

**A Case Study on
New Product Development and the New Product Process
in Residential Property Development**

By

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Submitted in partial fulfillment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

The Graduate School of Business

University of KwaZulu-Natal

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June 2004

30 June 2004

TO WHOM IT MAY CONCERN

RE: CONFIDENTIALITY CLAUSE

Due to the strategic importance of this research it would be appreciated if the contents remain confidential and not be circulated for a period of 5 (five) years.

Sincerely

A handwritten signature in black ink, appearing to be 'M. Maritz', written in a cursive style.

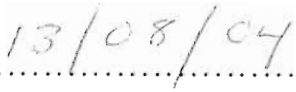
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DECLARATION

This research has not been previously accepted for any degree and is not currently submitted in candidature for any degree.

Signed 

Date 

ACKNOWLEDGEMENTS

I wish to acknowledge the University Of Natal Graduate School of Business for giving me the opportunity to reach for a dream and Dr Dennis Laxton in particular for his guidance and assistance during the writing of this dissertation.

My deepest gratitude goes to my wife and children for standing by me during the process that led to the completion of this dissertation. This document is as much the result of their support and understanding as it is of my efforts and dedication. They have sacrificed greatly for me to attain my goal and I can only hope that I will one day be able to repay them in kind.

I wish to thank my mother and my father for supporting me and for believing in me throughout my life and throughout this process, even when I doubted myself. They were always there when I needed guidance and encouragement and their faith fortified me during the long hours of study and research. I only wish that they were both able to continue this journey to its end. This one's for you "Big Guy".

Finally, I would like to thank my Lord and God for giving me the ability and perseverance to complete this long and taxing journey. He has given me the courage to challenge myself and to succeed and throughout the process He has never disappointed me, even when I disappointed myself.

ABSTRACT

The purpose of this study is to provide a glimpse into the New Product Development (NPD) Process as it is being utilised within the context of the residential property development industry in South Africa. The main objective in undertaking this study was to gain an insight into a process that has so far not received much attention from the academic world despite the fact that it is a process that has recently become an important creator of wealth for many South Africans.

The case study research design was chosen, because it provides an ideal vehicle for conducting preliminary studies into a specific subject that has not received much attention before. The nature of the case study approach allows for much more in-depth and broader investigation than would be possible in a quantitative study.

The specific case under review (*SafDev (Pty) Ltd*) was chosen, because of the company's involvement in the entire spectrum of the residential property development industry in South Africa. In addition, the company showed an openness and willingness to share its experiences and processes that is not usually found in this particular industry. Most importantly, the company offered the author the opportunity to work for them in order to gain the necessary first hand experience and knowledge that would be needed to do the study. The company also arranged for the author to gain access to all of their professional team members and to all of their internal documents in order to assist with the research.

From a technical point of view, the study involved the following basic steps. First, a generic model of NPD was identified and unpacked. Next, the specific process used by *SafDev* was identified and analysed, after which specific recommendations were made on how the process could be improved.

TABLE OF CONTENTS

	PAGE
CHAPTER ONE INTRODUCTION	1
1.1 Introduction	1
1.2 Background of the Research	3
1.3 Motivation for the Research	5
1.4 Value of the Project	6
1.5 Problem Statement	7
1.6 Objectives of the Study	7
1.7 Research Methodology	7
1.7.1 Sample and Sampling Technique	7
1.7.2 Design and Analytic Techniques	8
1.7.3 Method of Data Collection	8
1.7.3.1 Literature review	8
1.7.3.2 Case Study: <i>SafDev</i>	8
1.7.4 Data Analysis Techniques	9
1.8 Limitations of the Project	9
1.9 Structure of the Study	10
1.10 Summary	11
 CHAPTER TWO: LITERATURE REVIEW	 13
2.1 Introduction	13
2.2 The New Product Process	14
2.2.1 Opportunity Selection and Identification	18
2.2.2 Concept Generation	22
2.2.3 Concept/Project Evaluation	24
2.2.4 Development	26
2.2.5 Launch	28
2.3 Critical Success Factors in New Product Development	29
2.3.1 Strategic Factors vs. Functional Factors	31
2.3.1.1 Critical Success Factors – Strategic	31
2.3.1.2 Critical Success Factors – Functional	33
2.3.2 Financial Success vs. Project Success	36
2.3.2.1 Financial Success	36
2.3.2.2 Project Success	37
2.3.3 Conclusion	40

CHAPTER THREE: CASE STUDY	42
3.1 Introduction (What is <i>SafDev</i> ?)	42
3.2 Mission Statement	42
3.3 Corporate Vision	43
3.4 Guiding Principles of the Corporate Strategic Plan (Financial)	43
3.5 Guiding Principles of the Corporate Strategic Plan (Strategic)	44
3.6 The <i>SafDev</i> Business Model	45
3.6.1 General Modus Operandi	45
3.6.2 Financial and Risk Considerations	46
3.6.3 Mitigation of Capital Risk	47
3.6.4 Structuring of Project Finance	47
3.7 The New Product Development Process at <i>SafDev</i>	48
3.7.1 What is a Stage-Gate Process?	48
3.7.2 The <i>SafDev</i> Stage Gate-Process	51
3.7.2.1 Identify land	51
3.7.2.2 Viability/Scoping Stage	51
3.7.2.3 The Feasibility/Building the Business Case Stage	57
3.7.2.4 Secure Land	64
3.7.2.5 Marketing Launch	65
3.8 Conclusion	65
CHAPTER FOUR: ANALYSIS OF CASE STUDY	68
4.1 Introduction	68
4.2 Financial Success Criteria	69
4.2.1 Project Success	69
4.2.2 Product Effectiveness	69
4.2.3 Market Conditions	78
4.2.4 Conclusion	80
4.3 Project Success Criteria	80
4.3.1 The Development Process	80
4.3.1.1 The Stage-Gate Process at <i>SafDev</i>	81
4.3.1.2 The Generic NPD Model	88
4.3.2 Project Teams	93
4.3.3 Senior Management Support	95
4.3.4 Communication	95
4.3.5 Learning from the Past	97
4.4 Conclusion	98
CHAPTER FIVE: RECOMMENDATIONS	99
5.1 Introduction	99
5.2 Financial Success Criteria	99
5.2.1 Product Effectiveness	100
5.2.2 Market Conditions	102

5.3	Project Success Criteria	103
5.3.1	The Development Process (Stage-Gate)	104
	5.3.1.1 Optimising the Stage-Gate Process	104
	5.3.1.2 Adapting the Traditional Stage-Gate	108
5.3.2	Project Teams	112
5.3.3	Senior Management Support	114
5.3.4	Communication	115
5.3.5	Learning from the Past	116
5.4	Conclusion	117

BIBLIOGRAPHY	119
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LIST OF TABLES

	PAGE
Table 2.1: Six Basic Product Development Strategic Orientations	19

LIST OF FIGURES

	PAGE
Figure 2.1: Generic New Products Process (Pycraft et al)	15
Figure 2.2: Generic New Products Process	16
Figure 2.3: Concept Screening	25
Figure 2.4: The Conflicting Masters of New Products management	30
Figure 3.1: Model of the Stage-Gate Process	49
Figure 3.2: Model of the <i>SafDev</i> Stage-Gate Process	51
Figure 3.3: Elements of the Feasibility Assessment	59
Figure 4.1: Model for evaluation of Critical Success Criteria	68
Figure 5.1: Improving Financial Success Criteria at <i>SafDev</i>	99
Figure 5.2: Improving Project Success Criteria at <i>SafDev</i>	103
Figure 5.3: Proposed Two-Stream NPD Process for <i>SafDev</i>	112
Figure 5.4: Proposed Cross Functional Corporate Hierarchy for <i>SafDev</i>	113

CHAPTER ONE

1.1 Introduction

During the past seven years, residential property development in South Africa has undergone a number of significant changes, in terms of the clients that are being targeted, the products that are being offered and the prices that are being achieved.

These changes in the market have been accredited to several different factors:

- The government's commitment to addressing the enormous backlog in low cost housing;
- The increased need for secure housing developments, as a result of South Africa's relatively high violent crime rate;
- The importance of identifying and addressing the housing needs of the rapidly emerging black middle class;
- The emergence of the highly profitable niche market for foreign residential property investors in South Africa, especially in coastal areas;
- The phenomenal capital growth in the residential property market, which has lured investors away from other investment vehicles such as life assurance and the equities markets;
- The spate of interest rate cuts during the past twelve months, which has encouraged further investment in the residential property market.

Together, these factors have contributed greatly to the current boom in residential property development. During the past five years, in particular, residential property has yielded a consistent return of 12% per year, or higher, and it is widely expected that this trend will continue for the next two to three years, especially if interest rates remain at their current low levels.

Due to the attractiveness of the residential property market, a large number of new players, both local and international, have entered the market. Unfortunately, very few of these developers have brought new ideas or concepts to the market. The general tendency has been to flood the market with large numbers of very similar

products and marketing approaches. This tendency can be found at both the low cost and up market extremes of the residential property spectrum.

However, despite the large degree of replication in the market, a company's ability to achieve sustainable long-term success in this competitive market still depends to a large extent on the company's capacity to provide the market with as many new offerings as possible, as quickly as possible, – *before the property cycle declines* - whilst at the same time offering some form of differentiation and innovation to the customer. For this to happen, a great deal of understanding is needed within the company of the importance of new product development, as well as the new product process.

Anecdotal evidence suggests that the new product process in most of the residential development industry is based on a combination of both tried and tested processes and intuition or “gut feel. Unfortunately, despite the enormous amount of empirical and analytical research that has been done on new product processes in almost every conceivable industry, very little information is available on the specific new products process/processes in the residential property industry in South Africa, to support or refute this anecdotal evidence. For example, very little, if any, research has been done on the use of analytical tools such as market research in determining the target market or the marketing mix of a specific new offering.

The purpose of this study is therefore to shed more light on new product development, in general, and the new product process within the residential property development industry, in particular. The study will take the form of a case study of a specific company - **SafDev** Holdings (Pty) Ltd - within the industry to gain more knowledge of the actual situation in the industry.

Firstly, the study aims to provide a thorough review of the current literature on new product development and the new product process, and secondly to apply this knowledge to identify the exact new product process being used by **SafDev** and to identify possible areas in which the new product process might be improved.

1.2 Background of the Research

SafDev, the object of this study, is currently one of the most successful privately owned residential property development companies in the Gauteng region. It was chosen for this case study, because it is involved in the entire spectrum of residential property development, including residential infrastructure development, large-scale low cost housing development, low and middle income sectional title developments and exclusive up market security golf estates.

As stated earlier, the recent upsurge in property prices, the emergence of several new market segments, and the recent rapid decline in interest rates in South Africa have acted together as a wonderful catalyst for the residential property development sector. As in any market, this success has also attracted numerous new players into the market.

Unfortunately, a general lack of financial resources, technical skills and industry experience on the part of many of these new entrants has resulted in many projects that merely imitate or duplicate earlier successes. The market has literally been flooded with products that offer very little differentiation or innovation. A very visible example in this regard is the large number of very similar “Tuscan” style housing developments that have been launched in Gauteng in recent years. During a period in which the market is booming, such as now, these limitations can be overcome or compensated for, but it is quite possible that many of these new entrants could face severe difficulties if the market suddenly changes for the worse or loses some of its current dynamism.

Despite the glut of similar or in some instances “copy cat” developments that have been constructed in recent years, sustainable long-term residential development success, like virtually all other businesses, is dependent on a company’s ability to distinguish itself and its products from those of its competitors. In other words, the more competitive the market becomes, the more important it is to ensure that the products that are produced meet the specific needs of the clients in the market.

The company's that achieve long-term success are the market leaders, not the market followers.

In this regard, the key to success lies in the organisation's ability to develop a new product process that correctly identifies and meets the current and future needs of the customer.

Bhowan et al (2001), describe new product development as "the process of applying new technologies and product ideas to profitably produce a product that fulfils a need in the marketplace". In some instances this could involve the design of a completely new concept, while in other instances; it could merely involve the design of a new way to market or sell the product. Bhowan et al (2001), correctly point out that very few new products are true innovations. In fact, "most are simply variations of similar products that are created by changing the packaging, the form or the basic features and benefits of the product".

According to the above definition the main objective of designing products and services is, therefore, to satisfy customers by meeting their actual or anticipated needs and expectations, thereby enhancing the competitiveness of an organisation. Crawford and Di Benedetto (2003) take this point even further by pointing out that new product development addresses two of the most important competitive concerns of all organisations, namely that competition is fiercest when there is little product differentiation, and secondly that competitive advantage is gained through the development of a product that the competition does not have. Anderson and Narus (1999) support this argument by contending that in most cases, "a successful new product does more good for an organisation than anything else that it can possibly do".

One of the most important factors to remember in any discussion on new product development and the new product process is the fact that in every organisation there is a person or persons who knowingly or unknowingly are charged with getting new products onto the market. In many cases this involves an intuitive process, but in highly successful organisations, this often involves the use of analytical techniques (Anderson and Narus, 1999).

There are numerous specific design tools or techniques that can be used to develop new products, but for these specific techniques to be consistently successful requires that they pass through several stages that form an approximate sequence, often referred to as the new product process (Pycraft et al, 2000).

The literature on new products development contains various interpretations of the new products process concept, especially when it is viewed from the different functional perspectives, including marketing, engineering, design or production. The basic elements that they all seem to share include: ideation; concept generation; concept screening; concept development; and launch/commercialisation (Anderson and Narus, 1999).

At the outset, however, it is important to remember that the process does not always follow a linear progression. Many of the elements mentioned above are interrelated and may occur concurrently or in a different sequence.

1.3 Motivation for the Research

As with any industry, success in the residential property industry also depends to a large extent on a firm's ability to regularly develop and launch innovative new products. This ability is, however, based on the company's capacity to generate new ideas, concepts and products. This capacity in turn depends, to a large extent, on the new product development process within the company.

Due to the legal-technical nature of the property development industry and the influence that the engineering profession has had on the industry, there are a number of technically required and legally subscribed steps that have to be followed during the NPD process and as a result, most companies follow a very similar rigid and highly hierarchical/mechanical NPD process. For the most part, however, this process is not specifically designed to encourage creative thought or innovation – it is merely a process through which the developer ensures that all the legal and technical requirements of the project have been met.

The motivation for this study is therefore, to investigate and analyse the existing process, in order to identify ways in which the process can be improved or refined in order to encourage greater innovation and product differentiation.

1.4 Value of the Project

Apart from achieving commercial success, *SafDev*, unlike the majority of other residential property development companies, has consistently managed to meet the challenge of innovation. The value of this study therefore lies in identifying what *SafDev* does, how they do it, and whether or not it can be improved. This information could be of particular interest to new entrants into the property development market, who do not yet have the level of experience that is required.

SafDev's business success depends to a great extent on its ability to identify and develop new products for sale to the market; to identify new markets; and its ability to identify new and innovative ways of getting the product to market. Not only is it important for the company's survival that they identify new products, they also have to ensure that the products are viable and the time to market is as short as possible. In addition, the introduction of a large number of new firms into the market has placed pressure on the company to not only develop new products, but also products that provide some form of product differentiation through innovation.

The major benefit of this study is therefore, to provide *SafDev* and other companies like it with guidance on how to improve their current new products process, so that it meets the demands of the market.

A secondary advantage of the study is the fact that it could provide useful insight into new product development in the property development market, in general. The study does not represent the entire market, but it may provide some insights that could uncover areas of interest for industry wide research in the future.

1.5 Problem Statement

What is New Product Development and why is it important?

What are the common elements of the various new product processes?

What is the nature of the new products process at *SafDev*?

Can the new products process at *SafDev* be improved?

How can the new products process at *SafDev* be improved?

1.6 Objectives of the Study

The specific objectives of this study are:

- To obtain in depth knowledge of new product development and the new product process through a thorough review of the literature on the topic.
- To use this knowledge to identify and analyse the specific new product process being utilised by *SafDev*.
- To suggest ways in which the *SafDev* new product process might be improved.

1.7 Research Methodology

1.7.1 Sample and sampling technique

The sample population includes all of the persons involved in the new product development process at *SafDev* during the past year. This includes employees, as well as contractors and sub-contractors. The specific time period as indicated is used, because the focus of the study is on the current new product development process.

For the purposes of this study, a census of the entire populations will be used. This is based on the fact that the population is relatively small and

the fact that in the case of the sub-contractors, in particular, there is a great degree of variability with regards to the specific inputs that they may make into the new product development process. In this regard, it should be mentioned that the sub-contractors represent such varied professions and occupations as architects, engineers, plumbers and marketers. There is also a great deal of variability with regards to the specific projects/products in which specific individuals are involved. As stated earlier, the projects range from large-scale low-cost housing projects to up market golf estates.

The details of the employees and sub-contractors involved will be obtained from the administrative records of the company.

1.7.2 Design and Analytic Techniques

The research will be conducted as a descriptive case study, based on qualitative information, which will be gathered through secondary sources and personal interviews with respondents.

1.7.3 Method of Data Collection

1.7.3.1 Literature review

For the purpose of the literature review on the new product development and the new products process, the study will rely exclusively on secondary sources of information such as textbooks, research journals, marketing journals, professional journals and online resources.

1.7.3.2 Case Study: *SafDev*

Unstructured personal interviews will be used for the collection of data for this section of the study. This will be done, because of the relatively small size and close geographic proximity of the census

sample, as well as the need to obtain as much detailed information as possible from the respective respondents. The variability of the sample also requires that the researcher be available to provide clarity on the purpose and content of the research if needed.

In addition, use will be made of the company's formal training and operational guidelines to identify the formal processes that are involved in defining the New Product Process within the company.

1.7.4 Data Analysis Techniques

Unlike statistical studies, case studies are not designed to capture a population's specific characteristics by making inferences from a sample's characteristics. Case studies place more emphasis on a full contextual analysis of events and their interrelationships. For the most part, as in this case, these analyses are based on qualitative rather than quantitative data, which makes statistical analysis difficult if not impossible.

Case studies do, however, provide considerable detail on a specific topic or issue and this provides valuable insight for problem solving, evaluation and strategy. In this particular case, the data gathered from the *SafDev* case study cannot be used as a statistical representation of the entire population of group residential property developers in South Africa, but will provide in depth information on the specific company and issue under review.

1.8 Limitations of the Project

The most obvious limitation of this study and for that matter any case study, is the fact that it is not necessarily representative of the entire industry or research subject.

As with all case studies, this particular study focuses on a particular organization within a specific area of interest. As such, it can not be assumed that the

information and analysis contained in this study will necessarily be reflective of the industry as a whole.

In addition, it must be mentioned that the study is limited in scope, due to the fact that it analyses and discusses the NPD process in its broadest sense. The NPD process is in reality an extremely complex and wide-ranging process that could involve a multitude of highly technical and specialized steps. The object of this study is, however, not to analyse the micro elements of the process, but rather to investigate the general application of the approach within the context of the residential property development industry in South Africa.

1.9 Structure of the Study

Apart from this Chapter, the study will also include the following four Chapters:

- **Chapter Two**

This Chapter provides a thorough investigation, in the form of a comprehensive literature review, of the New Product Development theories and models. In particular, considerable attention will be paid to identifying and analysing the generic processes that have been developed by various researchers, academics and practitioners, as well as identifying those critical success factors that contribute to the success of these processes.

The true value of this chapter will be the identification or development of a generic model for New Product Development as well as a model based on the critical factors for New Product development success that will then be used as the framework against which the process at *SafDev* can be identified and later analysed.

- **Chapter Three**

Chapter Three provides the reader with an in depth look at the history and current operations of the *SafDev* group, as well as identifying and defining the specific new product process that is currently being used at *SafDev*.

- **Chapter Four**

In this Chapter, the information provided by the case study will be analysed and evaluated against the model/s developed in Chapter 2. In this regard, the Chapter will endeavour to combine the theory with the reality in order identify those aspects of the New Products Process at *SafDev* that are being done well and those aspects that might require further attention.

- **Chapter Five**

The final Chapter of this study will provide practical recommendations on how the New Products Process at *SafDev* can be improved. Both in terms of reinforcing and improving those aspects that are being handled well, and in addressing those aspects that are not being done properly.

1.10 Summary

As stated above, the purpose of this study is to gain an in-depth knowledge of new product development and the new product process, both in theory and in practice.

As such, the study has been structured in such a way that both the theoretical and practical aspects of new product development will receive equal attention. This will be done in two ways. Firstly, both the theory, in the form of a literature review, and the practice, in the form of a case study, will be discussed in isolation and secondly, the theory and practice will be combined to gain a more in depth knowledge of the topic.

From the chapter outline provided above, it will be noted that the study will begin with a thorough review of the available literature on new product development and the new product process. The aim of this review is to gain the necessary theoretical knowledge of the topic, in order to identify and analyse the specific new product approach being used by the company under review.

Once the necessary theoretical platform has been established, the study shifts its focus to the practical implementation of the theory. This is done in two stages. Firstly, through the use of a sector specific case study and secondly by combining the knowledge gained in the two separate sections to provide practical recommendations with a solid theoretical grounding.

CHAPTER TWO

2.1 Introduction

New Product Development (NPD) is one of the most important functions within an organisation that allows it to achieve its most important goal, namely to make a profit. In order to achieve this goal, an organisation has to provide a benefit or a value to others for which they are willing to pay. In most cases, however, the organisation does not operate in isolation, but rather in a highly competitive environment in which it competes directly with numerous other businesses for the resources of the same customers. As such, “competitors do the most damage when (1) there is so little product differentiation that price cutting takes everyone’s margins away or (2) when they have a desirable new product or service that we do not” (Crawford and Di Benedetto, 2003).

