(2005 – 2010)

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DECLARATION

I, Caroline Chirata do hereby declare that this dissertation is the result of my own investigation and research, except to the extent indicated in the acknowledgements and references and by comments included in the body of the report, and that it has not been submitted in part or full for any other degree to any other university.

……………………………….……………………………………
Student’s Signature Date

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Supervisor’s Signature Date
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May the Almighty God bless you abundantly.
DEDICATION

This research is dedicated to my mentors Mr. and Mrs. Mukanhairi; my husband Dennis Chirata and my daughters Blessings and Samantha Chirata.
ABSTRACT

The universal conclusion from literature on innovation and competitiveness is that innovation results in competitiveness. Yet no matter how many innovation strategies a firm implement, if the firm does not deal with impediments to successful innovations, it can not enjoy competitiveness. This research is an assessment of the impact of innovation on firm competitiveness in the Milling industry in Zimbabwe. The research was centred on a single case study design of National Foods Limited. The objectives of this study included examining the link between innovation and competitiveness; determining whether competition is a powerful incentive for National Foods Limited to innovate, whilst at the same time assessing whether National Foods Limited has the appropriate conditions to utilise their innovations into competitiveness. The researcher also established the benefits that are brought about by innovations at National Foods Limited.

Pragmatic data was collected through face-to-face interviews with middle and senior management who hold strategic and operational positions in the organization. Respondents included nine middle managers; seven senior managers; six departmental heads; and three directors. In-depth information was gathered from the respondents through the use of unstructured questions. The researcher used a qualitative research philosophy. The gathered data was analysed through Data Displays in the form of charts and content analytic summary tables. The findings of the study were that, there is a strong link between National Foods Limited’s innovation and competitiveness. National Foods Limited failed to successfully enjoy the competitiveness that is supposed to be derived from innovation due to management’s failure to manage change and poor communication of innovation strategies, as well as failure to adequately budget for and fund innovations. Hindrances also played their part; these included critical skills flight; failure to recognize and reward new ideas and entrepreneurship; lack of management commitment and nonalignment of innovation to overall organizational strategy. Based on these findings, the recommendations of this study are that National Foods Limited management should negotiate with public policy makers for flexible and favourable policies. It is also recommended that National Foods Limited should manage change in the best possible way or even engage outside agents to help manage change; make adequate budget provisions and funding for innovations; and implement policies that enable retaining of critical skills.
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LIST OF ABBREVIATIONS

SIRDC  Scientific and Industrial Research and Development Centre
GMB  Grain Marketing Board
NF  National Foods
Ltd  Limited
EIS  Enterprise Innovation System
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<td><strong>ATM</strong></td>
<td>Automated Teller Machine</td>
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<tr>
<td><strong>LCD</strong></td>
<td>Liquid crystal display</td>
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<tr>
<td><strong>SUV</strong></td>
<td>Sport utility vehicle</td>
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<tr>
<td><strong>HP</strong></td>
<td>Hewlett Packard</td>
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<tr>
<td><strong>IBM</strong></td>
<td>International Business Machines</td>
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<tr>
<td><strong>PC</strong></td>
<td>Personal Computer</td>
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<tr>
<td><strong>GNP</strong></td>
<td>Gross National Product</td>
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<td><strong>EU</strong></td>
<td>European Union</td>
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<tr>
<td><strong>OECD</strong></td>
<td>Organisation for Economic Cooperation and Development</td>
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CHAPTER 1

1.0. INTRODUCTION

Innovation means many different things to many different people. The researcher is examining it from a value creation perspective in firms which engage in any of small to large improvements to any of their products, services, processes, technologies, or business models, in order to create business value. The important links between innovation and competitiveness have been the subject of an ongoing policy debate that has attracted considerable attention from both policymakers and academics. On the one hand, it is widely accepted that innovation is a fundamental component and driver of competitiveness in the modern economy. Accordingly there is considerable relatedness between the factors and conditions which affect innovative behaviour as well as performance and those factors that have a determination on the firms’ competitiveness (Easterly, 1997).

