost in setting up complicated plan based on all the nine knowledge areas, some of which will not necessary benefit the project

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

At the heart of this study is the wish to assist would-be entrepreneurs to successfully embark on a new business venture. That the process is fraught with problems and disappointments as well as exciting possibilities, is a trade mark of the entrepreneurial process. This is born out in the operational definition of the entrepreneurial process in this study as ***the process of pursuing a potentially risky new venture that triggers the production of novel goods and/or services leading to financial rewards.***

The current unemployment situation in South Africa and associated level of poverty are regularly highlighted in the media, where the official statistics on unemployment, are described as around 25%. New venture creation, arguably one of the most widely debated issues in South Africa is an accepted means of creating employment (GEM 2012). According to SBP (2009:2), “small businesses are important for job creation and employment. Forty five percent of all employed people in South Africa work in firms with less than 10 employees”. In a speech delivered by Ms Elizabeth Thabatha (Deputy Minister of Trade and Industry) on April 2012 at an SMME breakfast, she reported that South Africa’s estimated 2.8 million SMMEs contribute between 52% and 57% of GDP, provide about 61% of employment and contribute more than 40% of the country’s total remuneration.

In South Africa, new ventures form an important component of the government’s agenda, as is evident from the number of specialised, regulatory and financial development agencies and institutions that have been established in order to support its economic growth, employment and equity ideals, and in delivering products and services to the economic citizens of the country. The huge capital injection into the small to medium enterprises also bears testimony to the significance of this sector for the country. Of the R83 billion provided for in the government’s 2012 budget, the largest new allocation for a single government initiative amounted to R9.5 billion over the medium term for providing for economic competitiveness and support packages for small businesses. Over the

following three years, the DTI is expected to take the largest share of this allocation (R8 billion) (National Treasury, 2012) mostly for this SMME sector.

Despite the huge investments into the nascent entrepreneurship, sub-optimal results have persisted. South Africa's TEA performance in terms of relative positioning has been consistently below the medium. GEM (2012) reports that notwithstanding the increase in TEA from 5.29% in 2006 to 8.9% in 2010 and 9.1% in 2011, South Africa still lags behind other efficient-driven economies and lies 6th below the mean. A disturbing feature / phenomenon, is the poor prevalence of established businesses in South Africa. GEM (2012) reports South Africa's established business rate of 2.3% is once again the second lowest in the world, a consistent finding in GEM South Africa's surveys. Together with Namibia, South Africa has the lowest established business rate in its youth (1%), which is below the average for the 10 sub-Saharan African countries of 8%. This paints a bleak picture of the potential of the SMME sector to contribute meaningfully to job creation, economic growth and more equal income distribution.

6.2 THE GOAL OF THIS RESEARCH

As said a number of times, the main goal of this study was to combine the processes of entrepreneurship and project management, two seemingly diametrically opposed management philosophies into an integrated process model that will contribute to the entrepreneurship body of knowledge and assist in improving the new venture success rate. To achieve this main goal, the following subsidiary goals were implemented.

1. To identify project management principles and techniques that could be incorporated into the new venture creation process.
2. To generate a pragmatic process model that incorporates the two processes of project management and entrepreneurship.
3. To practically apply the model in the creation of a new small scale bio-diesel venture and refine it if necessary.

4. To provide guidelines for implementing the model.

The following section provides conclusions on each of these goals.

6.3 CONCLUSION ON OBJECTIVE 1

Two concepts, project management and entrepreneurship lie at the heart of this research study. Entrepreneurship was operationally defined for this study as *the process of pursuing a potentially risky new venture that triggers the production of novel goods and/or services leading to financial rewards*. Therefore, the outcome of the process of entrepreneurship is the creation of a new venture. Project management was defined as *a structured approach to applying knowledge skills, tools and techniques to effectively manage schedules, budgets and resources to achieve desired business result in accordance with client requirements*. Entrepreneurship and project management elements were fully discussed and expounded in Chapter 2 and Chapter 3. The conclusion is that although entrepreneurship and project management are considered to be diametrically opposed practices, in that project management is seen as systematic and structured whereas entrepreneurship emphasises flexibility, elements of project management (refer to Chapter 3 and Chapter 5 for details) are suitable for integration into the new venture creation process as outlined in Chapter 5. As a result of the literature review, the most amenable project management procedures for incorporation into the new venture creation process are the ones found in Figure 6.3.