In order to overcome the obstacles that are caused by competition, a firm has to offer services or products that are different or better than those of the competitors. According to Crawford and Di Benedetto (2003), the study of New Product Development is, therefore, important, because it addresses two of the major competitive concerns for all organisations, namely that competition is fiercest when there is little product differentiation, and secondly that competitive advantage is gained through the development of a product that the competition does not have.

Schilling & Hill (1998) go even further by maintaining that, for most industries, new product development is now the single most important factor driving an organisation's success or failure. They, however, highlight the fact that out of the thousands of new products and services that are introduced to the public each year only a small percentage survive beyond the first year. It is, therefore, not only important for a company to develop new products, it is also important for a company to produce or develop new products and services that are relevant to and desired by the market.

This need to unearth the correct recipe for addressing both the necessity for innovation as well as the requirements of the market, has spurred numerous researchers from a variety of different fields such as strategic management, engineering and marketing to study new product development and the new product process. Unfortunately, they have all discovered that there is no single process, factor or magic ingredient that can ensure new product development success.

As Crawford and Di Benedetto (2003) correctly point out, "complexity of operations and decisions is the most dramatic hallmark of product innovation". In most cases, new product development is a combination of numerous disciplines, processes and procedures that vary from product to product and organisation to organisation. It is virtually impossible to exactly duplicate the new product process. Instead, researchers have endeavoured to identify a number of critical success factors and generic processes that can be combined in a myriad of different ways to achieve new product development success.

The purpose of this discussion is therefore not to provide an exact blueprint for new product development success, but rather to define a generic new product development process, to identify and analyse the elements of this generic process and to identify those critical success factors that are usually associated with successful new product design.

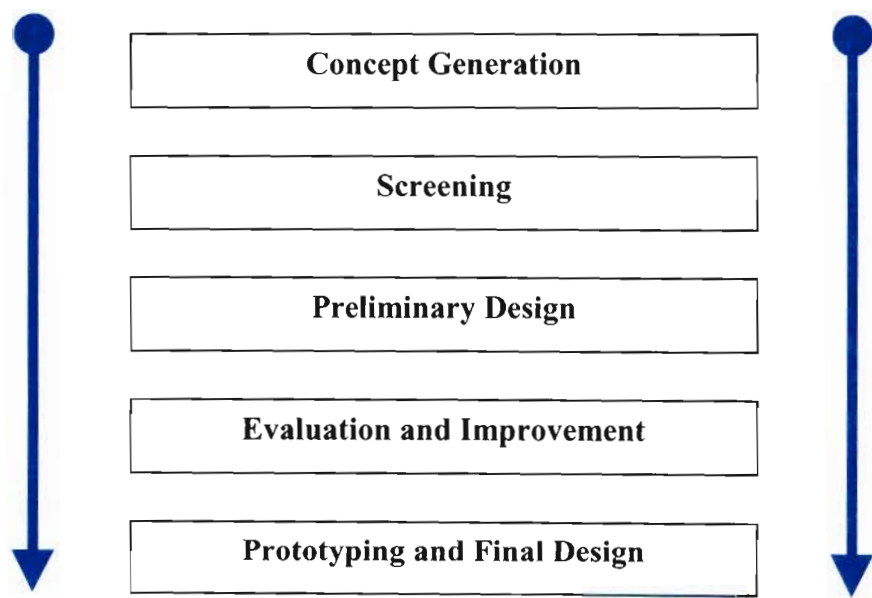
2.2 The New Product Process

According to Crawford and Di Benedetto (2003), new products management is a combination of art and science. On the one hand, there is the art, which is based on intuition, experience, hunch, or gut feel, while on the other hand there is the science which includes a variety of different analytical techniques specifically designed to ensure the creation of better products. These tools of marketing science were developed by marketing academics, but they are not just academic playthings. Today, they are operational in some of the best firms in the world.

The NPD process can be described as the process by which a new product idea is conceived, investigated, taken through the design process, manufactured and supported through obsolescence. (Crawford and Di Benedetto, 2003)

This NPD process can be roughly divided into five generic phases. The exact labelling of each phase may differ depending on which model is used, but in general all of the theoretical models contain the same basic elements. A good example of the subtle differences that can be found in the approaches of different writers is to compare the approach used by Crawford and Di Benedetto (2003) as shown in *Figure 2.2* and that which is used by Pycraft et al (2000) as shown in *Figure 2.1*.

Figure 2.1: Generic New Products Process (Pycraft et al)



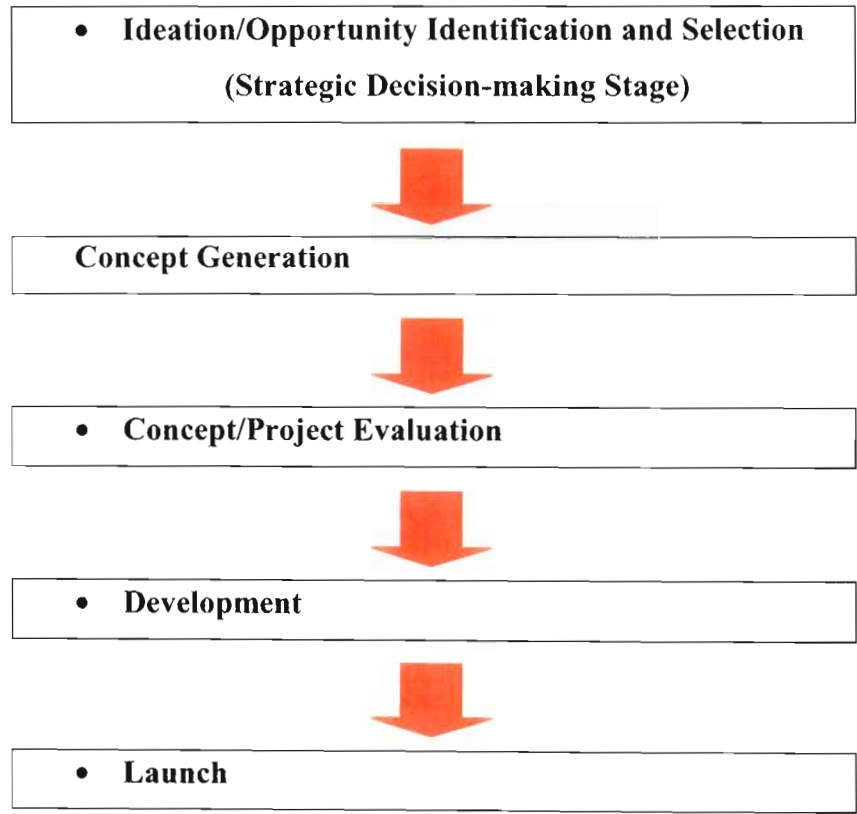
(Pycraft et al 2000:138)

Apart from the illustrating the differences that exist in naming the various steps in the process, this example also highlights the most important element that differs the approach used by Crawford and Di Benedetto's (2003) from the approach used by many other writers such as Pycraft et al (2000), namely the fact that Crawford and Di Benedetto (2003) start their process with a strategic ideation or opportunity identification step. It is at this level that the strategic decisions of what, where and

how are taken and it is, therefore, almost inconceivable that it is not an intrinsic part of all the NPD process models.

As a result of this strategically important distinction, the generic model that will be used as the guideline for this discussion is the *Basic New Products (NDP) Process* as defined by Crawford and Di Benedetto (2003), because it appears to be the most complete approach. According to this model, the new product development process can be divided into the following five sequential phases, which will later be discussed in more detail:

Figure 2.2: Generic New Products Process (Crawford and Di Benedetto)



(Adapted from Crawford and Di Benedetto 2003)

Before taking a detailed look at the content and activities of each phase in the process, it is important to note that the phases as depicted above are merely a guideline. As Crawford and Di Benedetto (2003) clearly point out, “any manager using a generic system must cut and fit it to the situation at hand”. The structure

of the NPD is fluid and varies from company to company and product to product. This specifically relates to two areas in the NDP process. Firstly, it is important to note that even though the phases are depicted as a linear/sequential progression, this is not always the case in practice. In most instances, it is not uncommon for designers/developers to recycle or backtrack through the sequences. In some instances, they may even completely omit a specific phase or element

Many leading firms use a new products process that is commonly referred to as a stage gate approach. The term “gate” refers to the evaluation of tasks between the stages. It is at these “gates” that the hard “Go/Kill” decisions need to be made. Firms using a new products process of this kind have reported improvements in product teamwork, less rework, greater success rates with new products, earlier identification of failures, improved launch, and up to 30% shorter cycle times.

It is, however, important to note that sequential phases or stages in new product development are not usually typical. Usually, the activity is not sequential, but overlapping. Having neat sequential stages has a number of drawbacks, including causing queues and slowing time to market.

Secondly, it also important to point out that the respective phases often overlap. This can happen through circumstance or by design. Many modern companies make use of an interactive/concurrent design process, in which all of the different role players (designers, technicians, marketers etc.) have some involvement in the process from the initial evaluation of the concept through to the actual production and launch of the product. This approach has the advantage of decreasing the design *time-to-market*. (Pycraft et al 2000)

Finally, it must be remembered that in most cases, NPD is a complex task that involves virtually all company functions. The simultaneous attainment of design, cost (both product and project), quality, and schedule goals is only the beginning. Successful NPD also means achieving the “in-market goals” of volume, pricing and profitability. Achieving these goals generally requires that people skilled in a wide range of functional disciplines be assigned to a specific project. These people must be highly motivated and sufficiently resourceful so that they can

achieve the goals despite setbacks likely to occur during the project. In addition, these people must strive for highly coordinated work efforts, they must be able to access the necessary resources, and they must have the support of their home organisations and senior management.

2.2.1 Ideation/Opportunity Selection and Identification

As with all modern businesses processes NPD can also be divided into a strategic and functional component. The strategic component of NPD is found in this first phase of the NPD process. It is at this level that both the organisation and the NPD teams/groups take the strategic decisions that will guide their efforts.

At the organisational level, this is done by defining the core business of the organisation, by determining the marketing focus of the organisation and by determining physical and financial capabilities and limitations of the organisation. This is of extreme importance, because it ensures that the NPD is in line with the vision and capabilities of the organisation.

At the team or group level, this strategic phase charts the team/group's direction, and provides the team/group with concrete goals and objectives. (Crawford and Di Benedetto, 2003)

At the core of any strategic plan lies the reality of limited resources and competencies and the simple fact that no company can be all things to all people. Consequently, companies need to identify and focus on what will distinguish them in the market place.

In this regard, Crow (2001) has identified six basic product development strategic orientations that can be adopted:

Table 2.1

Time-to-Market	This involves an orientation to getting a product to market fastest. This is typical of companies involved with rapidly changing technology or products with rapidly changing fashion. Pursuit of this strategy will typically will lead to tradeoffs in optimising product performance, cost and reliability. Technology development must occur on an independent path from product development and technologies inserted on a "modular" basis, often with frequent product upgrades to make this strategy work.
Low Product Cost	This orientation is focused on developing the lowest cost or highest value product. This is typical of companies with commodity type products, products reaching a mature phase in their life cycle, or where there is consolidation or a shrinking market. This orientation typically will require additional time and development cost to optimise product cost and the manufacturing process.
Low Development Cost	This orientation focuses on minimizing development cost or developing products within a constrained budget. While this orientation is not as common as the other orientations, it occurs when companies are developing products under contract for other parties, where a company has severely constrained financial resources, or where a "stealth" development effort is being undertaken on a "shoestring". This orientation is somewhat compatible with time-to-market, but involves tradeoffs with product performance, innovation, cost and reliability.
Product Performance, Technology & Innovation	This orientation focuses on having the highest level of product performance, the highest level of functionality or functions and features, the latest technology or the highest level of product innovation. Companies in many industries or many products except commodity products can pursue this orientation. Pursuit of this strategy involves higher risks with newer technologies and accepts a trade-off of time and cost to pursue these objectives.
	This orientation focuses on assuring high levels of product quality,

Quality, Reliability, Robustness	reliability and robustness. This orientation is typical of industries requiring high quality because of the significant costs to correct a problem (e.g., recalls in the automotive or food processing industries), the need for high levels of reliability (e.g., aerospace products), or where there are significant safety issues (e.g., medical devices, pharmaceuticals, commercial aircraft, nuclear plants, etc.). This orientation requires added time and cost for planning, testing, analysis and regulatory approvals.
Service, Responsiveness & Flexibility	This orientation focuses on providing a high level of service, being very responsive to customer requirements as part of development, and maintaining flexibility to respond to new customers, new markets and new opportunities. This orientation requires additional resources (and their related costs) to provide this service and responsiveness.

(www.npd-solutions.com/strategy.html)

In lay terms, this stage ensures that the newly designed products meet the needs and abilities of the organisation. It may, for instance, not serve much purpose for the designers in a furniture manufacturing company to design pharmaceutical products. The new product that is designed may be of excellent quality, but it serves no purpose if it is not inline with the broader objectives and physical capacity of the organisation.

Well-designed individual products should ideally link into a complete product strategy. This eventually leads to an overall business strategy that guides the business to achieving its vision and guides the product development team as it makes day-to-day decisions concerning a particular development project. This phase in the NPD process is very similar in nature to the work of a stock market portfolio manager. Not only does it provide guidance in terms of defining the correct product strategy and selecting winning new-product projects, it also ensures that the correct balance is achieved amongst the different new and old products that form part of the company's portfolio (PDI Inc 2001).

According to Cooper (2001) there are four major advantages to adopting a strategic approach to product development as discussed above. They include maximising the value of the portfolio by ensuring that the total worth of the new-product projects in the pipeline yields maximum value to the corporation; achieving the right balance of projects between high-risk and low-risk, short term vs. long term, and genuine new products vs. product improvements and extensions; achieving a strategically aligned portfolio in which all the projects are on strategy, and where the spending breakdown mirrors the strategic priorities of the business and; resource balancing to ensure that the right number of projects are undertaken.

From the above, it should be clear that effective NPD can only occur when the newly introduced products support the overall business strategy of the company. A well articulated strategic vision and a strategy to achieve that vision provide product planners and product developers with direction on what products to pursue. This vision and strategy also provide guidance on product attributes.

In many organisations, this new product strategy is formalised in a Production Innovation Charter (PIC). The PIC usually provides information on the reasoning for the development of a specific strategy, the focus area of the research, the goals and objectives of the project, the special guidelines for the process (timing, degree of innovativeness, product integrity, etc.). (Crawford and Di Benedetto, 2003)

Despite the fact that product definition is a critical starting point in the development of any new product, this aspect of the NPD process is often neglected or there are a number of common shortcomings to the process of product definition in many companies. These include (www.npd-solutions.com/strategy.html):

- No defined product strategy or product plan

- Lack of formal requirements as a basis for initiating product development
- Product requirements are developed without true consumer input
- A marketing requirement specification that is completed late – after development is underway
- Engineering having a little or no involvement in development of MRS, thereby lacking a true understanding of requirements.
- An incomplete, ambiguous, or overly ambitious MRS
- Creeping elegance or a constantly evolving specification that requires increasing development scope and redesign iteration.

In a rush to achieve rapid time-to-market, shortcuts are often taken with the product definition phase. The result is a product that is off target or additional time spent with subsequent requirements definition and redesign iteration. To be successful, a comprehensive, well-defined, continuous process is needed. The starting point is a product plan that defines markets so that proper customer needs can be captured (www.npd-solutions.com/strategy.html).

An interesting aspect of this phase, as indicated above, is the fact that many writers do not include it in their five-phase process. Many models begin with the concept generation phase, without paying any attention to this very important strategic aspect of product development. It is for this particular reason that the inclusive model as identified by Crawford and Di Benedetto (2003) is used.

2.2.2 Concept Generation

Finding the best overall design always starts with the consideration of various possibilities and ideas. The more complex the problem the more concepts should be considered. It is during this stage that ideas should be captured, evaluated, mutated and reincarnated until the most acceptable solution is found. These ideas are then translated into concepts.

According to Pycraft et al (2000), a concept can be differentiated from an idea in that it addresses the three dimensions of innovation, namely form, technology and benefit. Concepts, unlike ideas, are clear statements that both encapsulate the idea, whilst simultaneously indicating the overall form (the overall shape of the product), function (the way in which the product operates) and benefits (the advantage that the product will bring to the customer) of the idea (Pycraft et al, 2000). Crawford and Di Benedetto (2003), provide more clarity in this regard, by pointing out that, in practice, a concept only requires two of the three dimensions of innovation, in order to be accepted for further analysis.

Ideas for new product concepts can come from a myriad of different sources, both inside and outside the organisation. These could include customers, competitors, employees and R&D departments. Broadly speaking though, these different sources can be divided into two main categories, namely ideas from others (external) and ideas generated internally (Problem-based or Analytical approaches).

With regards to both of these sources of concepts, market research should play a central role. Effective marketing research not only generates a steady stream of competitive intelligence, it also links the different product variables and removes uncertainty by providing management with answers to critical questions regarding customers, competitors, and the environment.

In short, market research provides answers to the following important questions:

- Who will purchase the product?
- Why will the consumer purchase your product or service?
- What do consumers buy?
- How do they buy?

- When do they buy?
- Where do they buy?

Recent NPD research has quantified and refined a number of tools to assist professionals in their efforts to develop new products. These tools include different forms of Stage-Gate theory, ideation, metrics and TQM techniques.

Additionally, academics, practitioners, and service providers frequently create new tools. NPD tools are general in nature and require a sizeable amount of fine adjustment to produce a consistent and desirable result for a company's needs. Research also indicates that a common theme among best in class companies is that they experiment with and adopt tools of both a technical and marketing nature more often and more quickly.

2.2.3 Concept/Project Evaluation

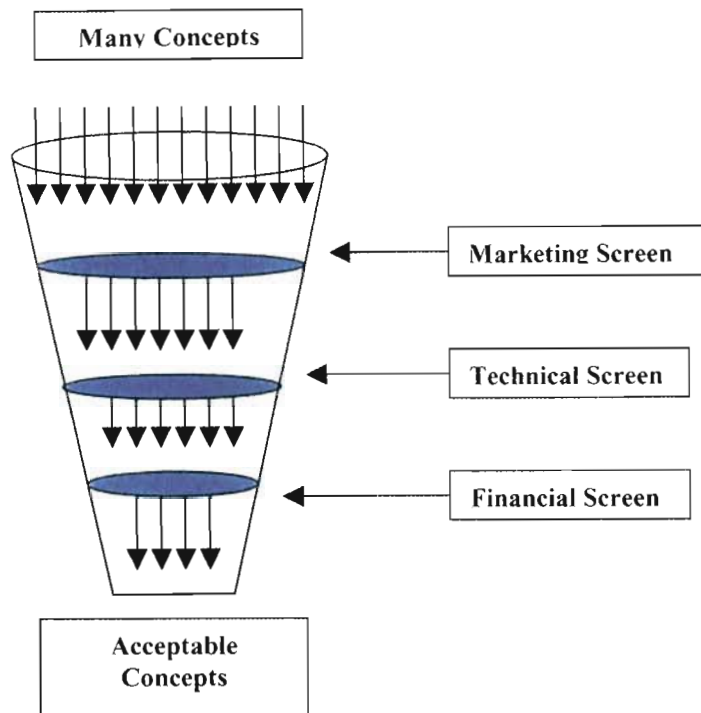
Before development work can begin on new ideas, they need to be evaluated, screened, and sorted. This activity, sometimes called screening or pre-technical evaluation, varies tremendously. Most firms do, however, follow a sequence, which starts with "entry screen" and ends with the "full screen". If the decision is taken to go ahead with the development of the concept, a *product protocol* is drawn up (Crawford and Di Benedetto, 2003).

Not all concepts that are generated will necessarily be capable of further development, and therefore organisations have to evaluate them to determine their feasibility, acceptability, and vulnerability/risk.

The exact nature and content of the different concept/project testing instruments that are used can vary considerably from company to company and industry to industry, but in general, there are three main areas of concern, namely marketing, technical and financial (*See Figure 2.3*).



Figure 2.3: Concept Screening



(Pycraft et al 2000: 149)

Each of the screens as shown in **Figure 2.3** is designed to address very specific types of concerns. The Marketing screen is designed to determine the acceptability of the new concept within the market context. This includes issues such as whether or not there is demand in the market for a specific concept, whether similar products already exist within a given market and whether there is sufficient differentiation. The importance of this screen therefore lies in ensuring that only those concepts that are relevant and acceptable to the market are further developed.

The technical screen, too a large extent, weighs the requirements of the concept against the abilities of the organisation. It is at this point that the company must rely on honest introspection in order to determine whether it has the available technical and human resources to produce a specific concept. In addition the company must determine whether such skills, knowledge and resources are available outside of the company so that they

can be imported if necessary. A concept is simply not worth anything if it cannot be produced.

Finally, the financial screen should answer the all important questions related to cost and profitability. By the end of this screen, the company should have answered all of the questions related to the capital investment required to develop the concept; the expected profit margin; the likely pay-back rate and; the expected operating costs of the concept.