Innovations can be in the form of new products or services, or cost-reducing process improvements, or innovative business models and methods. The benefits of innovation occur in all aspects of the profit or loss statement. Thus, studies on the impact of innovations indicate that innovators push ancillary sales volume, accomplish price premiums and reduction in costs through improvements in processes. In addition to the financial benefits, innovation goes hand-in-hand with sustainable development initiatives, as both require progressive leadership and an appetite for change, combined with a tolerance of experimentation and some risk. Studies on the impact of innovation on firm competitiveness have been conducted in other parts of the world for companies such as Apple, Google, Samsung, Sony; 3M (Kotter, 1988), and McDonalds (Diebold, 1990). The main weakness in these studies is that they do not cover Zimbabwe, hence the present study which is aimed at evaluating the impact of innovation on firm competitiveness from a Zimbabwe perspective. It is against this background that the current investigation attempts to fill this research gap by assessing the extent to which innovation influences competitiveness through a case study of National Foods Limited over the period 2005 to 2010.
1.1. BACKGROUND TO THE STUDY

1.1.1. History of innovation in business

According to Blackwell and Eilon (1991), while innovation has existed as long as the species has, early innovations penetrated society and became established more slowly. For example, printing technology, various transportation innovations, and the use of gunpowder took centuries to reach most levels of society and become part of everyday life (Blackwell and Eilon, 1991). The penetration and acceptance of various innovations began to accelerate with the gradual collaboration and cooperation of science and assorted crafts and industries, especially in the 19th century. Nelson (2006) asserts that the alliance that exists between science and industry allowed scientists to create realistic, reproducible technologies, which are affordable to businesses. Because of this collaboration, innovation grew quickly.

Despite the partnership, however, science and businesses still remained separate entities. Researchers worked either independently or as members of companies that specialized in developing, producing, and marketing innovations during this period. Consequently, many of these innovations failed to make it to the market (Nelson, 2006).

Companies, however especially power, chemical, and communications companies began creating in-house research and development divisions early in the 20th century. In addition, they enhanced and marketed the innovations of others, breaking down the barrier between innovator and company. As a result, companies, not individuals, began controlling the patents to new inventions. Furthermore, teams of company researchers, not lone inventors, became the primary innovators (Kuhn, 1988).

1.1.2. Importance of innovation to the Zimbabwean Industry

Innovation is of paramount importance to the Zimbabwean Industry. Zimbabwe as a country, seeks entrance into globalised markets. Innovation is considered a key component to survival as competition fiercely develops. Factors like differentiation and value addition are key to commercial success due to fierce competition in the global market.
Based on this, the Government of Zimbabwe created SIRDC in 1993 through an act of Parliament. SIRDC was mandated to develop technologies for the Zimbabwean industry with a unique strategy hinged on crafting viable commercial applications and merchandise from the cradle to the grave. According to Dr. Robson Mafoti, SIRDC Chief Executive Officer (CEO), the two major reasons for innovation are the need to build and maintain a competitive advantage, with a notable impact on market position. The second reason is to provide new products, services and information.

The output of innovation and intellectual property is vital in the Zimbabwean organizations building their stockpile of intangible assets and improving existing products and services. The innovation drive has been largely due to globalization where organizational strategies have had to seek ways to ensure growth while maximizing shareholder value.

1.1.3. Importance of innovation to companies in general

Innovation is of paramount importance to companies for various reasons. The following points explain the importance of innovation in a company, throwing light on why a company has to innovate and what will happen if the company does not innovate:

- Companies need to innovate to harmonise with the advancing technology. Fast changes in technology demand that the products are more and more sophisticated.
- Evolving society needs advanced products. The customers demand the best possible things for the day and the latest products are in demand. Thus the factor “customer satisfaction” is vital and it relates to innovation.
- The company’s products and processes as well as services have to be more advanced than those of competitors, or else the company loses it all.
- Companies achieve superior corporate positioning and boosted market value as well as expeditious expansion in the company.
- If the company does not innovate, the customers stop buying the products, the sales volume decline, revenue plunges, price of stock plunges; shareholder returns also plunges, resulting in skills flight and ultimately the company crumple.
The same way that innovation is important globally so it is to the Milling Industry in Zimbabwe, National Foods included.