5.4 CONCLUSION ON OBJECTIVE 2

The second objective attempted to address the complex problem of new business creation success rate through integrating the seemingly unstructured entrepreneurial process and that of a rather structured project management process. This objective was addressed through action research. The principle on which CAR is based, is reflected in the cyclical process model in Figure 6.1 below.

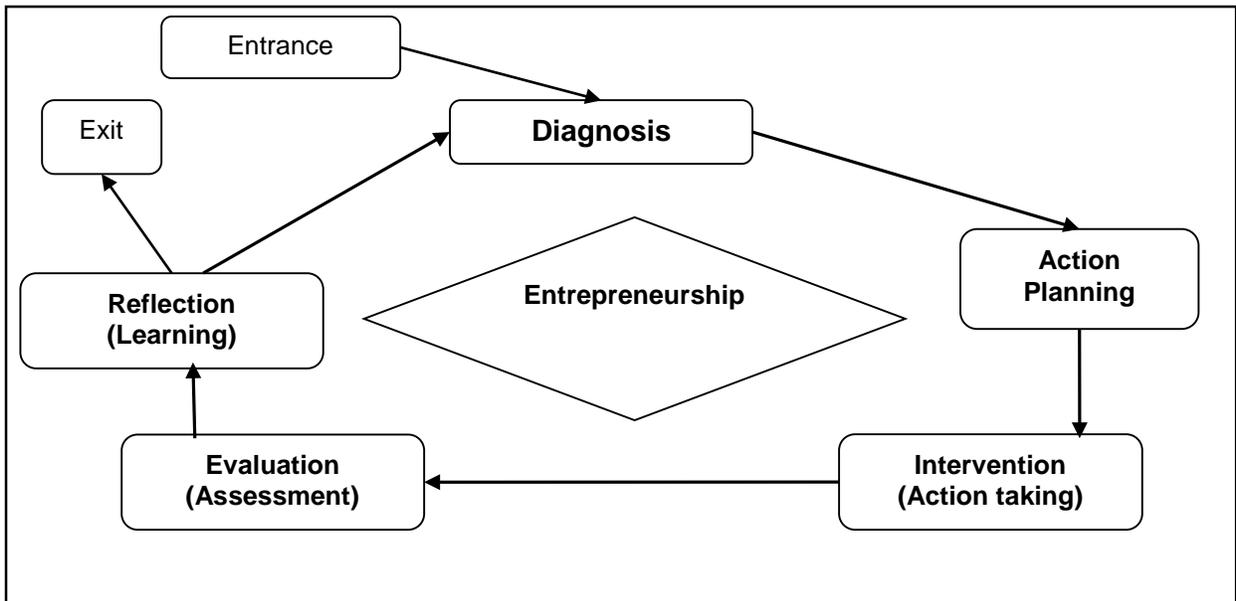


Figure 6.1: CAR cyclical process model

Source: Davison et al. (2004)

The following diagram represent the high level CAR blueprint applied to the biodiesel project.