The issues mentioned above are by no means exhaustive and they also do not cover the full range of issues and areas that should be evaluated and tested in this phase of the NPD process. They do, however, provide a good summary of the types of questions that need to be answered and issues that need to be addressed. As pointed out earlier, there are a myriad of different testing techniques that could be used to address the above issues, but for the purpose of this discussion it is sufficient to point out that this evaluation and testing phase is important and must be completed before the NPD process can continue.

This process usually ends with the drafting/development of a product protocol, which specifies what will be required from the technical and marketing functions during the development of the actual product. In other words, the protocol specifies what each department will have to deliver to the final product that the customer buys. Other names for the product protocol include product requirements, product definition and deliverables. (Crawford and Di Benedetto, 2003)

2.2.4 Development

Development is the key creative stage of the NPD process. It is at this point where the organisation has to take the necessary steps to fulfil the requirements/needs as presented in the product protocol. According to Crawford and Di Benedetto (2003), design in the modern context refers to “everything needed to market the product, including funding, distribution,

promotion and technical service” (the product package, engineering requirements and manufacturing requirements).

The development stage can be broadly divided into two segments. The first involves the technical development of the product and the second involves the development of the marketing strategy that will be used. Ideally, this should ideally be an integrative process, with information flowing continuously between the technical and marketing functions. This not only ensures improved time-to-market, it also ensures that there is a synergy between the technical and marketing specifications. This is particularly important in the design of product augmentations, such as packaging, customer service, technical service and warranty requirements.

In general, marketing activity is fairly limited during the beginning of the development process, but it becomes progressively more important and expanded as the development stage progresses. By the end of the development stage, the balance of activity usually shifts toward the marketing function.

The technical design of the product could involve numerous different steps and procedures, depending on the nature of the product. Crawford and Di Benedetto (2003) have summarised these steps as follows:

- Basic Research
- Product design and evaluation
- Release early prototypes
- Develop revised prototypes
- Prepare product specs
- Product design and cost forecasts
- Produce pilot product

As stated above, the number of actual steps used, as well as the time and money spent in each step, varies greatly, depending on the nature of the

product. For many highly technical or complex products the steps shown above could be divided into numerous additional steps.

An extremely important element of the development stage, which is often overlooked, is the development team or group. The successful development of any product depends to a large degree on the effective functioning of the team or group that is responsible for the actual development.

This refers to issues such as the composition of the team, the leadership of the team, the training of the team, the corporate culture within which the team is expected to function and the degree of autonomy that is given to the team. Product development is at worst impossible and at best highly problematic, unless an effective development team is established. It should also be kept in mind that development teams are not usually static. The exact nature and composition of development teams could, and in many cases should, change from project to project and product to product.

2.2.5 Launch

The launch phase of the NPD process begins when the management of organisation takes the decision to market a new product. This decision could be based on the information that is gathered during the previous four phases, or it could happen during one of the first four phases. This is basically the point at which the management commits itself towards the commercialisation of the idea, concept or product. In some cases, such as the residential property market, the launch often serves as both the commercialisation phase of the process as well as the market testing phase.

Once a decision has been taken to market a new product, a launch plan has to be developed. This plan covers all of the decisions that will have to be taken in order to successfully launch the product, including financial commitments, technical and human resource commitment, marketing strategies and production strategies and requirements. According to

Crawford and Di Benedetto (2003), the launch plan is built on five sets of decisions. They are:

- *Strategic givens:* The development team must identify and accept the limitations that exist as a result of the organisation's existing operations. It would serve no purpose to design a plan which cannot be implemented because of limitations that exist within the firm
- *Guideline Decisions:* These are the decisions about the product that were taken at the beginning of the NPD process. These are usually contained in the PIC that is drafted during the initial stage of the NPD process. It is usually not likely that these decisions will be changed at a later stage, because they have a direct bearing on content of the final product.
- *Strategic Platform Decisions:* These are the strategic decisions that set the stage for action.
- *Strategic Driving Decisions:* These are the strategic decisions that drive the eventual tactics.
- *Tactical Decisions:* These decisions can also be referred to as the functional decisions. At this point, the marketers have to develop a functional marketing strategy that will allow them to achieve the goals and objectives as identified at the Strategic Marketing level. The Strategic platform decisions and strategic driving decisions, sketch the broad outline of where the company wants to go with the product and how it wants to get there, but the tactical decision provide a detailed plan of action based on the specific marketing mix for the product.

2.3 Critical Success Factors in New Product Development

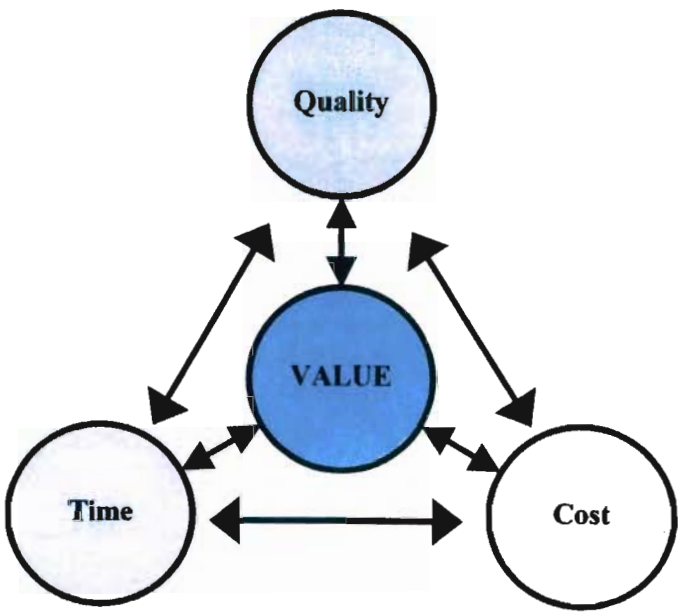
Apart from identifying the steps in the NPD process, it is also important to realise that NPD success is not only dependent on the adoption of an efficient and

effective process. There are a number of additional factors and criteria that also have to be considered in order for NPD to succeed. These factors are often referred to as the critical success factors.

In trying to determine the critical success factors in new product development, it is once again important to remember that the core reason for new product development is for an organisation to generate new ideas, concepts and products which can then be translated into a benefit or value to others for which they are willing to pay.

As Cooper and Di Benedetto (2003) plainly show (*Figure 2.4*) value, as mentioned above, is the product of three unique inputs, namely quality, time and cost. In order, therefore, for a product to have value, it must provide the right quality at the right time and at the right cost.

Figure 2.4: The Conflicting Masters of New Products Management



(Crawford and Di Benedetto 2003:15)

The secret to successful NPD, consequently, depends on an organisation's ability to optimise the relationship between each of these three inputs. The difficulty obviously lies in the fact that there is no single correct recipe for NPD success.

On the contrary, each product and each project will most probably have its own unique combination of the three inputs.

Regrettably, as with most elements of NPD, there is no simple and exact list of critical success factors that can merely be copied from one organisation to another and one situation to another. Once again the best we can hope for, due to the highly complex nature of NPD, is to identify those generic factors that will most probably be present in most NPD situations. One way to do this is, is to take a closer look at the different levels (Strategic and Functional) of the process, as discussed above, in order to identify those specific factors that play a pivotal role in each level.

2.3.1 Strategic Factors vs. Functional Factors

This approach is supported by Cooper (2001) who suggests that, there are two prerequisites for a company to successfully develop new products. Firstly, they have to pick the correct new projects to get involved in (Strategic), and secondly, they have to do those projects correctly – they must ensure that the inputs are combined in such a way that they deliver optimal value (Functional).

2.3.1.1 Critical Success Factors - Strategic

Foreman (1998), in her article on the role of new product development and competitive performance in the marketplace identifies two fundamental strategies, which she considers to be the foundations of marketing to deliver value to customers, namely, a commitment to customer orientation, and innovation.

Foreman (1998) suggests that managers need to balance enthusiasm for innovation with thorough processes in order to reduce the potential for product failure. Indeed, she suggests that organisations should look beyond the tactical focus on the product and emphasise the strategic and organisational issues that help to create a culture for innovation.

This view is supported and expanded on by Schilling & Hill (1998), who maintain that successful firms are those that articulate their strategic intent and map their R&D portfolio to find a fit between their new product development goals, their current resources and competencies, and the requirements of their customers and suppliers.

According to Khazanet (1997), product development planning is often based on managerial intuition and experience and that all too often, time saving and cost-effective solutions are simply overlooked. He emphasises that planning, and the balancing of product development phases are becoming more valuable as developers try to keep up with new technology, stay ahead of the competition, retain customers and attract new customers.

Lester (1998) merges the ideas of the previous authors and provides the following four critical success factors on which the strategic success of new product development hinges, namely senior management commitment; organisational structure and processes that support the venture; venture teams with appropriate staffing and resources, able to communicate effectively with management and markets; and effective project management aimed at reducing uncertainties as early as possible.

Cooper & Kleinschmidt (1995) expand on this list by supporting an approach which describes the management of new product development as a process of separating the winners from the losers. They suggest that benchmarking is helpful for identifying the critical success factors that set the most successful firms apart from their competitors. Consequently, they add the following strategic factors to the list provided above:

- The organisation of the new product development programme
- The firm's entrepreneurial culture and climate for innovation

- A clear, well-communicated new product strategy
- Senior management accountability
- Strategic focus and synergy

2.3.1.2 Critical Success Factors - Functional

- *Value/Customer orientation and service quality*

Foreman (1998) regards customer orientation as one of two key fundamentals for delivering value to customers and as a key success factor to NPD. Schilling & Hill (1998) also regard maximising the fit with customer needs as one of the two critical objectives that must be met in product development. Cermak, File & Prince (1994) argue that customer participation in the specification and delivery of the product represents an important point of potential leverage for an organisation, as the nature and intensity of customer participation is within their ability to manage. Their study results confirm that participation is strongly associated with repurchase and referrals. Martin & Horne (1995) find significant differences in the innovation level of success within the same firm. Inputs from customer contact personnel are considered as superior to those of non-contact personnel.

- *Cost*

According to www.synthx.com, there are three main factors in the NPD process that effect cost, namely time, complexity of the product and knowledge of the product. With regards to time, the old adage of “time is money” almost always rings true and this is also true within the NPD environment. In most instances, there is a premium payable for shortening the development time of a product. The secret lies in carefully weighing the negatives against the positives and deciding whether the development premium is worth more or less than the ultimate premium that will be paid for the product.

In terms of the complexity of the product, it is pointed out that, as a general rule, there is a direct correlation between the complexity of a product and its cost. In other words the more complex the product or its components are the more it will cost to develop.

Finally, knowledge of the product plays a significant role in either increasing/decreasing the development costs or development time for a product. In this regard, knowledge of the product refers to a wide range of issues that include everything from correctly understanding the needs of the customers to understanding the resources that will be required to develop and manufacture the product.

- *Time*

Minimising time to market is one of the two most critical product development objectives defined by Schilling & Hill (1998). In the race to get to market first, Towner (1994) suggests that old product development models must be discarded. Sequential development and hand-over-the-wall practices are too slow. Time must be cut out of the process. An accelerated product development programme must be established to streamline and undertake activities in parallel, to launch the product simultaneously in world markets, and to release enhanced supporting services and business processes after launch.

Adler, Mandelbaum, Nguyen & Schwerer (1996) suggest that managers think of product development as a production process in which projects move through the knowledge-work equivalent of a job shop. According to the authors, companies that have applied process management to product development have made three important discoveries. First, projects get done faster if the organisation takes on fewer at a time. Second, investments to

relieve bottlenecks yield large time-to-market benefits and third, standardisation does not kill creativity. The authors maintain that companies that have embraced this approach have cut average development times by between 30% and 50%.

Roche (1999) reports that sequential engineering for product development has been largely replaced by concurrent engineering, in which teams of engineers work simultaneously to design the various components of a product. With concurrent engineering, companies can get products to market much faster than they could before. However, the disadvantage of concurrent engineering is that it introduces considerable uncertainty into the development process. In observing concurrent engineering, researchers found that engineers intuitively use two different strategies for communicating information, namely, an iterative strategy and a set-based strategy.

While innovation is considered as risky and complex, involving major resource investments and a high rate of failure, studies by De Brentani (1995) show that managers reduce the complexity surrounding individual decisions by viewing these in a gestalt or situation-specific mode. Hence, knowing the types of new service development situations, or scenarios that typically lead to success and failure, is an important requisite for making superior decisions.

- *Quality*

Quality issues feature twice in the Ten Commandments for service development by Terrill (1992) and can indeed be regarded as crucial to the process. Quality is also the one single element that is found in almost all the checklists on product development success factors. Quality in this instance is not only limited to the quality of the eventual product, but also to the quality of the process that used to develop the product. These elements of quality should be seen

as a package, because the overall success of NPD is dependent on quality in both areas.

2.3.2 Financial Success vs. Project Success

An interesting approach for evaluating the critical success factors for successful NPD and which also serves as a useful summary of the above discussion is outlined by Vähäkylä in his 2001 study on the success criteria in NPD projects. The approach adopted by Vähäkylä is based on an in depth study of the historical best practices in NPD projects. His approach specifically concentrates on identifying those common factors that have contributed to the historical success of the NPD processes within different companies.

In an attempt to provide a coherent and practical guide for future use, Vähäkylä (2001) divides the critical factors for NPD success into two distinct categories. Firstly, financial success, which focuses on those factors that are needed to ensure the financial success and feasibility of the newly developed product/service, and secondly project success which focuses on the actual NPD project process.

2.3.2.1 Financial Success

With regards to the financial success of the NPD process, Vähäkylä (2001) identifies three critical success factors namely:

- *Project success*

Project success will be discussed in detail in the next section.

- *Product Effectiveness*

In this regard, product effectiveness refers to the competitive advantage that a product has. The competitive advantage could

take many forms including low-cost, unique benefits and strategic fit with the core competencies of the organisation. From this description, it is clear to see how many of the elements identified by other writers have been incorporated into this single success factor. In order to develop an effective product that meets the criteria as mentioned above, there has to be strong strategic leadership within the organisation, there has to be strong management commitment to the product and the process, there has to be effective project management, which results in shorter development times, and finally the firm and the development team have to have a strong market orientation in order to ensure that the newly developed product meets the demands of the market and the customer.

- *Market conditions*

Besides the product effectiveness, the market conditions and the target market also play an important role in determining the financial success of the developed product. While product effectiveness concentrates on ensuring that a newly developed product is superior, in some way, to other products, this advantage means little if the target market is chosen incorrectly or if there are negative factors within the market that mitigate against the success of the product, despite its apparent advantages. In other words, the financial success of any new product depends directly on the effectiveness and efficiency of the NPD process, on the ability of the organisation to develop products that are relevant and distinguishable, and finally on the organisations' ability to correctly identify target markets, as well as positive and negative trends within a given market at any given time.

2.3.2.2 Project Success

With regards to the project success of the NPD process, Vähäkylä (2001) identifies five critical success factors namely:

- *The Development Process*

According to Vähäkylä (2001), to successfully implement NPD projects, organisations must adopt a well-established and defined NPD process, which is accompanied by thorough preparation (market research, technical assessments etc), early definition of the product, strong management support, clear lines of communication, strong project leadership and overall emphasis on process and product quality. Additionally, it is also important that all the members of the development team have a clear understanding of the importance and relevance of the three elements of product development, namely time, cost, quality and value, as well as their relationship with each other in general and within the specific NPD project in particular.

- *The Project Teams*

Vähäkylä (2001) describes the Project Team as the heart of the NPD process, because they are actually the people who have to transform vague ideas, concepts and product specifications into complete products.

In recent years, the use of cross-functional project teams has become very popular, because the functional diversity of the teams increases the overall knowledge and skills base of the team thereby improving the quality of the process and reducing the development time of projects.

In order to ensure the success of these teams, there are numerous factors that must be kept in mind, such as the exact composition of

the team to ensure optimal synergies, the experience and tenure of specific individuals within a team, and the management and relationship hierarchies within the teams.

- *Senior Management Support*

Senior management support is absolutely essential for successful NPD. Senior managers support the NPD process in two ways. Firstly, senior management should provide the necessary resources for project success, and secondly senior management should provide the strategic vision and guidance on which the NPD process is based (Vähäkylä 2001).

- *Communication*

Communication is commonly seen as one of the key elements in any form of project management, including NPD (Vähäkylä 2001). Through successful internal and external communication, organisations can ensure that information is timeously and appropriately generated, collected, disseminated and stored, thereby contributing to both the effectiveness and efficiency of the NPD process.

In this regard it is important to stress the importance of both internal and external communication. Internal communication refers to all sharing of information within the project team, whilst external communication refers to all interactions with parties outside the project team. Although the importance of internal communication is self evident, especially in cross-functional teams that do not necessarily see each other on a regular basis, many organisations are less concerned with ensuring effective external communications, which cause significant problems for any NPD project. The purpose of external communication within the NPD

process is firstly, gather information from the broader organisation and to relay it to the team, and secondly to disseminate information about the project to relevant persons within the organisation, in particular senior management, in order to ensure that the necessary resources are forthcoming (Vähäkylä 2001).

- *Learning from Past Experiences*

According to Vähäkylä (2001), one of the major challenges in the management of NPD projects is using an organisation's accumulated knowledge in a given project. By utilising the existing knowledge within an organisation, the project team not only saves time by not "reinventing the wheel", it also contributes to the organisation's pool of knowledge by exposing team members to existing knowledge and by contributing new experiences and information to that which already exists.

2.3.3 Conclusion

From the discussion above, it can be safely concluded that there is no single critical factor that ensures NPD success. In reality there are numerous factors that may differ in importance from organisation to organisation. Concentrating on just a single factor cannot, therefore, guarantee the successful implementation of a given project. Every factor has to be optimised in order to gain superior project and financial success.

Another important observation that can be made is that the success factors often overlap. For example, having an efficient development process reduces the time to market, which in turn increases the market advantage of the product. Conversely, a weak link in one area can have a detrimental effect on all of the other areas.

The evaluation model as suggested by Vähäkylä provides a workable framework for analysing these different criteria for NPD success, exactly

because it is broad in nature. The two categories of criteria that he has identified, namely financial and project success are merely guidelines rather than strictly defined criteria. The important element in his model is, however, the fact that most of the elements as identified by other writers can find a place within his two broad categories. The model is consequently pliable and allows for adaptation and interpretation depending on the specific organisation or process that is being analysed.

The next chapter will move away from the purely theoretical discussion of NPD by reviewing the NPD process in an actual company. This discussion will then eventually be combined with the theoretical information contained in this chapter when the theory and models are used to provide an objective analysis of the NPD process in the case under review.

CHAPTER THREE

3.1 Introduction (What is *SafDev*?)

SafDev (Pty) Ltd was launched in 1998, specifically to address the housing needs of the previously disadvantaged communities in South Africa. Since then, *SafDev* has established itself as one of the leading Low Cost and Affordable Housing developers in the country, having delivered in excess of 12 000 housing units and some 14 000 serviced sites. During most of this period, *SafDev* focused exclusively on the Low Cost and Affordable Housing sectors, but since 2001, *SafDev* has also become involved in a number of highly successful Cluster and Sectional Title developments aimed at the upper end of the residential property market.

3.2 Mission Statement

“To identify and optimise the inherent value in capital assets”

The Mission statement is a summary of the five elements of *SafDev*'s current business namely:

- Residential Property Development
- Infrastructure Finance and Construction
- Packaging and Selling of Development Projects
- Property Speculation
- Development Project Management

SafDev's entire business model is based on identifying under valued and under utilised capital assets, particularly in the residential property sector. These capital assets are then developed to achieve the highest possible return for the company. In this regard, *SafDev* distinguishes itself from its competitors through its ability to identify and optimise the full spectrum of available options that can be used to add value to a particular asset.

3.3 Corporate Vision

The corporate strategy at *SafDev* is based on the following Vision:

“To become the leading developer of high quality, high visibility and high return properties in Gauteng”

This vision as stated above encapsulates the following important elements:

Firstly, *SafDev* is endeavouring to shift the focus of the company from its low cost housing roots, toward higher value, higher margin projects including Cluster Developments, Sectional Title developments, Infrastructure Developments and Affordable Housing.

Secondly, senior management has decided to decrease the number of projects in which the company is involved, by increasing the value of the projects in which it is involved.

Finally, the decision has also been taken to improve the brand equity of the *SafDev* name, by developing and sustaining a reputation as the leading developer of high quality, high density, and high return residential properties. This point is of particular importance; because it highlights the importance that *SafDev* places on providing its clients with the highest possible returns on their property investments.

3.4 Guiding Principles of the Corporate Strategic Plan (*Financial*)

The financial management approach that has been adopted by *SafDev* is based on limiting company overheads and limiting the financial risk of the company. In attempting to limit its overheads, the company has adopted a two-pronged approach. Firstly, the company concentrates on maximizing existing company resources and abilities and secondly, the company makes use of contract employees whenever specific skills or knowledge are required that do not already exist in the company.

In terms of limiting its financial risks, the company relies on its market intelligence capabilities to ensure that it is always abreast of any changes in the market. In particular, structures and systems have been put in place to identify and exploit the opportunities created by interest rate fluctuations and other market variables. For example, the property development market is constantly monitored to identify any signs of over-heating or any other fluctuations in the business cycle

In addition, the risk of financial overexposure is further limited through the maintenance of strict financial discipline. Specific predetermined cash flow and ROCE (Return on Capital Employed) targets are used to guide all financial and investment decisions and wherever possible, the company enters into strategic Joint ventures or partnerships that are specifically aimed at minimizing the risk of the company.