1.1.4. Importance of innovation to the Milling Industry

The grain milling industry was traditionally comprised of three large-scale producers which are National Foods Limited, Blue Ribbon Foods Limited and Victoria Foods. These three large scale producers were the big three in the milling industry. This resulted in the companies investing in innovativeness and research and development. The small-scale millers and grinding mills are the ones that competed with these big companies and as a result these big companies dictated the pace in the industry. As a result of liberalization, the Millers’ Association claimed that the market share of the large-scale millers declined from 70% in 1994 to 25% in 1998, implying that there was no scope for the Millers’ Association to unduly influence the selling price against the dictates of market forces (Sleuwaegen and Dehandschutter, 1986). The government had in certain instances cited the uniformity of prices of mealie meal produced by the three major millers as evidence to entrench its position that the millers were acting like a price-setting cartel. The millers in turn maintained that they all faced the same GMB selling price and faced similar costs of electricity, wages and salaries, interest on working capital and meal packing costs. They argued that 95% of their costs are common. The uniformity of their prices was therefore an outcome of the similarity of their cost structures. The same viability threat which beset the maize milling companies also haunted the flour millers who had to cope with increased input costs amid government reluctance to allow concomitant price adjustments. Since the onset of liberalization in 1991, the number of flour millers increased from three to seven. The flour millers were even in a worse position due to the fact that they were much more reliant on imported wheat than are the maize millers. Flour millers needed 400 000 tonnes of wheat per annum for flour production. Of this, only 65% was produced locally. This meant that when the local currency depreciated, wheat prices rose substantially (Charumbira and Sunde, 2010). Because of these constraints and uniform cost structures as well as the price controls imposed by government, it was difficult for the industry to pay particular attention to innovation in the form of processes or products.
1.1.5. Importance of innovation to National Foods Ltd

According to Skarzynski and Gibson (2008), innovation is of importance to organizations for various reasons. Thus innovation is of importance to National Foods Limited for the same reasons which are as follows: Thus the introduction of innovative products gives National Foods Limited temporary monopoly power, which allows for monopolistic pricing and hence higher profits until other firms can imitate the innovation. This is the case in PET food where National Foods Limited introduced new and improved PET Food which is almost a monopolistic product on the market. The benefits of innovation to National Foods Limited also include the cost reductions that they are enjoying on most of their products or brands as well as customer loyalty. This is the case with their mealie meal, thus Parlenter and Red Seal Roller Meal which are the best quality but supplied at lower prices than the competitors’ products. The ultimate outcome is that innovation provides National Foods Limited with a temporary positive boost to the price competitiveness.

Innovation is also of importance to National Foods Limited as they benefit through creative accumulation. Creative accumulation is typically associated with process innovation which increases the firms’ productive efficiency. The benefits of this development are reaped through cost savings, and through increasing the firms’ market share. This approach implies that innovations create an important difference between National Foods Limited as an innovating firm and its non-innovating opponents.

1.1.6. Establishment of National Foods

National Foods Limited was established in 1920. National Foods Limited is a diversified, Zimbabwe Stock Exchange listed conglomerate, which has grown to be one of the largest manufacturer and marketer of food products in Zimbabwe and the Southern African region. National Foods came up with a number of innovative products which they registered to acquire trademarks to protect their innovations. The four main trademarks of the organization which are considered as flagship brands are Gloria, Red Seal, NF Stockfeeds and Natpak which are easily recognizable on the Zimbabwean marketplace. Gloria is a brand that means the best baking
results, a history of tradition and consistently good quality. Red Seal is a brand on a wide range of products to suit every pocket and occasion. Red Seal is strong and consistently in touch with the consumer. A national Foods Stock feed is a separate division that manufactures and markets animal feeds and supplements. Natpak is the packaging division of National Foods Limited and is involved in the business of converting polymer into woven polypropylene products (http://www.natfood.co.zw, Accessed: 29th March, 2011).

The manufacturing plants and related processes are located strategically throughout Zimbabwe and are based on a quality system designed to guarantee supply of high quality and value added products. This is done in order to ensure that the Trademarks of National Foods Ltd retain the best customer perception and goodwill. The Group’s quality policy is to manufacture and market, at all times, brands that are competitive and satisfy customer expectations in line with their vision to be "The Supplier of Choice” (ibid).

National Foods’ focus is to enhance stakeholder value through the development and implementation of innovative, measurable and time bound strategies. Recently National Foods improved its Pet Food. Thus through innovativeness National Foods improved its range of Pet Foods. These included the Red Seal Dog Meal; the Bow Wow range and the Kenergy range. The Group has a vibrant corporate social investment programme. Through their network of depots, they undertake several community centered social responsibility activities especially designed to improve the quality of life of the underprivileged and the elderly. As they celebrate over 87 years in business, their commitment remains the pursuit and delivery of high quality, value added brands to consumers; in line with their mission: ‘To be the preferred supplier of quality branded products and services which satisfy the needs of our customers and consumers’. This is being achieved through innovativeness which is being enhanced by the trademarks that are in place (http://www.natfood.co.zw, Accessed: 29th March, 2011).