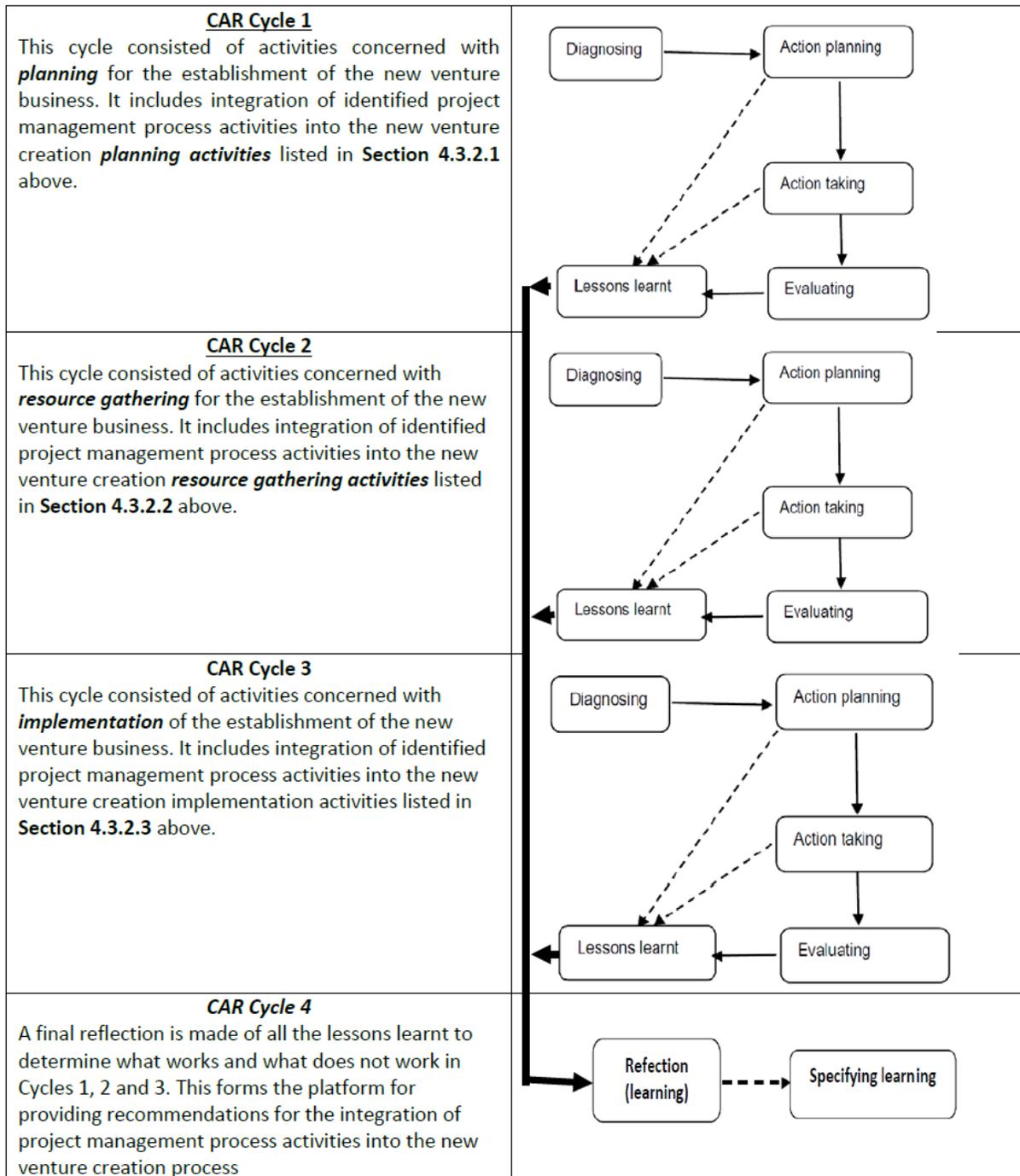


Figure 6.2: The CAR research blueprint

Application of the above blueprint led to the model below which reflects the three phases/stages of the entrepreneurial process.

VENTURE PLANNING PHASE	NEW VENTURE CREATION ACTIVITIES	APPLICABLE PROJECT MANAGEMENT ACTIVITIES
	<ol style="list-style-type: none"> 1. Plant construction 2. Business plan 3. Marketing plan 4. Sales plan 5. Customer strategy 6. Product delivery plan and strategy 7. Customer strategy 8. Legal 9. Finance 10. Information system 11. Quality testing 12. Management 	<ol style="list-style-type: none"> 1. Appoint project team 2. Develop a project management plan 3. Draw up budget 4. Define the project scope 5. Draw up a quality assurance plan 6. Plan risk management
RESOURCE GATHERING PHASE	NEW VENTURE CREATION ACTIVITIES	PROJECT MANAGEMENT ACTIVITIES
	<ol style="list-style-type: none"> 1. Technical resources 2. Physical resources 3. Physical location 4. Financial resource 5. Operating resources 6. Fixed assets 	<ol style="list-style-type: none"> 1. Determine requirements 2. Define activities 3. Schedule activities 4. Estimate activity durations 5. Prioritise activities
IMPLEMENTATION PHASE	NEW VENTURE CREATION ACTIVITIES	PROJECT MANAGEMENT ACTIVITIES
	<ol style="list-style-type: none"> 1. Site acquisition 2. Establish business 3. Take first sales order 4. Implement customer strategy 5. Establish legal contacts/section 6. Establish finance department and procedures 7. Establish information system 8. Establish and implement quality standards 	<ol style="list-style-type: none"> 1. Monitor and control 2. Perform change control 3. Monitor and control risks 4. Perform quality management

Figure 6.3: A project management framework for enhancing new venture creation

Based on the experiences narrated in the results chapter, it can be concluded that it is possible to integrate project management principles into the new venture creation process.