3.5 Guiding Principles of the Corporate Strategic Plan (*Strategic*)

Property development in its broadest sense has been identified as the strategic focus of the company. The company has, however, placed limits on its focus area by deciding to concentrate all of its activities within the borders of South Africa, in particular Gauteng province. In addition, the company has taken a strategic decision not to get involved in subsidised housing and/or municipal tenders. This decision was purely based on the bureaucratic nature of these types of developments, as well as the potential political risks that can be attracted.

In terms of its *modus operandi*, the company has chosen to adopt a corporate structure that is small and flexible, in order to react more quickly to changes in the market. As a result, ***SafDev*** has become well known in the industry for its opportunistic abilities. To overcome any shortages in skills and knowledge that result from this small corporate structure, the company appoints contractors when needed. In general, ***SafDev*** maintains the in-house ability to identify and structure high quality, high-profit developments, whilst using contracted professionals to deal with the technical aspects of the developments.

3.6 The *SafDev* Business Model

3.6.1 General Modus Operandi

If possible, *SafDev* senior management endeavours to identify high value land and/or properties that are currently in distress. This usually refers to properties that have either been foreclosed on by the commercial banks or existing developments that have run into financial trouble for some reason. If possible, the properties will be situated in the Northern suburbs of Johannesburg, in particular areas such as Sharonlea, Northgate, Randpark Ridge, Northriding, Douglasdale, Bryanston and Little Falls. Due to the opportunist nature of the *SafDev* approach to business, exceptions to the above rule will be considered if the property presents a particularly good opportunity. In this regard it can perhaps be mentioned that *SafDev* has in the past involved itself in projects as far a field as Nelspruit. In general, however, the company does not do business outside of the Gauteng provincial borders.

SafDev, through its strong reputation and market network, usually finds itself in the fortunate position of receiving numerous unsolicited deals on an almost daily basis. These deals are then scrutinised by the senior management team. Once the most attractive prospects have been identified and thoroughly scrutinised, *SafDev* approaches the property holders and negotiates an agreement through which the property can be secured. This can take one of several forms including an Offer to Purchase, a Land Availability Agreement, a Delayed Sale Agreement or an Option Agreement.

Once the most attractive property has been identified and preliminarily secured, *SafDev* appoints a Project Manager (PM) and a reputable professional team to oversee the NPD process and potentially the successful completion of the entire project. In some cases *SafDev* enters into Joint Ventures (JVs) with the various project teams, this is done in

order to provide incentives to the people behind the success of the project. This approach, however, differs from project to project.

Typically the project team comprises the following persons;

- The PM manager who co-ordinates the entire project;
- A well placed marketing team / real estate agent who understands the dynamics of the area into which they are marketing;
- Consulting and contracting engineers;
- Architects;
- Town planners;
- Land surveyors; and
- A reputable NHBRC registered builder.

SafDev, however, remains responsible for the successful turnkey completion of the project.

3.6.2 Financial and Risk Considerations

Once a property has been identified and tied up, the initial funds required to complete the viability and feasibility stages of the project are committed and paid by *SafDev*. These funds are allocated towards marketing and research costs. As soon as the project has achieved the predetermined risk mitigating milestones, *SafDev* looks to its financiers to provide the necessary development finance. It should be noted that most projects have more than enough equity in them to justify the capital advance on a stand-alone basis.

SafDev as a business earns its margin on the differential between the initial purchase price paid, plus any costs to upgrade or service, and the final selling price.

3.6.3 Mitigation of Capital Risk

In order to limit or mitigate capital risk, *SafDev* has adopted an approach which recognizes the importance of spreading risk. This is achieved in many ways including the appointment of external contractors on a pay as you go basis in which they share in the development risk of a project. If a project proceeds and succeeds, the professionals share in the profit, but if a project does not go ahead, they carry a portion of the risk.

In addition, *SafDev* has adopted an approach through which capital expenditure, including the purchase of land or the installation of infrastructure is only undertaken when all the required risk mitigation milestones have been achieved and success is imminent. This specifically refers to achieving the necessary pre-sale targets and ensuring that all of the necessary approvals for township establishment and construction have been obtained.

In terms of lower the risk of development finance, *SafDev* has adopted an approach which is based on ensuring that all of their properties are either lightly geared or unencumbered, thereby offering over collateralisation and in ensuring that the duration of any finance facilities is kept to a minimum. This is once again achieved by requiring external contractors to carry some of the financial risk, instead of relying solely on bank finance.

The above approach ensures that costs are kept to a minimum and only paid on success of a project. The effect of the model is that earnings are enhanced and costs reduced, leading to risk reduction.

3.6.4 Structuring of Project Finance

Each project is housed in a separate company; which company's assets include shareholders loan accounts, the property and/or the rights thereto. The only liability held by the company is the finance provided by the financier.

Generally, the financier is offered a cession of all share and loan accounts in the particular project company, as well as a signed company transfer form, which will obviate the need to register a bond. The aforementioned security enables the financier to take over all the business assets in the event of default. The finance for each project is usually required for a maximum period of 12 months, but this period might be longer depending on the nature and size of the project. In most cases, the shareholders in each of the development companies are requested by the financial institutions to sign unlimited surety, which unfortunately negates many of the advantages of using separate companies for each development.

SafDev manages the project cash flows and provides the financier with a monthly management account that details; expected sales, actual sales, cash flow status and transfers that have taken place. *SafDev* only draws out profits after the financier has been repaid in full. The financier normally has access to all project documentation.

3.7 The New Product Development Process at *SafDev*

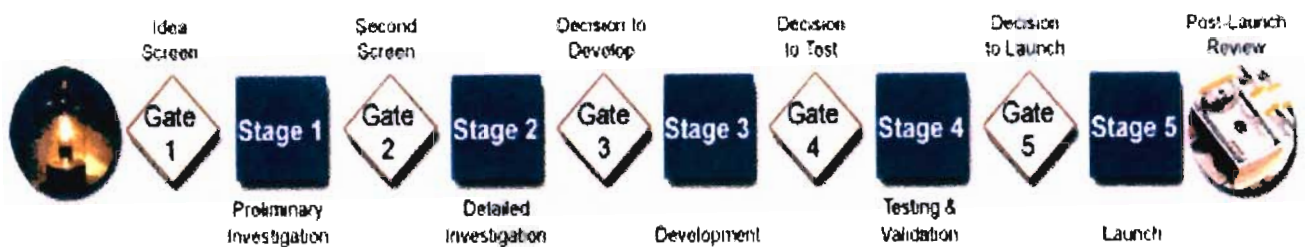
SafDev has adopted a Stage-Gate process that incorporates all of the elements/phases of a standard NDP process into a well-structured and well-defined staged process. *SafDev* views the Stage-Gate process as an operational roadmap for driving new products. It serves as a template for turning ideas into profitable business.

3.7.1 What is a Stage-Gate Process?

As shown below, the Stage-Gate approach to product development is characterized by a sequential decision structure, which has its roots in the “hierarchical” approach to engineering design; however it also has application for the development of services as well. The product development process begins by determining the product’s concept (which includes the target market, architecture, technology base) and then focuses

on the particular, detailed activities needed to execute it. The design of the process is both explicit and systematic: the product is defined, designed, transferred to operations, and launched. Activities are grouped into “stages” that are punctuated by ‘gates’, which typically correspond to senior management oversight. The decisions made at one stage are fixed, to be analysed, approved, or modified if necessary during these screening periods, before activities in the next stage are undertaken.

Figure 3.1 Model of the Stage Gate Process



(Stage-Gate Inc)

The Stage-Gate model enables complex interdependent tasks to be well specified and executed; it can be well managed and controlled provided that strong team leadership and effective cross-functional problem-solving procedures are in place. Moreover, the approach is fully compatible with simultaneous engineering (i.e. the simultaneous sharing of tasks by different functional groups). Thus, the Stage-Gate model does not imply that one function passes a set of tasks to another function; cross-functional teams and other integrative mechanisms can well coexist with a sequential process such as the Stage-Gate model. These integrative mechanisms, however, typically exist within the definition of a “stage”.

As shown above, NPD begins with an idea and ends with the successful launch of a new product. The steps between these points can be viewed as a dynamic process. The Stage-Gate process divides this process into a series of activities (stages) and decision points (gates).

Stages are where the action occurs. The players on the team undertake key tasks to gather information needed to advance the project to the next gate or decision point. It is, however, critical to note that the stages are cross-functional. There is no single market research or engineering stage. Rather, each stage contains a set of well-defined concurrent activities, incorporating industry best practice. Activities during each stage are executed in parallel to enhance speed to market. This is further enhanced by the use of cross-functional teams all working towards the same goals.

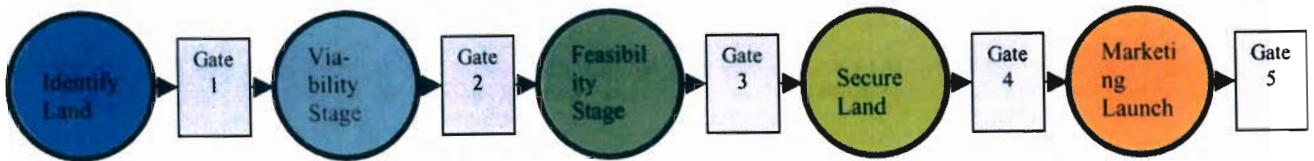
To manage and minimise risk, the activities in a certain stage are designed to gather information – technical, market, financial, operations etc. – in order to drive down the technical and business risks. In general, each stage involves greater financial commitments than the preceding one, so that the game plan is based on incremental commitments. As uncertainties increase, expenditures are allowed to rise and risk is managed/minimized (Product Development Institute (PDI) Inc 2003). The Stage-Gate process has a lot of appeal to management, because it restricts investment in the stage until management is comfortable with the outcome of the current stage.

Preceding each stage is a decision point or gate that serves as a Go/Kill and prioritization decision point. Gates provide the funnels where mediocre projects are culled out and resources are allocated to the best projects. Generally, the gates are designed to deal with three quality issues: quality of execution; business rationale; and the quality of the action (PDI Inc 2003). The gates also act as “quality control” checkpoints which evaluate among other things:

- Have the deliverables been executed in a quality fashion
- Is the project attractive from an economic and business standpoint
- Is the information sufficient to make a decision
- Is the action plan and request for resources sound

3.7.2 The *SafDev* Stage-Gate Process

Figure 3.2: Model of the SafDev Stage-Gate Process



3.7.2.1 Identify land

The identification of land for development takes place at two different yet related levels. Firstly, at a strategic level, the company management takes a decision on the type of development that it intends getting involved in as well as the geographic area/s in which it wants to operate. In the case of *SafDev*, a strategic decision has been taken that it will generally limit its operations to Gauteng province in general and the North Eastern suburbs of Johannesburg in particular.

Once the guidelines in this regard have been set, a number of avenues are used to identify and acquire specific pieces of property within the targeted geographical areas. These include making use of estate agents in the respective areas, assembling several small individual plots into a single large plot, identifying suitable sites for development and personally approaching the owners, as well as offering substantial finders fees/commissions to members of the public who bring viable properties to their attention.

3.7.2.2 Viability/Scoping Stage

The purpose of the viability stage of the process is to provide the management of the company with a relatively quick and inexpensive assessment of the technical merits of the project and its

investigation of three critical aspects, namely cost, timing and quality. Each of these aspects by itself and in conjunction with one or both of the others can/will play a direct role in the eventual success of the project and it is therefore of critical importance that all three of these elements are kept in mind and given equal attention during the viability phase.

From a property development point of view, the following issues are the most important elements that need to be addressed during the viability stage:

- *Single Developer or Joint Venture Project*

In this regard, the only consideration is cost, with the only justification for a joint venture being to minimize the company's risk. These JVs can take several forms, including:

- ❖ Developer/Developer
- ❖ Developer/Land Owner
- ❖ Developer/Main Building Contractor
- ❖ Developer/Local Authority
- ❖ Developer/Financial Institution

Each of these relationships, in its own way, can assist in addressing the three critical criteria of viability. For example, a JV with a landowner could reduce costs, because the landowner brings the land into the JV reducing the upfront outlay; or a JV with a local authority could assist in assuring that the necessary council approvals are received on time; or finally, a JV with the building contractor could be used to ensure that attention is given to the quality of the project.

The merits of these different forms of Joint Venture are, however, evaluated in terms of the company's particular needs at a particular

time. In general, *SafDev* has adopted an approach to development that is aimed at mitigating/deflecting risk as far as possible. For this reason, the possibility of joint venture partnerships on a project-by-project basis are always investigated thoroughly as part of the initial viability investigations.

- *Legal/Technical Status of the Land*

This part of the viability generally consists of two separate yet related activities, namely:

- ❖ The Land/Legal Investigation:

This investigation assesses whether from a legal point of view the land can be developed, by establishing ownership, jurisdiction and any legal constraints in the township establishment process. It is of extreme importance for an efficient township establishment process that a detailed land/legal report is available so that any potential problems or constraints can be identified at an early stage.

In terms of determining whether a specific property can be developed, it is important for the developer to determine whether the land is raw agricultural land or whether a previous township application has been submitted. This is important because it could add value to the property if the process has been completed and it could potentially save considerable time and money. If a township application has been submitted, it is important to determine the exact nature of the current Zoning of the property. This would include the prescribed Floor Area Ratio (FAR), the amount of Coverage, the Height restrictions, the Densities and the Building Lines. This information is obviously important, because the zoning of the property has to match the type of development that is envisioned on the

property. If the zoning does not meet the requirements of the proposed development, it becomes necessary to find out whether the responsible local council will approve an amended zoning that is in line with the proposed development.

Additionally, it is important to determine whether an Environmental Impact Assessment has been done or whether an application for exemption has been submitted and approved. All property development in South Africa has to be approved by the Department of Environmental Affairs and as such it is of extreme importance that the rules and regulations regarding environmental matters be followed exactly;

Simply determining whether a specific property can be developed or not, is however not enough. In addition, the developer must determine whether there are any legal constraints that could hinder the process. In this regard, there are a number of issues that need to be clarified:

Firstly, it is important to confirm the exact property description and credentials of the registered owner of the property. This serves to ensure that the correct property is being investigated and that the person being dealt with is in fact the rightful owner.

Secondly, a copy of the Title Deed over the property should be obtained to determine whether there are any restrictive title deed conditions that will impact on township establishment in addition, the developer should also obtain a copy of the Surveyor General Diagram of the property in order to establish if and where any servitudes might lie.

Thirdly, it is important to establish whether there are any issues/problems that could limit the seller's ability to dispose of

the property. The most important potential problem areas include bonds or mortgages over the property, existing leases on the property, existing or potential land restitution claims, and existing or future expropriations. An additional very important aspect in this regard is to establish whether rates and taxes clearances are available. This is important, because the transfer of property cannot take place until the rates and taxes clearances have been issued. Unfortunately, most Councils are experiencing tremendous delays in issuing these clearances and this could have a direct impact on the timing of a given project.

Fourthly, the developer must identify all those aspects that could limit the use of the property. In particular it must be established whether there any Mineral rights registered over the property or servitudes registered over the property that could negatively impact on the use of the property.

Finally, it is extremely important to determine who has Jurisdictional authority over the property in the event that any legal proceedings regarding the property should be required.

❖ The Physical Land Investigation

In terms of this investigation, the developer is interested in the physical features of the land such as the geology and how it impacts on excavation, the topography, the flood lines, the availability of and access to bulk services and the general site features that could affect the proposed development (rock formations, hydrology etc). Most importantly, this assessment of the physical features of the land must include a preliminary geotechnical report and a field investigation by a competent civil/geotechnical engineer.

In addition to the technical report, the surrounding area will also be evaluated to determine the non-technical factors such as the availability of basic amenities (schools, medical, and entertainment); the prevalence of squatters in the area; and the potential impact of future and existing developments in the area.

❖ Financial Investigation

The purpose of the financial investigation is simply to determine the full extent of the costs related to the development of the property and also to determine to what extent these costs might influence the financial feasibility of the project. The nature of the possible costs can vary greatly from project to project, because there are so many factors that could potentially influence cost. Some of the most important cost contributors that could affect the cost of the project, include the level of the development contributions that need to be paid; the potential holding costs if development is delayed; the level of extraordinary expenses that might be incurred to overcome special technical problems on the property; the potential security costs that need to be covered; the level of income that the property currently provides; and the possibility of a JV.

❖ Marketing/Sales Investigation

The marketing sales investigation is a preliminary investigation which is aimed at determining whether or not there is a demand for residential development in a specific area, and at addressing the four elements of the marketing mix, namely price, place, product and promotion.

At the conclusion of this investigation, therefore, the developer should be in a position to clearly identify whether or not there is a demand for residential development in the area and what exactly the nature of that demand is. In addition the developer should have a clear understanding of the external environment in the area. This includes issues such as the availability of public transport, leisure facilities, employment opportunities and shopping facilities.

3.7.2.3 The Feasibility/Building the Business Case Stage

During the feasibility stage of product development, a company needs to gather information and perform analysis to assess the feasibility or develop the business case for a new product. The fact that investment in product development and the cost of design changes increase rapidly after the feasibility stage emphasises the importance of doing your homework well. In this regard, there are three questions that need to be evaluated as a basis to proceed beyond the feasibility stage: (www.npd-solutions.com/feasibility.html)

- *Is It Real?*

At this point, the developer must assure himself that a market exists and that there is a true need in the marketplace. In addition the developer must identify the exact segment of the market that can be targeted and determine whether this segment is large enough to support the financial goals of the project. For the most part, these questions will already have been addressed during the sales/marketing investigation that was undertaken in the viability stage.

- *Can You Win?*

This question is primarily aimed at determining whether the newly developed product will provide sufficient competitive advantage to be successful in the market. This requires that the developer analyse the competitive environment, in order to determine the competitive strengths and weaknesses of the proposed product. Secondly, the developer must determine the basis for competition. In other words the developer must decide whether the product compete based on price, performance, innovative features, service, reliability, or time-to-market. Finally, the developer should confirm that the product falls within the overall strategic approach adopted by the company. This is simply a case of ensuring that the company does not lose the war in order to win a single product battle.

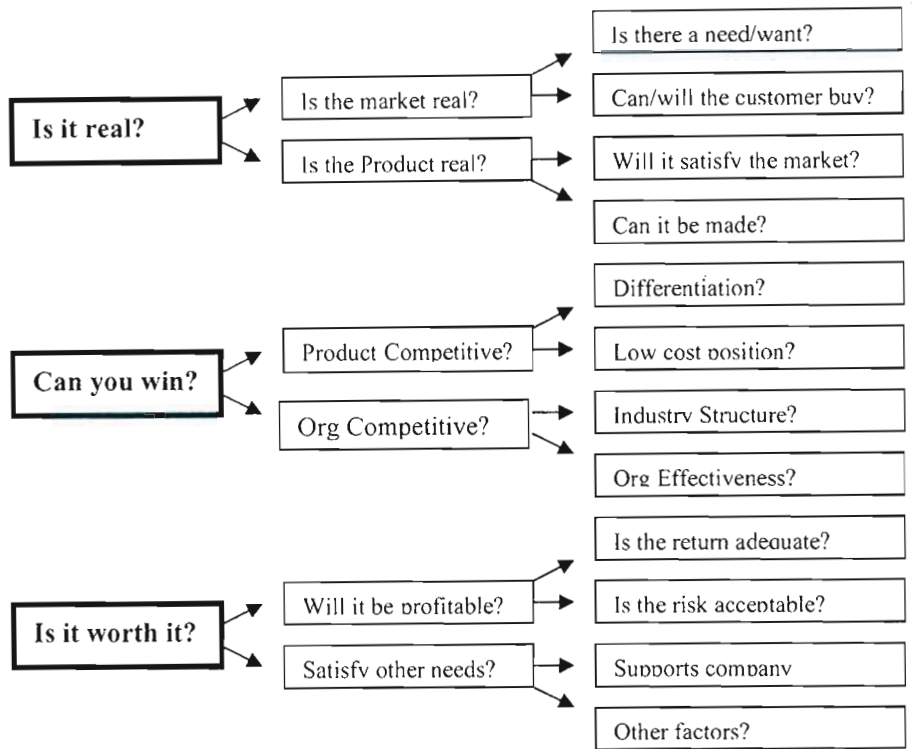
- *Is It Worth It?*

The final question that needs to be answered is whether the new product will be profitable and whether its profitability is acceptable and as good as or better than other opportunities that the firm has. These profitability questions are normally answered with a formal business case that shows projected profit over the life of the product or expresses this data in the form of return on investment (ROI) or other similar financial measure. At **SafDev** this is done in the form of a return on capital employed (ROCE)

(www.npd-solutions.com/feasibility.html).

The following diagram represents the elements of this feasibility assessment:

Figure 3.3: Elements of the Feasibility Assessment



(Adapted from Schrella Associates Inc)

The feasibility stage of the development process is primarily concerned with financial aspects of the project, most notably the potential costs and cash flows of the intended project. In other words, the feasibility study is an analysis aimed at discovering whether or not a specific project can actually be carried out successfully.

An initial feasibility can be completed based on the preliminary figures as identified during the viability stage of the process. This can provide initial info regarding the feasibility of the project, but a more precise feasibility is, however, required to determine the optimum development mix. In this regard, issues such as phasing, sales tempo, construction tempo, size of scheme and the size and mix of units should be considered.

The feasibility study is one of the most important steps to be undertaken in a project. The feasibility is part of the overall risk management process. This is needed, because many of the decisions taken during the development process are entrepreneurial in nature and, therefore, not insurable. The goal behind the feasibility is to ensure that cognisance is taken of all facets of the project in order to minimize the risk inherent in the business of development. It is therefore, imperative that all aspects of the project should be costed.

Over optimism at the feasibility stage and poor investigation is a recipe for disaster. On the other hand, pessimism and over-investigation result in potentially profitable opportunities being lost. As stated earlier, in order to provide guidelines in this regard, *SafDev* has adopted ROCE (Return on Capital Employed) as a yardstick for determining the feasibility of a specific project. At present this yardstick is set at a return of 80% on Capital Employed.

Apart from providing the objective measures on which the decision to proceed or not with a project is based, the feasibility also provides a solid foundation from which a specific project can be measured and managed. By constantly taking cognisance of the feasibility, managers can ensure that a project stays within the parameters that were used in the feasibility.

In preparing a project feasibility there are a number of budgetary and cash flow principles that need to be kept in mind.

- *Budgetary*

The project budget should be distinguished between direct costs, indirect costs and contingencies.

The direct costs are all those costs that are paid out to external suppliers of goods and services, as well as the internal costs that are directly attributable to a project.

Indirect costs are those that are incurred by the company in the ongoing operation of the management structure. Due to the small corporate structure at *SafDev* and its approach based on employing contractors, these costs are usually extremely low in comparison to most other development companies.

A provision for contingencies should be made whenever there is an uncertainty on cost estimates. Contingencies are provided for the following events:

- ❖ changes in the quantity of construction
- ❖ changes in the scope of works
- ❖ costs occasioned by delays

SafDev limits these contingencies by making them the responsibility of the respective contractors. *SafDev* signs fixed fee contracts with the respective contractors, which places the contingency risk on them. If they neglect to budget for contingencies they are responsible not the developer.

- *Cash Flow*

The main purpose of the cash flows is to determine time related costs, peak borrowings and total borrowings during the project life. Cash flows are particularly important in terms of Sectional Title developments, because in general, the developer has to complete the entire development before he starts earning income from it. As such, deciding on the particular type of development that will be done is one of the most important elements of the feasibility phase.

Due to the unique characteristics of each of the different types of developments in which **SafDev** is involved, it is almost impossible to finalise feasibility without first deciding on the type of project. In most cases, this is a simple decision which is based on the results of the sales/marketing investigation, but in some cases it is necessary to prepare alternative feasibilities, because more than one development type could work on a specific piece of land. The four basic development types that **SafDev** gets involved in are:

❖ *Land Servicing*

Land servicing involves the provision of infrastructure for a specific township development. In general, infrastructure development can be divided into two categories, namely, internal and external infrastructure. It is common practice that the township developer accepts responsibility for the internal infrastructure, whilst the Local Authority takes responsibility for installing the external services.

The internal services are the capital intensive services, namely, water reticulation, sewerage/sanitation, electricity reticulation, public lighting, road construction and storm water drainage. In general these services can be divided into trading and non-trading services. The trading services are those for which a tariff is levied by the local authority whilst the non-trading services are those that are used for free by the consumer such as roads.

❖ *Sectional Title Development*

Purchasers are attracted to sectional title schemes for a number of different reasons including the GASH (Good Area Small Home) concept through which a client is able to buy into a relatively up market area for a relatively low price, thereby

obtaining access to good schools, shopping centers and community facilities that they would not otherwise be able to afford. Additionally, with crime levels as high as they are, the security that is offered by these complexes provides peace of mind

However, from the developer's point of view, the nature of these developments carries a high risk and therefore they have to be controlled and managed exceptionally well. Due to high cash demands, strict adherence to the development programme and the correct reading of the market and predicting of the sales tempo become critical in order to minimize the interest on the capital employed. If the market demand does not meet expectations, and construction has commenced, all unsold units effectively become "spec" units. Should these not be sold quickly, it is impossible that the additional holding costs will negate all profits previously made on the sales of the earlier units.

❖ *Cluster Development*

For the most part, these cluster development are sold as building packages in which the buyer pays a certain amount for the purchase of a serviced stand and then gets to choose from one of several floor plans that the developers then builds for the client. The cash flow risk in these developments is considerably less than in sectional title development, because the developer uses the client's money to build the units. The risk in these developments lies in the initial stages, because the developer has to pay for the installation of the infrastructure. In general, banks are not willing to fund infrastructure development by itself.

❖ *Affordable Housing*

The key to successful affordable housing development lies in understanding the actual process that is involved. In particular, it is important to note that in most cases low cost housing developments involve two developers, the land/infrastructure developer and the top structure/housing developer. The land developer is involved in transforming raw land into a township with serviced stands, whilst the top structure developer is responsible for the sale and construction of the actual housing units.

3.7.2.4 Secure Land

Once a property has been identified, and the viabilities and feasibilities have been approved, there are several ways in which it can be secured

- *Deed of sale*

The deed of sale is simplest way in which to secure a property, but it also the most risky option from a development point of view, because the developer takes transfer of the property before all of the risk mitigation milestones have been achieved. This particular way of securing land is usually reserved for instances in which the selling party has already begun the development process and can offer concrete proof of the feasibility of a project, or in cases where raw land is purchased at a very low price and land banked for future use. Additionally, this type of sale is used when developers are interested in “land banking” properties for future use. This usually occurs when a developer has identified an underdeveloped area with good potential for future development – usually four or five years down the line.

- *Option Agreement*

The Land is tied up to allow for a period in which final feasibilities, and sales can be completed and the financial risk on the project minimised. The Project is abandoned if the pre-set sales targets are not met. In many cases this involves the payment of a non-refundable option fee to the seller and in all cases it involves the payment of a premium based on the fact that it provides the developer with an opportunity to limit his risk before taking transfer.

- *Delayed Sale*

In these cases, a deed of sale is signed, but the purchase price is only paid upon transfer of each of the individual stands. This is commonly referred to as a warehousing deal and is only contemplated with credible landowners such as, Johnnic, NEWHCO, Councils, etc. As is the case with option agreements, *SafDev* usually has to pay a premium for this opportunity to limit its risk and lower its holding costs.

- *Land Availability Agreements*

This gives *SafDev* the power of attorney to deal with the land as if title was held, without incurring the land acquisition cost. In projects where the developer is not the owner of the raw land to be developed, it is common practice to conclude a Land Availability Agreement with the landowner. This agreement confirms rights to the development without passing ownership of the land concerned. In general, these agreements are concluded with public sector agencies, but they can also be concluded with a private landowner. One of the main features of a land availability agreement is the fact that payment for the raw land is usually only made when a serviced

erf is disposed of to a new property owner. The obvious advantage of this type of transaction is the fact that the developer can smooth his cash flow for the project by not having to pay an upfront amount for the purchase of the land and by not having to carry the holding costs for the property. In addition, this form of land acquisition eliminates the need to pay double transfers, as the transfer of individual erven is directly from the property owner to the purchaser of the serviced or improved erf.

3.7.2.5 Marketing Launch

The marketing launch serves two purposes. First, it provides the company with an opportunity to meet the pre-sale requirements of the financiers, and second it serves as the market test for the specific product. In simple terms, this is the final Go/Kill decision that determines whether or not the company will proceed with a given project. If sales are slower than expected and the decision is no, the company both accepts its losses and withdraws from the project completely, or it makes the necessary changes to the product and re-launches it. This decision is obviously greatly influenced by the nature in which the property was secured. If the property is already owned by the company, they have no choice but to re-launch with a new product or at a later stage, whilst if the property has not yet been transferred, they have the choice of withdrawing from the sale.

3.8 Conclusion

Each stage in the *SafDev* Stage-Gate process is followed by a gate at which the necessary Go/Kill decisions are made. After stage one, a decision is taken on whether or not a specific property fits the strategic goals and objectives of the company and whether to further explore the opportunity. At gate two the Go/Kill decision is based on whether or not a specific project is technically viable, while gate three determines the financial feasibility of a given project. The decision at

Gate four is determined by the ability of the company to negotiate an acceptable deal for securing the property, both in terms of the financial and technical requirements. The final Gate is potentially the most crucial, because it is at this point that the company decides whether it should proceed with construction or not. Once construction commences there is no turning back, because the financial exposure of the company increases rapidly and the only way to get this money back is to complete the project.

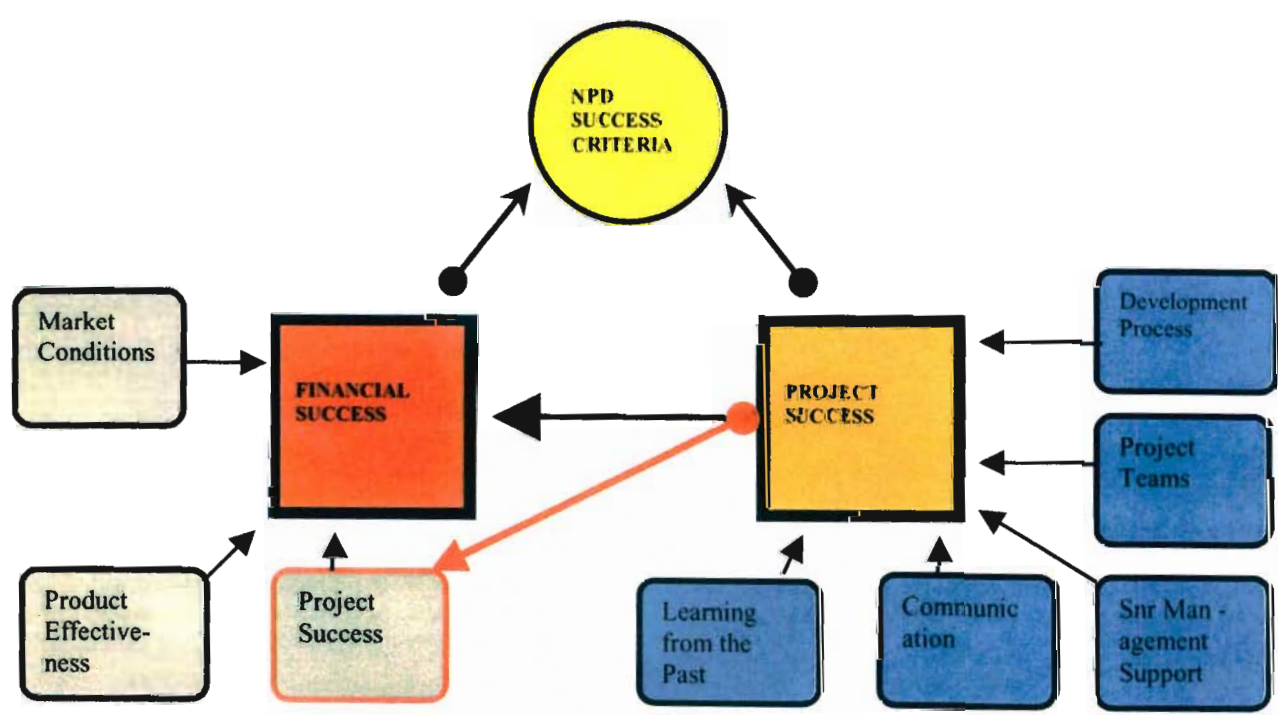
In order to put the above information into practical use, an analysis will be done that incorporates both the elements of the generic NPD process, as well as the different elements of the Critical Success Factors for NPD success as defined by Vähäkylä. This model will then be used in the next chapter as an objective tool for evaluating and analysing New Product Development at *SafDev*.

CHAPTER FOUR

4.1 Introduction

The purpose of this chapter is to provide an objective evaluation and analysis of NPD at *SafDev*, which is based on the theoretical information provided in chapter 2. The specific model that will be used to analyse NPD at *SafDev* is based on Vähäkylä Critical Success Factors for NPD. This approach has been chosen, because it provides a comprehensive set of factors against which to analyse the effectiveness of the NPD at *SafDev*. Not only is the specific process analysed, but those contributing factors that are required for the process to be a success are also evaluated. From the figure below we can see that the analysis of NPD at *SafDev* will involve two sets of critical success factors, namely financial and project success criteria. We can also see that these two sets of criteria are interrelated - in particular project success is a prerequisite for financial success - and therefore success in one area is not sufficient in itself to ensure overall NPD success.

Figure 4.1: Model for evaluation of NPD Critical Success Criteria



(Adapted from Vähäkylä Critical Success Criteria)

4.2 Financial Success Criteria

4.2.1 Project Success

As stated earlier and as shown in *Figure 4.1* Project success is not only one of the two pillars upon which NPD can be measured, it is also an integral part of the financial success pillar. If the development process and project are not successful, it would be virtually impossible to derive financial success from any new product that comes from such a failed project or process. For the purposes of this section it is merely important to note that project success plays the dually important role of being a pillar of success as well as an integral factor contributing to the financial success of NPD. The exact nature of project success at *SafDev* will follow in the later discussion on Project Success and its elements.

4.2.2 Product Effectiveness

In a highly competitive industry such as the residential property market product effectiveness becomes even more important than usual. Merely being able to produce a product is not sufficient. In an environment such as this the competitive advantage offered by a product becomes paramount. Within the *SafDev* context, this requires a very strong awareness of the needs, desires and resources of the potential clients.

The complicating factor for a company such as *SafDev* is the fact that it is involved in the entire spectrum of residential property development. As a result, careful consideration has to be given to identifying those factors in each of the different types of development environments that create competitive advantages. It is obvious that those features that differentiate one multi-million rand house from another are not the same as those that differentiate one 40sq/m house from another.

The secret to success, therefore, lies firstly in understanding the specific market sector and the clients in that sector, and secondly in understanding

those core competencies that are required in order to ensure that the organisation is in a position to deliver the requisite competitive advantage or differentiating factors.

At *SafDev*, there appears to be a very clear understanding of both of these elements, although it could be argued that this understanding is based on intuition and past experience rather than actual market analysis and internal evaluation.

With regards to understanding the market and developing the necessary core competencies, it is important to realise that *SafDev* is primarily involved in four areas of development, namely residential infrastructure development, cluster housing development, sectional title development and low cost housing development. The importance of this realisation, as stated earlier, is the fact that each of these sectors is very unique both in terms of the products delivered, the clients that are serviced and the competencies that are required:

- *Infrastructure Development*

In the residential infrastructure sector, *SafDev* operates as a contractor in the service of the actual property developer. In turn, *SafDev* appoints a number of sub-contractors to perform the actual infrastructure planning and construction.

In this specific sector of the industry, there is very little differentiation in terms of product delivered. Each of the numerous civil and electrical consulting and construction firms in the industry make use of the same suppliers and generic products and each of these firms is bound by the same rules and regulations as prescribed by the respective professional associations, as well as those prescribed by the various pieces of building and construction legislation. In general, therefore, competitiveness in this sector relies on price, ability to attract risk and the physical resources of the different professionals involved.

Despite the generic nature of this segment of the development industry, *SafDev* has managed to put together an innovative package which is specifically aimed at meeting two of the most important needs of their clients (other developers). On the one hand, *SafDev* takes sole responsibility for the delivery of the infrastructure. In other words, it provides the entire “design and build” service whilst simultaneously accepting full responsibility for the entire project. This simplifies the project management for other developers by providing a single responsible entity rather than several different professionals and their teams. More importantly, *SafDev* provides other developers with cash flow assistance by financing the entire infrastructure phase of their developments. In many cases this even includes the finance for the erection of the boundary wall, guard house and/or the show unit in cluster developments.

The advantage of this approach for other developers is the fact that *SafDev* smoothes their cash flow by only taking payment for the construction of the infrastructure once the individual housing units have been registered at the end of the project. *SafDev* protects its own interests by taking a covering bond over the property which is only released once payment has been made.

The critical issue with regards to the effectiveness of this product is to understand that by providing a service product that no other organisation in the industry (including the commercial banks) is willing to provide. It is not a service that is required by all other developers, but it is a niche product that lowers the entry barriers into the development industry and that allows existing developers who are over extended to continue their work on a “buy now pay later”. As such, *SafDev* has created a highly effective and unique product that is very difficult to duplicate because it requires very unique skills and competencies within the organisation. In this regard, *SafDev* relies heavily on the unique skills of its employees and management, as well as the recruitment of suitably qualified and knowledgeable individuals.

- *Cluster Housing Development*

Unlike the infrastructure developments that are aimed at providing a service to other developers, cluster housing, for the most part, involves the development of an upmarket product that is aimed directly at members of the public. As such, providing an effective product in the cluster market is considerably more difficult than in the infrastructure sector.

During the past six years in particular, the cluster market in large parts of South Africa, in particular Gauteng has become extremely competitive. This has been caused by a number of factors, most notably the fact that cluster housing complexes provide better security than traditional loose standing houses and secondly, because of the rapid growth in capital value that has been achieved by cluster houses in recent years. This aspect has been particularly important in luring investors to the property market instead of the capital markets.

At present, the cluster market generally caters for buyers in the R750 000-00 to R2 500 000-00 price class, depending for the most part on the size of the units and where they are located.

Due to the high level of competition in this industry, differentiation has become extremely important. In this regard, there are three basic approaches that have been adopted – differentiation based on price, differentiation based on building style and differentiation based on location. At present price based differentiation is the most widely used method, because of the large number of new developers in the market. In general, these new entrants stick to the tried and tested building styles (Example: Tuscan Villas) and development areas as a way of limiting their risk. Unfortunately, they are then forced to compete on cost alone, which often results in cost cutting at the expense of quality and profit.

At the other end of the spectrum are the developers who specialise in catering for the upper end of the housing market. In these cases,

differentiation is based on the location of the development and the quality and opulence of the finished products. As can be expected, the profitability of these projects is enormous, but the risk is also very high. Although the prospective clients are willing to pay almost any premium for exclusivity, the number of clients in this market is very small and the risk of saturation is very high.

Apart from simply providing a product, cluster developments provide an additional problem in that the product is most often tailored made to fit the desires of the client. Clients may buy a standard floor plan, but they usually have the right to change certain elements, at a cost, if they so choose. As a result, the majority of cluster houses are actually custom houses instead of simple reproductions. The implication of this is that the developer must be able to meet the needs of the customers at a price that they are willing to accept. From the differentiation point of view, the more options that are available, the greater the differentiation.

At *SafDev* product effectiveness is achieved by developing in new markets instead of offering new products. Instead of restricting themselves to those areas in which cluster housing has already been established as a way of life (Johannesburg Northern Suburbs), *SafDev* tries to gain advantage by taking the cluster product to those areas where it is still a relatively new concept. In large parts of the East Rand, for instance, cluster housing is still a relatively new concept. The advantages of this approach are threefold: Firstly, the price of raw land in these areas is considerably cheaper than in the existing development nodes, which allows *SafDev* to provide its product at a better price to its clients while still reaching its ROCE targets; Secondly, *SafDev* establishes itself as the first-to-market developer in that specific area and; Thirdly, by using local contractors *SafDev* reduces its development costs. In most cases the contract prices for work done in these areas is vastly lower than that paid in the high volume development areas. For the most part, *SafDev* relies on external parties to bring these new areas to their attention.

The end result of this approach is that *SafDev* has achieved considerable success and improved the effectiveness of its cluster offering, by concentrating on expanding the market rather than competing directly for the same market.

- *Sectional Title Development*

Sectional Title Developments provide their own unique problems and obstacles, most notably the fact that the developer usually does not receive his money until the entire development has been completed. In order to address this problem, sectional title development more so than any other type of development is reliant on very tight time planning and scheduling. Sectional title developments are literally a case of time is money, especially if the developer, like *SafDev*, uses bank finance to pay for the project.

One of the most difficult aspects of sectional title developments to deal with is the sheer size of the developments. Where most cluster developments involve 20 or 30 units, sectional title developments usually involve more than a 100 units. In most cases these units are cheaper than the typical cluster unit, but selling out a project can still be a considerable headache simply due to the numbers. It therefore becomes absolutely important that the correct product is presented to the clients. In other words, the product and the selling process are specifically designed to achieve sales targets as quickly as possible. The sooner the sales targets are met, the sooner the construction can begin and the sooner the profit can be made. This is of particular importance when using bank finance, because the banks will always set a comfort level based on the number of approved sales that have been achieved. In *SafDev*'s case, the banks usually require that 80% of the sectional title units be sold before they will be willing to disburse the finance. Consequently, any work done on the project until this stage is done at the developer's own risk. Any delays in meeting the bank required sales targets could therefore place enormous pressure on the developer in terms of land holding costs, the cost of having

to revise a product and the potential problems with clients if the construction phase of the project does not start on time.

In order to mitigate these problems, *SafDev* has developed a “step and repeat” approach to the actual products that are offered. This means that all of the *SafDev* sectional title developments offer virtually exactly the same basic product, namely a 72sq/m two bedroom, one bathroom unit, in a high value area. This approach not only saves development time, it is also aimed at attracting a very specific sector of the market, namely property investors. In this regard, property investors are individuals or syndicates who purchase sectional title units for the sole purpose of renting them out to others.