6.5 CONCLUSION ON OBJECTIVE 3

Objective three was to practically apply the model in the creation of a new small scale bio-diesel venture and refine it if necessary. This objective was achieved. The results of the

practical implementation shows that planning forms an important part of any entrepreneurial venture and is also at the core of project management. The research confirmed the value of good planning and activity scheduling but also exposed the failure of plans to cope with rapid changes based on feedback from other planning activities. The dependency between activities and their planning was also exposed. Dependencies can be managed with a Gantt chart or Network diagram, however, a lot of effort goes into maintaining these charts, when changes are happening quickly and frequently. In practice, the team found it convenient to use a white board with sticky notes to represent those activities which have uncertain solution. It is a simple matter to move the activities and draw connecting lines between dependant activities. The different colours representing the activities for which teams or individual are responsible. This technique is adapted from agile project management and can be refined depending on the experience of the project manager and team and the complexity of the new business environment. In the case of this study, a 'product' was being developed simultaneously with the business processes, which complicated the project. The practical implementation also revealed that project management critical path method played a key role in the new venture process as this enabled the team to closely monitor the critical activities to ensure the project remained on track. WBS was found to be an essential tool in the planning endeavour as it firstly enabled the team to ensure that all the activities have been identified and secondly it showed which processes have uncertain solution.

The resource gathering cycle also benefited from the WBS as resources were allocated at activity level and activities grouped together for control purposes. Costs were allocated at activity level and the 'rolled up' to the next level and a cost for specific group of processes determined and for the entire project.

Implementation is about constructing the product, monitoring and control. Those processes for which the solution was known were controlled by monitoring progress against plan. The white board and sticky notes were effectively used in the implementation and control cycle for those processes for which the solution was not well defined and for which the solution could be discovered during the progress of the project.

Considerable value was gained in the application of the nine knowledge areas. In particular, risk and quality management highlighted the importance of applying the project management techniques to the new venture creation. A comprehensive risk plan identified risks early in the project and risk actions plans were proactively implemented.

Figure 6.4 below show the finished biodiesel plant. The main unit in the middle (blue) is the reactor and the blue unit on the right the washing tank. The system was electronically controlled by the control unit on the extreme right.



Figure 5.4: Biodiesel production plant

6.6 CONCLUSION ON OBJECTIVE 4

The sixth objective was to provide guidelines for implementing the model. The guidelines on implementation are provided below under recommendations.

6.7 RECOMMENDATIONS ON PRACTICE AND FUTURE RESEARCH

6.7.1 RECOMMENDATIONS FOR PRACTICE

Arising from this research, a number of recommendations can be made in terms of practice. Firstly, the tools and techniques of project management are a vital part of any new venture creation business. However, a reasonable in-depth knowledge of project management is required in order to not only know how to apply the tools, but also to know what tools to apply and at what point in the new venture creation process to apply them.

Secondly, it must be noted that every new venture is a project in its own right. Therefore, there can be value in assessing the project complexity and based on this decide on the skill levels required by both entrepreneur and project manager (even if this is one person). In this regard the work of Maylor (2003:37) is relevant. That is, overall, complexity = [organisational complexity] x [resource complexity] x [technical complexity]. It would be prudent to bear this complexity formula in mind, in the new venture creation process as it can influence the choice of project manager as well as project methodology to be used. It should also to be kept in mind that this complexity can change as the project progresses.

Thirdly, it should be emphasised that one of the key factors in the integration of the new venture and project management processes is WBS. The WBS firstly ensures that all the new venture activities are identified, as well as enabling the budget and schedule. This is standard project management practice. However, some activities cannot be broken down to the lowest level hence indicate uncertain solution. This should be seen as indication that this/these process/s are candidates for flexible project management methodology - APF. The disposal of the waste product produced from the reaction is a case in point. The detailed WBS could not be produced in this case and this process was then managed in an iterative, flexible and changeable way.

Lastly but not the least, the intrinsically diverse management philosophies of new venture creation and that of project management must be recognised and borne in mind at all times. This study clearly showed however that there are many new venture processes that can and should be managed in the structured way advocated by traditional project

management techniques. There were also those activities that either changed rapidly or had uncertain solution which could not easily be managed in the same way. In these cases APF of Wysocki (2012) are appropriate (see Chapter 3 for details of APM and the APF). It is therefore necessary for the project manager of a new venture creation project to have an understanding of both APM and APF.

6.7.2 FUTURE RESEARCH

Further research is necessary in order to validate this integrated project management based new venture creation process. The research carried out by Rico, et al. (2011) maintains that there is no process “road map” for an integrated model. They consider the field of systems analysis and design to be the skill set needed together with the entrepreneurial processes to produce such a model.

More research may be necessary in order to establish whether an entrepreneur, who has all the qualities necessary to start a new business, can also integrate the project management toolset with this. It may be more practical to appoint a project manager to assist in the process.

6.8 CONCLUSION

The ideal of a truly integrated model for new venture creation/ project management process model is achievable. Such a model should have a seamless interface between the two skill sets and the model applied here was not a seamless one. However, it was shown that these two diametrically opposed skills not only can, but should work together in the new venture creation process. The level of skills needed are directly related to the project complexity and should be addressed accordingly. There is a need for further research into combining the two skill sets of project management and new venture into a generic seamless process model that can be tailored to specific business requirements. This study has laid the foundation.

BIBLIOGRAPHY

Abrahamsson, P., Warsta, J., Siponen, T. & Ronjainen, J., 2003. *New Directions on Agile Methods: A Comparative Analysis*. Portland, Oregon, Proceeding of the International Conference on Software Engineering.

Allen, K. R., 2012. *New Venture Creation*. 6th ed. Andover: South Western. Cengage.

Anderson, D. & Merna, T., 2005. Project Management Strategy- Project Management represented as a process based set of management domains and the consequence for project management strategy. *International Journal of Project Management*, 21(6th), pp. 343 - 353.

Artto, K. & Wikström, K., 2005. What is project business. *International Journal Of Project Management*, 23(5th), pp. 343-353.

Attahir, Y. & Kojo, S., 2005. Planning and Performance of Small and Medium Enterprise Operators in a Country in Transition. *Journal of Small Business Management*, 43(4th), pp. 480-497.

Augustine, S., Payne, B. & Sencindiver, F. & W. S., 2005. Agile Project Management:

Steering from the edges.. *Communication of the ACM*, December, 48(12), pp. 85-89.

Bangs, D. H., 1993. *The first 12 months. A complete start-up guide for entrepreneurs*. 1 ed. Chicago: Kogan Page Ltd.

Barrow, C., Burje, G., Molian, D. & Brown, R., 2005. *Enterprise development. The challenges of starting, growing and selling business*. Thomson, London. 1 ed. London: Thomson.

Bath, C., 2009. When does the action start and finish? Making the case for an ethnographic action research in educational research. *Education Action Research*, 17(2), pp. 213-224.

Bhave, M. P., 1994. A process model of entrepreneurial venture creation.. *Journal of Business Venturing*, 9, 223-242, Volume 9, pp. 223-242.

Brown, K. B. & Hyer, N. L., 2010. *Managing projects, a team- Based Approach*. McGraw-Hill.. 1 ed. Boston: McGraw-Hill.

Bruwer, J.-P., 2012. The entrepreneurial mindset profile of South African small medium and micro enterprises (SMMEs) in the Cape Metropole. *African Journal of Business Management*, 6(15), pp. 5383-5388.

Bryman, A. & Bell, B., 2007. *Business Research Methods*. 3 ed. New York: Oxford University Press.

Burke, R., 2006. *Entrepreneurs Toolkit*. 1st ed. Cape Town: Burke Publishing.

Burke, R., 2007. *Project Management Techniques*. College ed. Cape Town: Burke Publishing.

Burke, R. & Barron, S., 2007. *Project Management Leadership, building creative teams*. 1st ed. Cape Town: Burke Publishing.

Bygrave, W., 1997. *The Portable MBA in Entrepreneurship*. 1st ed. Hoboken: John Wiley and sons, inc.

Cassidy, C. M. & Krietner, R., 2011. *Principles of Management*. 12th ed. Singapore: South-Western/Cengage Learning.

Chrisman, J. J., McMullan, E. & Hall, J., 2005. The influence of guided preparation on the long-term performance of new ventures. *Journal of Business Venturing*, 20(6th), pp. 769-791.

Cohen, D., Lindvall, M. & Costa, P., 2004. An introduction to agile methods.. *Advances in Computers*, Volume 62, pp. 1-66.

Conforto, E., C. & Amaral, D. C., 2009. *Applying Agile Project Management Approach to NPD. The case of a small Technology-based Enterprise*. Enschede/Netherlands, Institute for Advanced Management Studies in Management.

Conforto, E. C. & Amaral, D. C., 2010. Applying Agile Project Management Approach to NPD.. *Project Management Journal*, 41(2), pp. 73-80.

Coughlan, P. & Coughlan, D., 2002. Action research for operations management. *International Journal of Operations & Production Management*, 22(2), pp. 220-240.