By studying the rental incomes achieved and the occupation rates of different types and sizes of sectional title units, *SafDev* has determined that two bedroom one bathroom units provides the best return and lowest risk for rental investors. In addition, it was discovered that most investors are concerned by the high levies in most new sectional title developments and therefore the *SafDev* developments do not provide any additional features such as swimming pools or communal areas that could raise levies, and generally they are built with materials that do not require much maintenance. As such, *SafDev* provides a product that is purely and simply aimed at attracting property investors. In addition, *SafDev* provides this product at a price that cannot be matched by its competitors. Not only does the company provide its clients with a product that exactly meets their requirements as investors, it also provides the product at a price that ensures almost immediate capital growth for the investors. In general, investors who buy of plan achieve capital growth of 20 – 30% by the time the development is completed. Finally, *SafDev* also provides its clients with an in house rental service should they require it. In this way, the investors also receive the aftercare and service that is not readily available from its competitors.

By following this approach, **SafDev** has virtually conceded defeat in the effort to lure non-investment clients, but it has differentiated itself from other developers in this sector by providing the optimum product for serious property investors.

The net result of this approach is that 80% of the units in **SafDev**'s sectional title developments are sold directly to investors without any marketing or advertisement to the public. The final 20% is then sold to the public upon completion of the project at an increased premium. This approach allows **SafDev** to overcome the dangerous delays caused by units that do not sell quickly enough. Most investors never even see the plans of the units that they are purchasing. They simply buy based on the fact that they have previous experience with the **SafDev** products that provide exactly what they as investors require.

The secret to success in this regard, however, lies in the personnel and systems that **SafDev** has in place. This refers to the salespersons who are responsible for dealing with clients, as well as the support and administrative personnel who are responsible for ensuring that the administrative process runs smoothly and with as little discomfort as possible to the client. For this to be achieved **SafDev** has spent considerable time and energy in developing a database system which not only keeps the details of all clients, it also tracks the purchasing patterns, and requirements of the clients. In this way, the salespersons always know who to contact, when to contact and which products to offer. This also helps in establishing a relationship between **SafDev** and the financial institutions that finance the majority of these investment portfolios.

- *Affordable Housing*

With regards to low cost housing development, **SafDev** once again differentiates itself from the majority of competitors by getting involved in both the land and top structure development. The importance of this differentiation lies in the peculiarity of the low cost housing market that is

based on the vast shortage of serviced stands for this type of development, which is caused by the large amounts of initial capital that is needed to develop the necessary infrastructure for such townships. For the most part, financial institutions are not willing to finance the installation of township infrastructure. They are usually only willing to get involved in the top structure development phase of a project. In terms of low cost housing development, this becomes problematic because the economic viability of such a project depends on volumes, which in turn requires enormous up front investment from the infrastructure developer. For this reason very few developers are willing to take the risk of doing infrastructure development on such a large scale and as a result, there is an enormous shortage of serviced low cost stands.

A system has therefore developed in which a small number of infrastructure developers control the distribution of stands to the top structure developers. This in turn has created a situation in which the most important advantage for any top structure developers lies not in the product that he delivers, but in his ability to acquire stands in the areas that his clients desire. Simply stated, the better the top structure developer's access to stands, the better the product that he can deliver.

By understanding this peculiarity in low cost housing, it is quite evident how much more effective *SafDev* is in providing a product to its customers than most of the other developers in this sector. By developing its own townships, *SafDev* ensures a constant supply of serviced stands for top structure development. In addition, it is able to leverage its influence as a land developer to gain preferential treatment from the other land developers, thereby securing a steady supply of stands in virtually all of the existing townships in which stands are still available. Most importantly, because of the shortage of stands, *SafDev* once again places itself in a position to establish markets in areas in which there were none before. If *SafDev* identifies a need for low cost housing in a specific area that has so far gone untapped, they have the ability and willingness to enter the market as both the land and top structure developers. This gives them

the freedom to provide housing units in areas that no other developer can or will enter.

4.2.3 Market Conditions

As stated earlier, while product effectiveness concentrates on ensuring that a newly developed product is superior, in some way, to other products, this advantage means little if the target market is chosen incorrectly or if there are negative factors within the market that mitigate against the success of the product, despite its apparent advantages. In the case of property development, these market factors can include such macro issues as interest rates, inflation, GDP growth, wealth distribution and capital market stability, as well as micro issues such as design trends, development location, socio-economic and socio-cultural trends, community influence and variable consumer preferences.

In order to mitigate the negative implications of such a large and varied number of potential environmental influences on the market in general and specific target groups within the market, requires a great deal of diligence and commitment on the part of the developer. It is incumbent on each developer to ensure that they constantly keep up to date with all of the macro and micro influence that could affect the industry, because a single misjudgement could mean the difference between making or losing millions of rand.

It is this aspect of the development environment that invariably separates the long-term developers from the short-term speculators. At present, the external environment in South Africa is highly favourable for property developers both in terms of the macro and micro influences. On the macro side there are such positive influences as relatively low interest rates, low inflation and relatively good general macro-economic stability, whilst on the micro side there are factors such as the emergence of the black middle class, which is increasing demand, the shift of investment from the capital markets into properties and the overall desire from clients for a more

secure living environment. These factors have all combined to create an atmosphere in which almost anyone with the necessary capital can enter the development industry at relatively low risk.

Unfortunately, property development like most other industries follows a cyclical flow, which means that what goes up will eventually also come down. The history of property development has shown that this drop can at times take place much faster than expected thereby catching developers unprepared. It is usually during the inevitable downturn that the true developers are separated from the short term speculators, because it is the true developers who have systems in place to monitor the environment and the market in order to ensure that they adjust in time, whilst the speculators are usually the ones that get caught and have to withdraw from the market.

The secret to success in such a difficult and ever changing environment is to ensure firstly that the necessary systems are in place to keep a constant vigil on the environment and the market, and secondly to ensure that the organisation has the necessary capacity to make adjustments when needed.

At *SafDev*, the importance of this element of the industry was illustrated during 2003 when the company unsuccessfully launched its first ever sectional title project on the West Rand. The cause of the failure was quite simply a misunderstanding of the target market, which was caused by a complete lack of market research. In this particular case, the company launched a product that had worked well in the northern suburbs of Johannesburg and therefore assumed that it would also work just as well on the West Rand. *SafDev* even took the additional steps of increasing the average size of the units and of dropping the average selling price per unit in order to meet, what they thought were the needs of the market.

Unfortunately, the entire project was scrapped when it became obvious that the existing product missed an essential element for success in that particular market, namely a lock-up garage. In all of the previous sectional title projects that *SafDev* had done, they had only provided shade ports,

but in this particular market that was deemed to be unacceptable. Virtually all of the clients insisted that they could not buy a property that did not have at least one lock-up garage. In fact, the majority of these clients ended up paying more for smaller units with garages at a development that was launched at the same time in the same area.

The most important lessons that were learnt from this failure was that market research was essential, especially in new markets, because markets were not homogeneous and that an investigation of the competitors offerings was also needed in order to mitigate their strengths and accentuate their weaknesses. Ironically, a similar *SafDev* project in the same area, but with garages, was sold out within two weeks, several months later.

4.2.4 Conclusion

From the above discussion it is evident that the financial success of any new product depends directly on the effectiveness and efficiency of the NPD process, on the ability of the organisation to develop products that are relevant and distinguishable, and finally on the organisations' ability to correctly identify target markets, as well as positive and negative trends within a given market at any given time. These three elements are also not interchangeable and success in all three elements is required to ensure the financial success of a NPD process.

4.3 Project Success Criteria

4.3.1 Development Process

In analysing the Development process as used by *SafDev*, a two-pronged approach will be used. Firstly, the specific Stage-Gate process at *SafDev* will be reviewed and secondly, the *SafDev* process will be compared to the elements of the generic model as discussed in Chapter 2. In this way not only the strengths and weaknesses of the Stage-Gate

process as implemented by *SafDev* will be identified, but also those strengths and weaknesses that might not usually be associated directly with the Stage-Gate process.

4.3.1.1 The Stage-Gate Process at *SafDev*

As discussed in Chapter 3, *SafDev* uses a rather strict version of the traditional Stage-Gate process that consists of five stages and four gates. As with any classic Stage-Gate approach, the *SafDev* approach has well defined stages that are followed by very strict Go/Kill criteria.

During the first stage (Identification of Land) the Go/Kill decisions are simply based on the location of the property and the price of the property. As discussed earlier, *SafDev* is primarily involved in the development of residential properties in the Northern Suburbs of Johannesburg and as such these areas receive first priority. At the same time, however, *SafDev* through its business model for developing affordable housing and cluster units is also willing to consider land in non-core areas for these specific types of developments, as long as the properties do not fall outside the boundaries of Gauteng Province. The reasoning behind this approach is simply a matter of not wanting to incur the difficulties of trying to manage projects at a distance and also to focus on those areas and those markets that are known to the company, thereby limiting the risk exposure of the company.

The Go/Kill decisions during the second stage (Viability Stage) are considerably more complex than in the first, because they are determined by a myriad of factors ranging from technical issues such as soil composition and the availability of bulk services to such factors as the availability of public transport, schools and entertainment venues, which are usually based on rather subjective measures. All of these factors are important, because they do not

only determine whether or not development is possible on a specific piece of land, they also determine what type of development (Sectional Title, Cluster or Affordable) is possible.

This decision is further complicated by the fact that the specific factors of interest will vary depending on the type of development that is being considered, as well as the specific nature of each individual development. This situation is perhaps exacerbated by the fact that the company does not work off a pre-prepared list of non-technical factors for each type of development. Instead, these factors and criteria are developed on an ad hoc basis. From the technical point of view it is much easier, because each of the professionals on the development team is tasked with determining three simple questions, namely:

- *Is it technically possible for construction to take place on the land?*
- *Can construction and development take place at an acceptable cost?*
- *Can the specific product that **SafDev** has in mind be built on this land?*

Once again, as in the first stage, the Go/Kill decision in the third stage (Feasibility) is quite simple to make. It is at this point that the company reviews the feasibility (financial case) for/against the development of the property and decides whether the financial rewards meet the criteria as required by the company. In the case of **SafDev** these criteria are rather straight forward. The company requires:

- *A minimum return of 80% on Capital Employed (ROCE);*
- *Approval in principle from the financier that the necessary development finance will be approved;*

- *Assurance from a financial institution that the purchase of the land will be financed if current cash flows do not allow an outright cash purchase; and*
- *Comfort that current cash flows are adequate to cover the holding costs of the land.*

Once the feasibility has been reviewed and accepted, the company enters the fourth stage (Securing the Land) in which it negotiates a method of acquiring the land which best suites the requirements of the financial feasibility. In this regard, there are a number of factors that could influence the type of option that is utilised. Firstly, there is the question of price. In many cases the initial asking price is unrealistically high and as a result, the financial feasibility does not work. In these cases, therefore, an attempt is made to negotiate a land price that suites the feasibility. If this cannot be achieved, the company has to decide whether to cancel the project or whether to attempt an alternative approach such as bringing the owner in as a JV partner in the development. The latter option is, however, only considered in exceptional cases.

Secondly, there is the question of cash flow and whether or not the property will be purchased cash upfront, or whether some form of delayed payment structure can be negotiated. This type of deal usually requires the payment of some form of premium to the seller. As with the selling price, the level of the premium that is required is often the factor that determines the final decision to proceed or not.

The critical importance of this stage is the fact that it has a direct influence on the final stage of the process, which is the marketing launch of the project, because it is impossible for the company to take on the risk and cost of preparing the marketing launch until it has firmly secured its rights over the property.

It is at the marketing launch stage (Fifth stage) that *SafDev* introduces the specific product to the public or to its investor clients. To reach this point, however, requires considerable costs, because a large part of the project planning process has to be completed before the actual marketing launch can take place. It is, for instance, during this phase that the final Site Development Plans and floor plans are drafted by the architect and approved by the Municipal Council. For this to happen also requires considerable work to be done by the other professionals including the civil and electrical engineers, the land surveyor and the project manager, all of which is done at expense to the company.

In general, the *SafDev* Stage-Gate approach is premised on the traditional idea that costs to the company increase as each consecutive stage is completed and therefore it is of utmost importance to take increasingly more strictly defined choices as the process develops. In this way the company attempts to limit its financial risk by ensuring that only those projects that are technically viable and financially feasible are actually taken through to the point of full development and construction. The benefits of this classical approach include (PDI Inc 2003):

- *Providing a roadmap for the project leader/manager, which defines duties and deliverables;*
- *Putting discipline into what could otherwise be a somewhat ad-hoc and chaotic process;*
- *Providing a visible process that can be easily understood by all involved;*
- *Forcing the different members of the team to pay more attention to quality of execution, because each gate acts as a quality control checkpoint;*

- *Creating a complete process that minimizes the threat of critical errors of omission. In other words it provides a complete process with no missing steps; and*
- *Multifunctional, which means that inputs can be received from all of the parties involved;*

As shown above, there are a number of advantages to following the traditional Stage-Gate approach. In the *SafDev* case the most important of these is the fact that it provides a roadmap that clearly defines the specific roles of the different role players at each stage of the development process.

As discussed in Chapter 3, the property development process involves a large group of different professions that are each tasked with performing very specific tasks and operations. In order for the development process to take place effectively, however, many of these tasks and duties have to run concurrently and in many cases they have to dovetail. The secret therefore lies in ensuring that each of the professionals is always aware of what he is supposed to be doing and not doing at a given moment and in making each aware of how his tasks and duties affect those of the other professionals.

Additionally, due to the fact that most of the professionals work on a fee basis, they are often inclined to place their own cash flow needs ahead of the needs of the project. This then leads to situations where the professionals actually outpace the development process in an attempt to accrue their fee income more rapidly. By using the strict Stage-Gate approach, this is easier to regulate and prevent.

Finally and perhaps most importantly, the gates provide *SafDev* with an opportunity to continuously review and monitor the work

of the different professionals, by comparing their results and recommendations with those of the other professionals. Again it is important to note that the professionals are contracted by the company to do specific work. Unfortunately they are not exclusively contracted to the company and this can lead to situations where they place their own interests ahead of those of *SafDev*'s. In this regard there are several good examples that can be referred to including the situation where professionals overextend themselves by accepting more contracts than they can effectively handle; where professionals neglect the work on one contract because they are focusing on another contract that might have higher fees or where the fees are going to be paid out sooner; and finally there is the case where professionals unfortunately paint a rosier picture of a specific development in order to ensure that it goes ahead and they receive their fees.

By using the classic Stage-Gate process, the majority of these professional related problems can be minimised, because of the amount of control and objective evaluation that is required by the process.

Unfortunately, as is the case in most development processes the traditional Stage-Gate also is not perfect. Due to its hierarchical flow of activities, this type of process is best suited to an environment that has relatively predictable conditions and in which a range of assumptions are embodied in a product's design, and any changes from that design are avoided. Not deviating from specifications is a distinct virtue. The classic Stage-Gate model can, however, run into trouble in turbulent environments, because the stages and gates break up work into sequential phases, thus thwarting parallel, overlapping activities, especially when they cross the decision points; these processes do not encourage completing tasks in earlier phases to keep them off of the critical path; and they foster a mindset in which work proceeds

sequentially and therefore discourage highly overlapped, iterative rugby-type processes (PDI Inc 2003).

The problem with using a traditional Stage-Gate model, such as that used by *SafDev*, in the property development environment is the fact that change and uncertainty are two of the most constant features of the industry. When one considers the fact that development companies are operating in an environment in which the legal, technical and administrative processes, procedures and technologies are constantly changing, it is easy to see why change and uncertainty form such an integral part of the industry.

The problem for *SafDev* and other development companies like it therefore lies in finding a middle ground between the strict control and risk minimisation offered by the classic Stage-Gate approach, and the need for flexibility in order to respond to rapid changes, both negative and positive, in the development environment. A classic example of this would be the fact that many property owners are not willing to wait for full viabilities and feasibilities to be completed before selling the land. In these cases, *SafDev* might lose a potentially lucrative deal because its process does not allow for this eventuality. Properties simply cannot be secured until stages 1 - 4 have been completed.

There are numerous opportunities in every single stage of the *SafDev* Stage-Gate process in which rapid changes in the environment could have an impact on the future of a development project. In the current system in which the members of the development team are given very specific instructions and limits on what to do and when to do it, there are numerous examples of changes in the environment not being communicated to the company or not being addressed timeously or adequately, because doing so would fall outside the current mandate of the respective professional/s.

Another practical problem that has often appeared in the *SafDev* approach is the fact that the approach discourages initiative on the part of the project team members. A good example in this regard would be the design of services/infrastructure for a specific project. In most cases the design of the physical infrastructure involves a process of negotiation between the consulting engineers and the respective town councils. Due to the time limits that are often placed on the engineers by the Stage-Gate process, the engineers often submit designs or evaluations that are based on preliminary discussions with the council. These designs or recommendations are then used to make certain Go/Kill decisions. It is only after the process has moved on to the next stage that these preliminary discussions are taken further and in many cases the engineers are able to gain council approval for designs that differ considerably from the originally discussed plans. In most cases this impacts on the project in a positive way in that the developer is able to build additional units or the specifications for certain designs are lowered thereby resulting in savings for the developer. In the *SafDev* case these positive outcomes are often not exploited, because the process has moved on and too many later decisions, which cannot be changed, have been made on the basis of the earlier designs. The only choice at this stage is to either continue as is or to restart the process, which could cause unacceptable delivery delays. Ironically, the smaller the change the smaller the savings and the larger the change the larger the savings, which means that large savings are often ignored because the process cannot deal with unscheduled inputs.

4.3.1.2 The Generic NPD Model

- *Ideation /Opportunity Identification and Selection*

The ideation or strategic phase of the *SafDev* NPD process has to be considered at two different levels. On the one hand there is the business strategy level in which the strategic direction of the company is established; while on the other hand there is the financial strategy level in which strategic financial goals and objectives are identified and defined.

In terms of the business strategy level, there is quite a clear vision of what *SafDev* wants to achieve and which sectors of the residential property development industry it wants to be involved in. These issues are all clearly identified and discussed in the company's strategic plan as discussed in Chapter 3. An important element of the *SafDev* strategic business approach that is not discernable from the company's strategic plan is the fact that *SafDev* is very much an opportunist company at its core. Therefore, the entire strategic philosophy of the company is much more inclined towards an emergent strategic process rather than a prescriptive approach. In practice this means that even though the company has adopted a well defined business strategy with equally well defined objectives, it is still not averse to seeking and exploiting opportunities that do not fit within the framework of the existing strategic plan.

At the financial strategy level, *SafDev* has also developed a well thought out strategic approach based on balancing the relationship between striving to increase revenue and the need to ensure cash flow discipline. This is particularly important due to the nature of the development industry. For the most part, residential property development involves a cycle of long periods of heavy cash investment and short periods of income. If this cycle is not properly managed, cash flow can very easily become a problem. Despite its strategic commitment to financial discipline, *SafDev* historically tends to go from one cash flow crisis to the next. The blame for this situation can be placed squarely at the feet of its

emergent/opportunist strategic approach, which often sees the company getting involved in projects and opportunities that fall outside the framework of its strategic financial and business plans. This then results in drains on the cash flow that were not foreseen or planned for.

In terms of opportunity identification and selection, *SafDev* has allowed itself to become almost exclusively dependent on external sources for the identification of suitable properties to develop. There is currently no internal mechanism through which potential areas for development are identified and exploited. Unless an outside source draws *SafDev*'s attention to a potential development opportunity, nothing happens. The irony of this situation is the fact that much of *SafDev*'s product differentiation strategy in the cluster housing market is based on building cluster developments in previously under developed areas. In practice, however, this strategy is much more reactive than one would expect.

- *Concept Generation*

The concept generation phase of the *SafDev* NPD process actually cuts across several stages and gates and is to a large extent predetermined by the strategic business approach of the company. The concept generation phase is usually initiated in one of two ways. There is external concept generation which occurs when the company is approached by persons outside the company with pre-prepared project concepts, and then there is internal concept generation which occurs when the company already owns or has already secured a previously undeveloped piece of land.

To a large extent, internal concept generation at *SafDev* is a product of the viability and feasibility studies of the land that has been identified for development. The physical product that can be placed on a particular property is determined upfront by the

technical and financial limits and opportunities that are available on a specific property. Once these limits and opportunities have been identified, *SafDev* relies on its “step and repeat” strategic business approach which limits the company to three very specific product concepts namely affordable housing, cluster housing or sectional title.

- *Concept Evaluation*

At *SafDev*, concept evaluation is very much a process that runs concurrently with the concept generation phase. As shown above, in many cases concept evaluation actually precedes and determines concept generation. Due to the technical nature of residential property development and the enormous potential financial risk, concept evaluation in the form of viability and feasibility studies is an absolute necessity.

In order to save time, *SafDev* has adopted an approach in which all of the potential product concepts are tested simultaneously. This process is, however, simplified by the fact that the company limits itself to the three basic product concepts mentioned above. In most instances the concept evaluation process eliminates two of the three possibilities, which makes final concept selection a given.

It should, however, be stressed that concept evaluation is an ongoing process that does not end until the risk mitigation milestones for a specific project have been reached and the physical development of the property has begun. In this regard, the launch phase of the NPD process plays an extremely important role, because it is only at this stage that the potential clients are given an opportunity to evaluate the concept.

- *Development*

The concept development process at *SafDev* is very much a technical process that is guided by the results of the feasibility and viability stages of the NPD process. Once the basic concept has been decided on, further development simply becomes a process of determining how this concept can be developed on a specific property in order to maximise the financial opportunity. In most cases this comes down to a simple matter of attempting to place as many housing units as possible on a given property and doing it in the least expensive way possible.