Cronholm, S. & Goldkuhl, G., 2003. *Understanding the practice of action research*. Reading, 2nd European Conference on Research Methods in Business and Management,

Danilovic, M. & & Browning, T. R., 2007. Managing complex product development projects with design structure matrices and domain mapping matrices. *International Journal of Project Management*. 25 (2007) 300-314., Volume 25, pp. 300-314.

Danilovic, M. & Browning, T. R., 2007. Managing complex product development projects with design structure matrices and domain mapping matrices. *International Journal of Project Management*, Volume 25, pp. 300-314.

Davison, R., Martinsons, M. & & Kock, N., 2004. Principles of canonical action research. *Information Systems Journal*, 14(1), pp. 65-86.

Davison, R., Martinsons, M. & Kock, N., 2004. Principles of canonical action research. *Information Systems Journal*, 14(1st), pp. 65-86.

De Meyer, A., Loch, C. H. & Pich, T., 2002. Managing Project Uncertainty: From Variation to Chaos. *MIT Sloan Management Review*, 43(2), pp. 60-67.

De Meyer, A., Loch, C. & Pich, M., 2006. *Working Paper Series*. [Online] Available at: http://www.jbs.cam.ac.uk/fileadmin/user_upload/research/workingpapers/wp0621.pdf [Accessed 7 1 2013].

Deakins, D. & Freel, M., 2009. *Entrepreneurship and small firms. 5th Edition*,. 5th ed. London: McGraw-Hill.

DeBaise, C., 2010. *The Wall Street Journal*. [Online] Available at: <http://online.wsj.com/news/articles/SB10001424052748703580904574638282624707184> [Accessed 7 January 2013].

Dick, B., 2000. *Sessions of Areol – action research and evaluation online*. [Online] Available at: <http://www.scu.edu.au/schools/gcm/ar/areol/areol-session01.ftml> [Accessed 06 03 2007].

DTI, 2012. *SMME Development: Institutional Support for Small Medium Micro Enterprise Development*. [Online] Available at: http://www.thedti.gov.za/sme_development/inst_support.jsp [Accessed 7 1 2013].

Dubakov, M. & Stevens, P., 2008. *TargetProcess, Inc*. [Online] Available at: <http://www.targetprocess.com/download/whitepaper/agiletools.pdf> [Accessed 10 05 2011].

Endeavour, 2012. *The key archetypes of an Entrepreneurial Culture*. [Online] Available at: <http://sablenetwork.com/pdf/Entrepreneurship%20White%20Paper.pdf> [Accessed 16 06 2012].

Erkko, A., Gerard, G. & Oliver, A., 2011. International Entrepreneurship and Capability Development – Quality Evidence and Future Research Direction. *Entrepreneurship Theory and Practice*. January, 2011., 35(1st), p. 11–37.

Ettlie, J. E. & Subramaniam, M., 2004. Changing Strategies and Tactics for new Product Development. *Journal of Product Innovation Management*, 21(2nd), pp. 95-109.

Frame, D., 2008. *Agile Project Management: Re-thinking PMBOK, CMM, ISO 9000 and Other Standards*. [Online] Available at: <http://www.nysforum.org/events/agileprojectmanagement> [Accessed 2 3 2011].

Garvin, A., 2004. What Every CEO Should Know About Creating New Businesses. *Harvard Business Review*, 82(7/8), pp. 18-21.

Griffiths, M., 2004. *Using Agile alongside PMBOK*. Anaheim, PMI Global Congress.

Gruber, R., 2010. *Uncovering the Value of Planning in New Venture Creation*. [Online] Available at: <http://www.studymode.com/essays/Reading-Notes-For-Gruber-Article-Uncovering-407625.html> [Accessed 24 08 2013].

Haber, S. & Reichel, A., 2007. The cumulative Nature of the entrepreneurial process: The contribution of human capital, planning and environment resources to small venture performance. *Journal of Business Venturing*, 22(1st), pp. 119-145.

Hatten, T., 2006. *Small Business Management Entrepreneurship and Beyond*. 3rd ed. Boston: Houghton Mifflin Company Publisher.

Heale, G., 2003. Applying theory to practice: an action research resource pack for professionals. *Clinical Chiropractic*. 6: 4-14, Volume 6, pp. 4-14.

Herrington, M., Kew, J. & Kew, P., 2010. *Global Entrepreneurship Monitor*, Cape Town: Graduate School of Business, University of Cape Town.

Highsmith, J., 2010. *Agile Project Management. Creating Innovative Products*. 2nd ed. Upper Saddle River: Addison-Wesley.

Hisrich, R. D., Peters, P. P. & Shepherd, D. A., 2010. *Entrepreneurship*. 8th ed. Boston: McGraw-Hill.

Jarrow, R. & Larson, M., 2011. *The Meaning of Market Efficiency*. [Online] Available at: <http://www.cba.uh.edu/departments/finance/documents/RJarrow%20MarketEfficiency6.pdf> [Accessed 07 01 2014].

Kariv, D., 2011. *Entrepreneurship. An international introduction*. 1st ed. London.:Routledge, Taylor and Francis.

Karlsson, T. & Honig, B., 2009. Judging a business by its cover: An institutional perspective on new ventures and the business plan. *Journal of Business Venturing*, Volume 24, pp. 27-45.

Kendrick, T., 2009. *Identifying and managing Project Risk. Essential Tools for Failure-Proofing your Project*. 1st ed. Saranac Lake: AMACOM.

Kettunen, P., 2009. Adopting key lessons from agile manufacturing to agile software product development - A comparative study. *Technovation*, 29(6-7), pp. 408-422.

Khanlou, N. & Peter, E., 2005. Participatory Action Research. Considerations for ethical review. *Social Science and Medicine*, 60(10th), pp. 2333-2340.

Kickul, J., Gundry, Saulo, D. & Barbosa, I. W., 2009. Intuition versus analysis? Testing differential models of cognitive style on entrepreneurial self-efficacy and the new venture creation process. *Entrepreneurship Theory and Practice*, 33(2), pp. 439-445.

Kloppenborg, T. J., 2009. *Project Management: A contemporary approach*. 1st ed. Andover: South- Western, Cengage Learning.

Kunene, R., 2008. *A critical analysis of entrepreneurial and business skills in SME's in the textile and clothing industry in Johannesburg, South Africa*. PHD thesis, University of Pretoria. [Online]
Available at: <http://upetd.up.ac.za/thesis/available/etd-04272009-101339/unrestricted/00front.pdf> [Accessed 07 05 2012].

Larson, E. W. & Gray, F. G., 2011. *Project Management, The Managerial Process*. 5th ed. Boston.:McGraw-Hill/Irwin.

Leau, Y. B., Wooi, K. L., Wai, Y. T. & Soo., F. T., 2012. *Software Development Life Cycle AGILE vs Traditional Approaches*. Singapore, International Conference on Information and Network Technology.

Lechler, T., Edington, H. & Gao, J., 2012. Challenging classical project management. Turning project uncertainties into business opportunities. *Project Management Journal*, 43(6), pp. 59-69.

Leedy, P. & Ormrod, E., 2005. *Practical Research*. 8th ed. Upper Saddle River: Pearson.

Lenfle, S. & Loch, C., 2010. Lost Roots: How project management came to emphasise control over flexibility and novelty. *California Management Review*, 32(1st), pp. 32-35.

Mariotti, S. & Glackin, C., 2012. *Entrepreneurship & Small Business Management*. 1 ed. Boston: Prentice Hall.

Maylor, H., 2003. *Project Management*. 3rd ed. London: Prentice Hall.

McNiff, J., 2001. *Action Research and the Professional Learning of Teachers*. Palestine, Quattan Foundation.

McNiff, J., 2002. *Action research for professional development. Concise advice for new action researchers..* [Online]
Available at: <http://www.jeanmcniff.com/ar-booklet.asp>
[Accessed 10 05 2011].

McNiff, J. & Whitehead, J., 2006. *All you need to know about Action Research*. 1st ed. Los Angeles: Sage Publications.

Meredith, J. R. & Mantel, S. J., 2012. *Project management. A managerial approach*. 8th ed. Singapore: John Wiley & Sons.

Minister in the Presidency, P., 2009. *Medium Term Strategic Framework*. [Online]
Available at: http://www.dhs.gov.za/uploads/documents/Link1_MTSF_2009_2014.pdf
[Accessed 7 01 2014].

Nandi, J. K., 2008. Achievement Motivation Amongst Front Line Managers. *ICFAI Journal of Organizational Behavior*, 7(3), pp. 58-64.

Nicholaides, A., 2011. Entrepreneurship- the role of Higher Education in South. *African Educational Reserach Journal*, 2(4), pp. 1043-1050.

Ocampo, J. A., 2005. *A Broad View of Macroeconomic Stability*. [Online] Available at: http://www.un.org/esa/desa/papers/2005/wp1_2005.pdf [Accessed 23 06 2012].