In all of these cases, *SafDev* simply duplicates products that it has successfully used in the past, which results in very little product innovation.

Any innovation that does take place at *SafDev* is reserved for the non-physical aspects of the product such as the identification of new markets for a specific product and finding new or innovative ways to market the product. Unlike the concept development process for the physical product that is determined by highly technical investigations, the concepts at this level are mostly a result of intuition and “gut feel” rather than clearly defined qualitative or quantitative research.

- *Launch*

The launch phase of the *SafDev* NPD process is both the final phase of the concept evaluation stage and the first stage of the physical development of the project. If the off-plan sales go as well as hoped, the concept is finally accepted and the company commits itself to accepting the financial risks of development. If the sales do not go well, the company withdraws the product and

limits its losses. It must be remembered that the launch also satisfies the risk mitigating requirement of pre-sales that most financial institutions require before they are willing to provide finance to property development projects.

4.3.2 Project Teams

In order to limit company overheads, *SafDev* employs cross functional teams of contract professionals that are appointed on a project by project basis. These professionals cover a wide range of professions including, architects, real estate agents, town planners, engineers, bond originators, lawyers, land surveyors and builders. In addition, *SafDev* ideally also appoints a single independent Project Manager (PM) to supervise, control and coordinate the entire development process.

Due to the requirements of the industry and legislation, the composition of these teams is fairly stable, with each team consisting of the same range of professionals, as mentioned above. The exact members of the teams do, however, change from project to project.

Due to the nature of the *SafDev* Stage-Gate process, each of these professionals is given very specific roles to perform in line with their specific areas of expertise. The role of the PM is, therefore, to form the link between the different professionals and between the professionals and the company. The PM can, however, also be the weakest link in the entire development process.

If the PM is not able to control the functioning of the team, considerable space is created for misunderstanding and confusion. The major problem in this regard is the fact that there are currently very few PMs in the industry who adequately understand the Stage-Gate model and who are able to manage the process from start to finish. As a result, it is often necessary to appoint more than one PM per project. In these instances, one PM would be appointed to supervise the legal/technical aspects of the

project, one would handle the marketing related aspects of the project and another would deal with the construction related matters (plans, designs and specifications). This situation exacerbates the problem of adequate control, because these PMs often work in a vacuum, which completely isolates them from the work of the other PMs. A case in point would be the example of a marketing PM developing unit specifications based on client needs, whilst the construction PM simultaneously develops construction specifications based on cost effectiveness and ease of use. Inevitably this leads to conflict and misunderstanding.

Another major problem in managing a team of independent consultants is the fact that there is always a great deal of internal politics and positioning behind the scenes. Unless this is adequately managed, the teams tend to form smaller sub-groups in which individuals group themselves together in order to suit their own agendas rather than achieving the goals of the project.

The final challenge in dealing with these teams lies in finding the right mix between new blood and experience. Research suggests that teams that have worked together a short time tend to lack effective patterns of information sharing and working habits, whereas teams with long tenure tend to become inward focused and restrict information and resources from outside (Brown and Eisenhardt, 1995). Practical experience within the *SafDev* environment would seem to support this view. In cases where the same professionals are used continuously over long periods of time, complacency and lack of innovation eventually appear; conversely teams that consist of mostly new members often create a situation where the wheel is recreated over and over again, because they do not have adequate knowledge and experience of the *SafDev* modus operandi. The obvious answer to this dilemma is to ensure that the PMs are always experienced and knowledgeable enough to identify the respective danger signs and to address them, but as shown above this in itself is a major problem.

4.3.3 Senior Management Support

Senior management support, as such, does not pose a problem at *SafDev*, because the senior management is directly tied to the project in terms of equity stakes and in terms of signing unlimited sureties for any financing that is required. As a result, senior management has a vested interest in ensuring that the development process runs as smoothly as possible.

Senior management support should, however, been seen on two levels. Firstly, management has to provide the necessary and preferably the best available resources to the project. Within the *SafDev* context this would refer to making available the necessary financial resources as well as ensuring that the necessary skills are available either internally or externally. Secondly, senior management should provide subtle control over the project, in terms of providing strategic leadership and assisting with problem solving and conflict resolution. Once again, there is no lack of control from senior management within *SafDev* due to the fact that senior management is directly tied into every single project. In fact, there is a danger of too much senior management involvement rather than too little. With so much at stake, the over-eagerness of senior management sometimes creates a feeling of distrust between themselves and the project team, which in itself then becomes harmful to the project rather than helpful. These situations are fortunately not the norm, but they are worth noting in an effort to improve the overall performance of the project teams and flow of the process.

4.3.4 Communication

The use of ad hoc communications for both internal and external communication is undoubtedly one of the major shortcomings within the *SafDev* development process. For the most part, the blame for this complete lack of a structured communications regime can be placed on the history of the company. Since its inception in 1998, *SafDev* has prided itself on being a “lean and mean” organisation, which in practical terms

meant that it carried a very small permanent staff compliment that was organised in a very flat and informal structure. Initially, this structure was acceptable, because the number and scale of the projects in which *SafDev* was involved was quite limited. With time, however, the company expanded in terms of projects and turnover, but the staff compliment and modus operandi did not adapt with it. This has led to a situation in which internal communication takes place on an ad hoc crisis management basis, because all of the employees and the senior management in particular constantly face severe time constraints. This in turn makes it virtually impossible to convene regularly scheduled project, staff and/or management meetings. When this is combined with the problem of sometimes having to appoint several PMs to complete a single project, it becomes clear that *SafDev* is faced with a recipe for eventual disaster. This does not even include the problems as already discussed of the lack of communication that sometimes occurs between the different professionals and PMs on a given project.

With regards to external communications, *SafDev* does not fair much better, both in obtaining information from external sources and in disseminating information to external stakeholders. The company has developed a very strong “need to know” culture with regards to its external stakeholders and this often leads to dangerous misunderstandings, especially when it is linked to a non-existent strategic communications plan. Simply put, there are no clear cut guidelines on what should be communicated, who it should be communicated to and who should do the communicating. This situation often results in mixed messages being communicated and uncertainty being created regarding the bona fides of the communicator. In recent times this has led to considerable problems with local communities and local councils. A good example in this regard is a recent misunderstanding regarding the closure of a road running through one of the company’s properties. Due to a breakdown in the internal communications, engineers approached the responsible local council for permission to close the road, even though there was no intention on the part of the company to do so. This information then

reached the relevant local community and resulted in wide-ranging community protests against the proposed development. The situation was then exacerbated by the company's failure to respond timeously to the community leaders' request for written confirmation that the road would not be closed.

4.3.5 Learning from the Past

The primary problem with learning from the past is the fact that it requires a well developed internal system through which accumulated knowledge can be transmitted, stored and utilised. At the root of this system lies the need for a very well designed internal communications system. As shown above, this type of internal communications system does not currently exist at *SafDev* and as a result the company must rely on the historical knowledge and experience of the respective PMs and professionals that it employs. The problem with this approach is that *SafDev*, like most other organisations, has a unique *modus operandi* that does not always follow the rules and practices as used by the industry in general. If a PM or professional has not worked with *SafDev* before, he will not be aware of these peculiarities and will therefore perform his tasks in a way that is not necessarily acceptable to the company, which in turn causes delays. The obvious solution to this problem is to only appoint project members who have worked with the company before, but, as discussed above, this approach has its own problems.

The major concern for *SafDev* is the fact that this problem is becoming worse as the company grows. In its first years of operation, the lack of a well developed system for capturing organisational knowledge was overcome by the direct involvement of senior management in every aspect of the project. At present, however, this is no longer possible and their accumulated knowledge and experience is rapidly disappearing from the organisation.

4.4 Conclusion

The advantage of using the Vähäkylä model to analyse NPD in a given company is the fact that it takes a holistic view that includes the process as well as the related success criteria. If a more simplistic or one dimensional model were used, it is quite likely that the results would differ. In the *SafDev* case, for instance, the difference between receiving a good and a bad report could depend on the specific factor that was used. If product effectiveness was used as the only measure, *SafDev* would look good, while if communication were used, *SafDev* would look bad.

As it stands, *SafDev* probably deserves an overall rating of acceptable. As the above analysis shows there are elements of NPD that have been done very well, but at the same time there are also elements that require considerable attention. The true test of NPD success at *SafDev* will possibly only come when the residential property market stagnates or starts declining, because it is only then that it will become clear whether *SafDev*'s business success can be attributed to its NPD or to the current market environment. This uncertainty in itself should, however, set the alarm bells ringing and should encourage the company to investigate every possible way to improve its NPD approach.

In the final chapter of this study, the results of the above analyses will be reviewed and a number of practical recommendations will be made on how *SafDev* can possibly improve its NPD approach. The Vähäkylä model will once again serve as the framework within which the recommendations will be discussed.

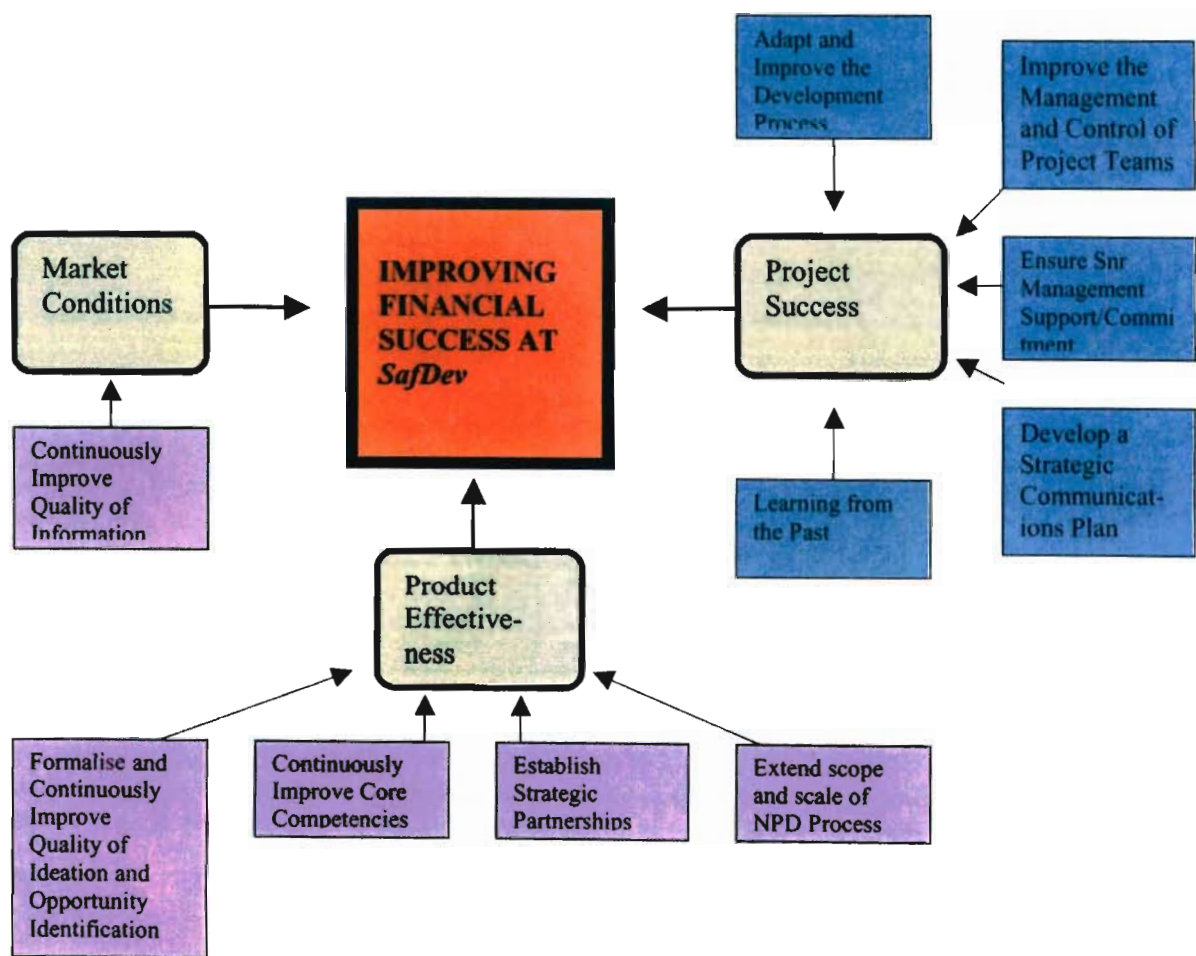
CHAPTER FIVE

5.1 Introduction

In order to present a structured format within which the recommendations on improving NPD at *SafDev* can be discussed, Vähäkylä’s Critical Success Criteria model (See *Figure 4.1*) will once again be used. Due to the inclusive nature of this model, all of the relevant elements of NPD at *SafDev* can be covered.

5.2 Financial Success Criteria at *SafDev*

Figure 5.1: Improving the Financial Success Criteria at SafDev



5.2.1 Product Effectiveness

As discussed in Chapter 4, *SafDev* has generally been very successful in terms of providing innovative products that are well suited to the core competencies that currently exist within the organization. The complicating factor at *SafDev* is the fact that it is involved in several different sectors of the residential property market and as such, there is no single recipe for success. Each of the different sectors requires a unique approach that caters to the needs of the respective customers and the market. There are, however, several recommendations that can be made that should improve the overall product effectiveness at *SafDev*.

- *Improving internal ideation/opportunity identification abilities*

First, *SafDev* should embark on a process to improve its internal ideation and opportunity identification capabilities. As stated in Chapter 4, *SafDev* to a large extent depends on intuition/“gut feel” and external sources for its project ideas. In the past this has proven to be highly successful, but this success should be seen within the context of the market environment in which they have been operating for most of the company’s existence. As a company that was formed in 1998, *SafDev* has, for the most part, had the advantage of operating in one of the greatest property booms in South African history. As such, it could be argued that much of their success was directly related to the market environment rather than to their informal ideation approach. If and when the market turns, success will become more difficult to achieve, risk will increase considerably and the need for certainty will increase dramatically. To survive in this type of environment, *SafDev* will have to take a much more active role in identifying potential opportunities. In other words, their entire strategic approach will have to become more deliberate and less opportunistic. This aspect will be discussed in more detail later in the Chapter.

- *Continuously expand and improve core competencies*

Second, **SafDev** has been able to differentiate itself from its competitors based on its internal competencies, such as the ability to structure finance deals, its ability to develop both infrastructure and top structure products and its well developed investor database. By utilizing these competitive advantages, which rely on knowledge rather than financial resources, **SafDev** has been able to out perform and outflank many of its much larger and wealthier competitors. To maintain this advantage will, however, require a concerted effort to continuously improve and upgrade these skills and competencies.

- *Develop and maintain strategic partnerships*

Third, **SafDev** needs to develop and maintain strong strategic partnerships with the other role-players in the NPD process. This includes the professionals who work on the project teams, the large investors, and the financial institutions that supply the development finance. By looking after the interests of these stakeholders and by treating them as partners rather than employees, customers or financial necessities, **SafDev** ensures that its own interests are also taken care of.

- *Extend scope and scale of NPD process*

Finally, **SafDev** must extend the scope and scale of its NPD process to focus not only on the physical product but also on the service that accompanies that product. Traditionally, development companies limit their service to those elements that are specifically mandated by legislation or council rules and regulations. In the current environment in which developments are often targeted at large property investors, this approach is no longer feasible. It is definitely in the interest of development companies to build strong and sustainable relationships with these groups and individuals, but this can only be done if the

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developers realise that they must deliver both a quality product and a high level of service to the potential customers.

5.2.2 Market Conditions

Quality of information is the key factor in determining the level of understanding that a specific company has about the needs of its market in general and its target group/s in particular. This is a simple rule of business that can be applied to all markets and all businesses, including *SafDev* and the residential development industry.

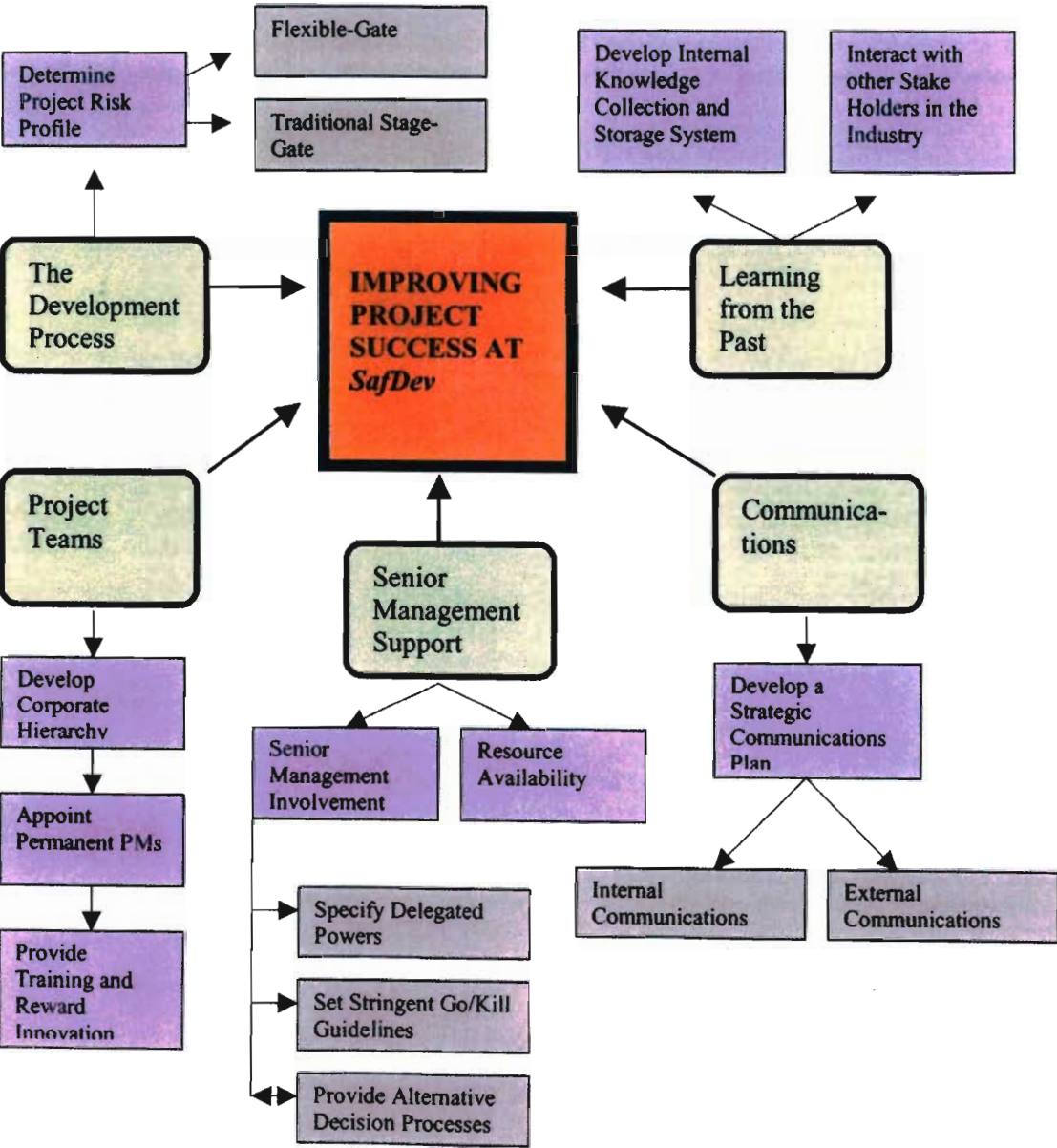
The key to success in exploiting market conditions, therefore, lies in developing a thorough and comprehensive understanding of all of the factors that could influence the market and/or the specific target group. At present, *SafDev* relies on highly informal system of information gathering, which is combined with past experience and intuition to form the basis of all market related decisions. In the current environment this may be good enough, but as shown in Chapter 4 this has already led to mistakes made.

As a company that builds its entire business approach on risk mitigation or deflection, it is almost inconceivable to think that *SafDev* has not yet developed a formal system or process for evaluating market conditions. Very few aspects of any business present greater risks than misunderstanding the market. This single oversight/misunderstanding could lead to the failure of an entire NPD process. Worst of all, the implications of misunderstanding the market are often only realised at the end of the process when considerable time, effort and money have already been spent. It is, therefore, undoubtedly in the interest of *SafDev* to develop a market analysis system that relies on concrete information and research, rather than hearsay and intuition. Due to the vast number of factors that influence residential property development, it is important that this system include a periodic analysis of both the macro and micro environments in which the company operates. In this regard, specific tools such as S.W.O.T. and P.E.S.T. analyses could perhaps be considered. In

addition, the company should continuously utilise formal market research instruments to test the needs of potential customers, specifically when the company enters new geographic areas for the first time. As the failure of the West Rand project showed, residential property customers are not a homogeneous group and it is, therefore, dangerous to approach them as such.

5.3 Project Success Criteria

Figure 5.2: Improving the Project Success Criteria at SafDev



have a formal idea capturing and handling system. New ideas are either developed on an ad hoc basis or during specific times in the business cycle, such as the annual planning stage. By adding a formal idea capturing and handling phase at the beginning of the NPD process, more progressive companies are able to replace the traditional “light bulb” ideation stage with a much more proactive “Discovery Stage” (Cooper et al 2003), which provides a clearly defined route through which new ideas can be fed into the company.