Ordowich, C. et al., 2007. *Using action research to promote STS theory and practice*. Oslo, International Action Research Conference Work Institute.

Pinto, J. K., 2007. *Achieving a Competitive Advantage*. 1 ed. Upper Saddle River: Pearson.

Pinto, J. K., 2010. *Achieving a Competitive Advantage*. 2nd ed. Upper Saddle River: Pearson.

PMI, 2008. *A guide to the Project Management Body of Knowledge*. 4th ed. Newtown Square: Project Management Institute.

Riaz, A., 2011. Business plans need to be flexible. *Expresso Business Magazine*, 11.

Richardson, G. L., 2010. *Project Management. Theory and Practice..* 2nd ed. Boca Raton: Taylor and Francis Group.

Rico, T. H., Dubois, P. M. & Le Coq, M., 2011. *A Process-Based Model of New Venture Creation: Toward Modelling a Practical Application of Extant Theory using SADT Diagrams*. Daejeon, CIRP Design Conference.

Riel, M., 2013. *Understanding Action Research*. [Online] Available at: <http://cadres.pepperdine.edu/ccar/define.html> [Accessed 7 1 2014].

Sautet, F., 2005. *The Role Of Institutions in Entrprenurship: Implications for Development Policy*. [Online]

Available at: <http://www.oecd.org/dac/governance-development/37791298.pdf>
[Accessed 04 10 2012].

SBP, 2009. *Small Business Development in South Africa. Time to re-assess..* [Online]
Available at:
http://www.sbp.org.za/uploads/media/SBP_ALERT_smme_development_in_SA.pdf
[Accessed 21 01 2012].

Schroeder, H., 2011. After the Crisis: Project Management in the New Business Environment. *PM World Today*, XIII(VIII), pp. 1-9.

Schumpeter, J. A., 1934. *The Theory of economic development. New Brunswick: Translation publishers.* 1st ed. New Brunswick: Translation publishers.

Schwab, K. 2010 2011. The Global Competitiveness Report, Geneva: World Economic Forum

Sliger, M., 2007. *A Project Manager's Survival Guide to Going Agile..* [Online]
Available at: http://www.rallydev.com/documents/rally_survival_guide_0307.pdf
[Accessed 10 04 2011].

Stewart, R. M., 2010. *South Africa Unemployment Hits 25.2%.* [Online]
Available at:
<http://online.wsj.com/news/articles/SB10001424052748703866704575223993865587422>
[Accessed 7 02 2010].

Stibel, J. H., 2009. Are you an inventor or an entrepreneur?. *Harvard Business Review*, 30 06.

Stretton, A., 2007. A short history of modern project management. *PM world Today*, 9(10), pp. 1-18.

Stringer, E. T., 1996. *Action Research a handbook for practitioners*. 1st ed. s.l.:Sage publications.

Subhash, S. & Bose, C., 2010. *Entrepreneur skill for New Venture Creation..* [Online] Available at: <http://www.slideshare.net/sanil/entrepreneurs-skills-for-new-venture-creation> [Accessed 20 11 2011].

Susman, G., 1983. Action research a sociotechnical system perspective. In: G. Morgan, ed. *Beyond Method: Strategys for Social Research*. London: Sage, pp. 95-113.

Turton, N. & Herrington, M., 2012. *The Global Entrpreneurial Monitor*, Wellesley: BABSON College.

Westland, J., 2006. *The Project Management Life Cycle*. 1st ed. London: Kogan Page.

Whitehead, D., 2005. Project management and action research: two sides of the same coin. *Journal of Health Organisation and Management. ABI/INFORM Global*, 19(6th), pp. 519-531.

Wickham, P. H., 2004. *Strategic Entrepreneurship*. 4th ed. Harlow: Prentice Hall.

Wysocki, R. K., 2010. *Adaptaive Project Framework. Managing Complexity in the Face of Uncertainty*. 1st ed. Upper Saddle River, New York: Addison-Wesley.

Wysocki, R. K., 2012. *Effective Project Management. Traditional, Agile, Extreme*. 6th ed. Hoboken: Wiley Publishing, Inc.

Young, R., Young, M., Jordan, E. & O'Connor, P., 2012. Young, R., Young, M., Jordan, E. and O'Connor, P., (2012). Is strategy being implemented through projects? Contrary evidence from a leader in New Public Management. *International Journal of Project*

Management. (2012), 30(8), 887-900. *International Journal of Project Management*, 30(8th), pp. 887-900.