Simply developing a formal process through which ideas can be fed into the system is, however, not good enough by itself. In addition, a mechanism has to be developed through which new ideas are proactively generated by the company. In this regard, Cooper et al (2003) have several specific suggestions that should assist most companies including *SafDev*. Firstly, Cooper et al (2003), stress the importance of actively listening to the customer, by building in some form of Voice of Customer (VoC) research into the Discovery Stage. The exact nature and approach of the research may differ but the basic purpose of the research is to identify customers’ problems, unmet needs and even unarticulated needs (cooper et al 2003). The onus lies with the company to generate ideas from its customers, rather than always waiting for ideas to be brought to it by the customers.

Apart from the VoC approach which concentrates on external ideation, Cooper et al (2003) also highlight the importance of strengthening the internal ideation component of the discovery stage. In this regard, they specifically point to the usefulness of such creative tools as scenario development and off-site company conferences in which participants are required to produce several major revenue generating ideas (MRGs).

- *Improving project selection and becoming more discriminating in the projects undertaken – this translates into building in more effective Go/Kill decision points (tough gates) and moving towards portfolio management.*

SafDev like most companies has too many projects and not enough resources (Human and financial) to do them well. The result is that resources are often spread too thinly over too many projects, and there simply is not the time or ability to do many of the key activities in the new product project proficiently. In the *SafDev* environment this situation can either lead to the major cash flow problems, as discussed in Chapter 4 or to a situation where a product concept has not been adequately tested. At *SafDev*, this state of affairs is further exacerbated by the existing problems (See Chapter 4) in terms of managing the different project development teams and ensuring that key activities are executed properly and on time. In this regard, Cooper et al (2003) suggest the following possible solutions:

The first is to use a Strategic Buckets approach to portfolio management. That is, make conscious decisions on what proportion of your resources will be devoted to different types of projects. Then rank your projects in each category until out of resources in each bucket.

Second, use a stage-and-gate process even for smaller or supposedly less important projects, but make your process a flexible and scalable one. It is important to recognise that the Stage-Gate process is a risk management model; and that the higher the project's risk the closer one should adhere to the standard five-stage, five-gate process. On the other hand, when risk is low then detours are possible.

Third, it is important for companies to ensure that tough Go/Kill decisions are built into the new product process, so that all projects are carefully scrutinized and weak ones really killed. It must always be remembered that gates are not merely project review points, status reports or information updates; rather they are tough decision meetings, where the critical Go/Kill and prioritization decisions are made on projects. Thus the gates become the quality control check points in the process – ensuring that the right projects are done and the projects are done right.

Fourth, gates must have clear and visible criteria so that senior managers can make Go/Kill and prioritization decisions objectively. But most importantly these criteria must be effective – that is, they must be operational (easy to use), realistic (make use of available information) and, at the same time, discriminating (differentiate the good projects from the mediocre ones).

Fifth, Senior management must be engaged in the new product decision process – not micromanaging projects from afar, but acting as sponsors and resource providers for selected projects. One specific role for senior people is as gatekeepers – the people who tend the gates, make Go/Kill decisions on projects, and commit the needed resources.

Sixth, it is important to adopt an approach that can deal with the time, geographic and travel pressures that are often placed on the different members of the development team. This is particularly important within the *SafDev* context, due to the fact that the members of the team are all independent contractors who also do work for other organizations and because of the increased time and work pressure that has been placed on senior management with the rapid growth of the

company. Some of the approaches that could perhaps be adopted to deal with this problem include: virtual gates, self-managed gates and team recommendation.

Finally, the organization should adopt a Portfolio management system, through which it strives to ensure that only the highest value projects are selected; that the right balance of projects is achieved; that the right number of projects is selected; and that the projects selected are strategically aligned to the vision and objectives of the company.

5.3.1.2 Adapting the Traditional Stage-Gate

In recent years, in order to overcome some of the problems of the classic Stage-Gate model, as mentioned in Chapter 3, many companies have adopted a so-called “flexible-stage model”. The major difference between a Flexible-Stage model and the traditional Stage-Gate model is that the completion of certain activities in a stage can signal the start of activities in the next stage. In the *SafDev* case this could for instance be useful in triggering certain aspects of the feasibility stage even though the viability stage has not yet been fully completed.

The advantage is that information from those activities in the next stage can be used in the prior stage to make changes to the product concept or the design of the process. For example, *SafDev* could utilize the results of a limited marketing launch to assist the compilers of the feasibility in deciding which specific product to develop on a given property. In this way considerable time and effort could be saved by removing the need for developing alternative feasibilities.

Rather than waiting until the concept is approved with the assumed costs and specifications, a Flexible-Stage model could involve

actually attempting to market the product in order to test the assumptions. Based on this activity the entire concept and resultant feasibility may be changed.

The advantage of the Flexible-Stage model is in its ability to react to high levels of unpredictability in technological or market conditions. It does not have to wait until a stage is completed only to find out that significant changes are required for the next stage.

In deciding between a Stage-Gate and a Flexible-Stage model, one should consider the tradeoff between the following factors:

- The value of delaying major decisions about product concept and design until later project stages; and
- The costs of managing a less sequential product development process.

A possible approach that could be used in the *SafDev* context is to combine the Flexible-Stage approach with the concept of the traditional Stage-Gate as a risk management tool, as discussed above. In this way, the flexibility of each project can be judged on its own merit. The higher the risk of a project, the less flexibility is allowed. A good example would be to differentiate the between the development risk of a cluster development and a sectional title development. In a cluster development, the financial risk to the developer is much lower than it is in sectional title developments and, therefore, a more flexible approach might be feasible.

According to this proposed structure the traditional Stage-Gate approach at *SafDev* would be changed as follows (*Figure 5.4*):

- Gate Two, which follows the Viability Stage, will become the critical gate in determining the future path of the process. It is

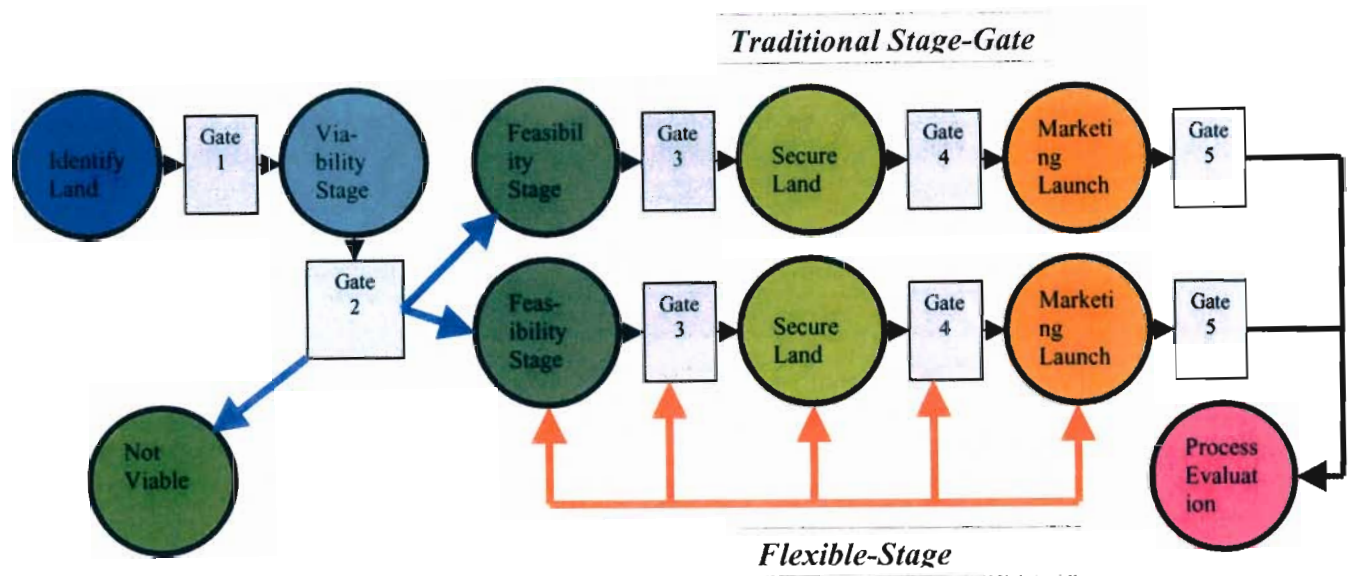
at this point that the company will have to evaluate the potential risk of a given project and decide whether to continue with the project; or whether to adopt a strict Stage-Gate approach or adopt the less stringent Flexible-Stage approach. Gate Two has been chosen for this important decision, because the Viability Stage should provide the company with sufficient information to at least decide whether a residential development is technically possible and what type of development project will be pursued if it is possible. As stated earlier, the type of project that is envisioned for a particular property contributes greatly to the risk profile of a given development project. In addition, the initial investigations that take place during this stage are mostly done at the risk of the respective professionals on the development team and therefore, the cost to the company is still minimal. Once the feasibility stage begins costs to company increase rapidly.

- If the decision is taken that the proposed development is a high risk development for the company, the traditional Stage-Gate approach (As discussed in Chapter 3) is adopted, in order to moderate the risks to the greatest possible extent. If it is believed that the risk is not too high, the more elastic Flexible-Stage approach will be used, because it allows for more integration between stages and for more experimentation within the process.
- The Flexible-Stage involves a number of opportunities, both formal and ad hoc, to feed information forward and backward between the different stages without Go/Kill gates strictly determining the flow of information or the pace and scheduling of work. A good example would be to feed information directly from the Viability Stage to the Secure Property Stage. If the viability is highly positive, the company can save

considerable time by using this information to negotiate an option or delayed payment agreement to secure the land, without first having to wait for the feasibility to be concluded as well. Conversely, the feedback of information from the Secure Property Stage can be used to influence the feasibility. For instance, if a more cost effective method of securing the property can be negotiated, this information can be fed back into the process in order to influence the feasibility figures. This is, however, only possible if work is being concurrently done on both securing the land and on completing the feasibility. This freedom to forward and rewind between stages is not limited to any particular stages. As *Figure 5.3* shows, this interaction and concurrent activity can take place between any of the respective stages or gates.

- It must, however, always be remembered that the Flexible-Stage is not a free-for-all, it has to be based on a solid set of design principles that guide the work in the different stages. Once again using the securing land example, it would not be wise to secure the land by purchasing it outright, until all of the possible risks have been addressed in the previous stages. These guidelines must be clearly defined and understood before any Flexible-Stage activities are begun.
- The final addition to the revised *SafDev* NPD process is the inclusion of a process evaluation phase at the end of the project. This serves two very important purposes. First, it allows the team and the company to objectively evaluate the process in order to identify those elements that need improvement, and second, it creates a permanent record that can be stored as part of the company's historic reference material.

Figure 5.3: Proposed Two-Stream NPD Process for SafDev



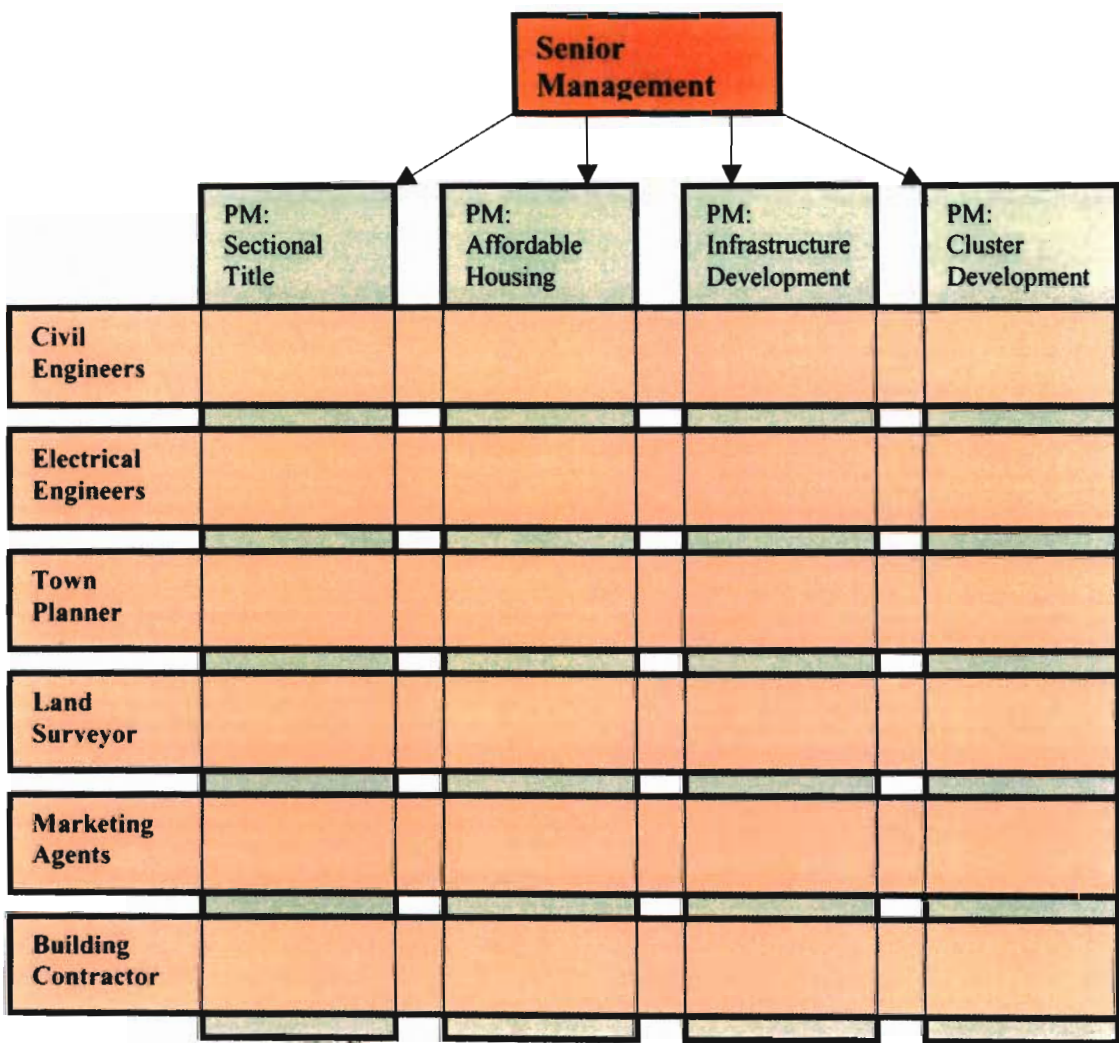
5.3.2 Project Teams

As discussed in Chapter 4, the efficient and effective management of project teams is one of the biggest challenges facing *SafDev* and the majority of other residential property developers. Due to the technical nature of residential development projects, each member of the professional team has clearly defined role to play. The problem, however, lies in ensuring that the tasks and responsibilities of the different members are dispensed with in such a way that they contribute to the overall goals, timelines and objectives of the project, and this is the responsibility of the PM.

The problem of finding and retaining experienced and knowledgeable PMs has to a large extent been exacerbated in recent years by the proliferation of development companies, which has drained the sector of high quality development PMs. As a result, *SafDev* has had to resort to appointing several PMs on a single project and in most cases this has resulted in

extreme difficulties in terms of clearly delineating responsibilities and in terms of managing internal communications.

Figure 5.4: Proposed Cross Functional Corporate Hierarchy for SafDev



In order to overcome these problems the following is recommended:

- *SafDev* should perhaps consider offering permanent positions to its PMs. In this way they can ensure the loyalty of the PMs, as well as taking control of their training and development needs. This also offers the added advantage of ensuring that the best PMs are retained for future projects. Although this would be contrary to *SafDev*’s stated approach of limiting financial risk by limiting overheads, the risks, as

organizational hierarchy in which PMs (Directors) are given responsibility for specific types of projects, whilst the professionals are used on a cross-functional basis (See **Figure 5.3**). In this way, the company can build specialized expertise, while at the same time keeping the innovative advantages of cross-functionality.

- Once the PMs have been appointed on a permanent basis, *SafDev* must take responsibility for ensuring that they are fully aware of the company's modus operandi and that they are fully versed in the requirements and implementation of a Stage-Gate process. Both of these goals can be achieved through a mixture of formal and informal training.
- *SafDev* should encourage a culture of innovation and continuous improvement by promoting a PM driven system that encourages *SafDev* employees as well as members of the development teams to contribute to innovation and improvement within the organisation. Once again the role of the PMs is vital, because not only should they serve as the entry points through which new ideas can be introduced into the NPD process, they should also take responsibility for ensuring that new ideas and suggestions are encouraged and that it becomes an inclusive process. From the project team point of view, the advantage lies in making the members feel like part of the organisation rather than simply being hired hands.

5.3.3 Senior Management Support

Due to the nature of the *SafDev* business model, senior management support and participation is never in doubt. The problem at *SafDev* rather lies in the ability of senior management to trust the people who have been appointed to perform certain tasks. Once again, the root cause of this situation is the shortage of dependable PMs in the industry. The *SafDev* senior management simply does not trust the PMs that it appoints to run its

projects and this causes undue delays in the NPD process, because they personally want to be involved in making every decision. This approach is perhaps commendable in that it provides proof of their level of commitment to the process, but in reality it is an approach that is simply not practical to use. In order to overcome this stumbling block, the following steps should perhaps be considered:

- If trustworthy PMs cannot be appointed a strict framework should be established which clearly delineates the delegated powers of each of the PMs and professional team members.
- Very specific guidelines should be established according to which Go/Kill decisions are made and delegated.
- As mentioned above, alternative arrangements/processes should be made/developed so that critical gate decisions are not held up by the unavailability of the senior management. In this regard, virtual gates and committee recommendations are two possible options.

5.3.4 Communication

Poor communications is undoubtedly the Achilles heel of the entire *SafDev* business model. Virtually every problem that is faced during the *SafDev* NPD process can be directly traced back to a lack of proper communications planning and implementation. This is the case both in terms of internal and external communications.

The simple solution to this problem is for *SafDev* to develop and adopt a Strategic Communications Plan, which addresses issues such as clearly defining the delegated powers of each member of the development team; clearly defining the communications channels and hierarchy within the organisation; clearly defining the content of externally communicated information; clearly identifying and defining information that is required from external sources, as well as the method of gathering this information;

and; clearly defining the information storage systems and processes within the company.

5.3.5 Learning from the Past

Learning from the past is the hallmark of any learning organisation. By capturing and storing the knowledge and experience of the past, organizations ensure that past mistakes are not repeated and that the combined knowledge and experience of the organisation is utilized to simplify current projects.

At present there is very little reliance upon past experience at *SafDev*. This is mostly due to the fact that senior managers are no longer involved in projects on a day to day basis; that there is no formal system in place for capturing and organizing past knowledge and; that PMs vary from project to project. The result of this situation is that many mistakes are repeated and that the proverbial wheel is often reinvented project after project.

In order to address this problem, *SafDev* should consider the following actions:

- The problem of PMs, as discussed on several occasions above, must be addressed as a matter of urgency. In this particular regard, tenured PMs would provide an invaluable source of past experience and knowledge from which the whole organisation could profit. PMs should be seen as both valuable employees and valuable reservoirs of knowledge and experience.
- The company must adopt a formal system through which the knowledge and experience of the past can be collected and stored for future use. On a practical level this could include a database on which the respective project documents and minutes are captured and stored; the continuous updating of the company's training manuals to reflect

the knowledge obtained and the lessons learnt from project to project and; regular formal and informal training sessions should be arranged so that knowledge and experience can be shared with internal and external sources; the development of a project master plan that is based on the knowledge and experience of the past.

- Greater interaction should be sought with other role players within the residential development industry. At present there is very little interaction between the different development companies and this has resulted in a situation where no one learns from the experiences of the others.

5.4 Conclusion

Success at *SafDev*, like most organizations, depends to a large extent on how well it manages its new product projects and pipeline. At present, *SafDev* receives a mixed report card. On certain levels it has performed exceedingly well, whilst at others it has performed less well. From a financial success point of view, there is no doubt that *SafDev* has been successful, both in terms of identifying the correct gaps in the market and in terms of providing products and services that are innovative enough to make a difference. By using Vähäkylä's model it, however, soon becomes evident that much of this success is based on the current favourable atmosphere in the market rather than the successful implementation of the Stage-Gate NPD process at *SafDev*. In a more difficult market environment *SafDev* might find it more difficult to succeed unless its NPD process is more clearly defined and all of the success criteria are in place.

With regards to project success, *SafDev* has developed and implemented an acceptable general framework for NPD, but it has not as yet paid enough attention to the different elements and details of the framework. Putting in place an effective new product process, such as Stage-Gate, is only a first step. As Vähäkylä's model shows successful NPD is not only about the adoption of a process, it is also about ensuring that all of the necessary peripheral success criteria are also in place and that there is a true commitment within the

organisation to implementing and evaluating the process. The more controlled the process becomes and the more strictly the criteria are adhered to the greater the chance of NPD success becomes. A single factor or oversight, such as misunderstanding the needs of the market, can easily destroy an entire project and cost the company millions.

The recipe for successful NPD does not, however, end here. Once the process has been put in place and the success criteria have been addressed the next step is to ensure that a culture of continuous improvement is also adopted with regards to the process and criteria. No process or criterion is ever complete or perfect; there is always another way in which both can be improved. There should be a constant commitment within the organisation to improve value by cutting costs, by cutting time and by improving quality. Delivering value is after all the core reason for NPD.

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