The history of National Foods Ltd is the history of milling in Zimbabwe. National Foods embodies more than 86 years of milling experience. Today the company provides the resources, technology and manpower necessary to feed millions of people. In addition to their maize milling operations they also market a wide range of food products including flour, sugar beans,
oat meal, rice and salt as well as a variety of pre-packed items, canned products and stock feeds. A sophisticated sorghum and barley malting plant provides malts for local brewers, whilst the oil plant supplies the market with the Red Seal and Home Pride brands of cooking oil. In addition to substantial supplies of basic foodstuffs, the company also supplies the donor community with toll milling services (http://www.natfood.co.zw, Accessed: 30th March, 2011).

To maintain its diverse operations, National Foods has in place the necessary support mechanism including workshops, bakery schools, laboratories, clinics, technical consultants and a comprehensive human resources division. The changes in the market place dictated a cultural shift from a production driven to a marketing driven operation and this is supported by a series of professional development programmes, which have equipped both management and staff with the necessary skills to tackle any business challenges which may lie ahead and to adapt to change which is the only constant in today's highly competitive environment (http://www.natfood.co.zw, Accessed: 30th March, 2011).

1.1.7. Relative market focus of National Foods

With forebears dating as far back as 1908 the history of National Foods is the History of commercial milling in Zimbabwe and today the Company provides the resources, the technology and the necessary manpower to feed millions of people and animals in the country and throughout the region. In addition to its maize milling operations in Harare, Bulawayo, Mutare, Masvingo and Gweru, flour milling operations in Harare, Bulawayo, Oil Processing Sites in Harare and Bulawayo, National Foods produces and markets a wider range of food products including vegetable oil and a variety of pre-packed items such as rice, salt, sorghum, beans and popcorn. Its Stockfeeds Division provides the necessary feeds and technology back-up for poultry, cattle, goats, pigs and many other animal species. Sophisticated malting provides sorghum malt for the manufacture of nutritional home brews (Mahewu) whilst Natpak Bags, the packaging division of National Foods Limited is a major producer of polypropylene bags and bailing twine. Listed on the Zimbabwe Stock Exchange, National Foods actively pursues export opportunities and agricultural seasons permitting many of its products help to meet the increasing dietary needs of Zimbabwe's neighbours (Charumbira and Sunde, 2010).
The guiding principle of National Foods Limited is that through innovativeness, quality is built into a product, and not just tested into a finished product. Therefore, the assurance is that the product not only meets the final specifications, but that it has been made by the same procedures under similar settings every time it is made. This involves controlling the quality of the facility and its systems, controlling the quality of the starting materials, controlling the quality of production at all stages, controlling the quality of the testing of the product, controlling the identity of materials by adequate labeling and segregation, controlling the quality of materials and product by adequate storage (Charumbira and Sunde, 2010).

1.1.8. National Foods Corporate Structure

![National Foods Corporate Structure Diagram](http://www.natfood.co.zw)

Source: [http://www.natfood.co.zw](http://www.natfood.co.zw), Accessed: 30th March, 2011)
1.1.9. Challenges being faced by National Foods

Despite National Foods maintaining its diverse operations and exclusive brands through innovativeness and having in place the necessary support mechanism including workshops, bakery schools, laboratories, clinics, technical consultants and a comprehensive human resources division, the organization is facing problems that actually forced them to close the Bulawayo National Foods Limited stock feed plant and relocating it to Harare. The reason for the closure and relocation of the plant are the financial, logistical and operational challenges, which have been stated as reasons for the relocation (http://www.allafrica.com, Accessed; 28th of March 2011).

Other challenges that are being faced by National Foods Limited include globalization of food trade, development of new food production and processing technologies that are outwitting National Foods’ innovations and technology as well as emergence of new food related diseases; which have led to food safety becoming a public health problem of concern worldwide. The emergence of new technologies for food production and processing such as food irradiation and use of genetically modified organisms for food, also pose challenges for National Foods Limited which happen to produce its products using the conventional traditional methods that are considered to be safe for the consumers and the environment (http://www.allafrica.com, Accessed; 28th of March 2011).

1.2. STATEMENT OF THE PROBLEM

National Foods Limited is maintaining its diverse operations and exclusive brands through innovativeness and having in place the necessary support mechanism including workshops, bakery schools, laboratories, clinics, technical consultants and a comprehensive human resources division. However, contrary to literature, National Foods seem not to be benefiting much from innovation in terms of competitiveness. They are being out competed by imported products that are flooding the Zimbabwean market. National Foods did not handle their innovation in line with literature. According to Bessant and Tidd (2007), innovative companies develop a
systematic innovation capability, which assures them of a series of innovations that deliver business value.

1.3 RESEARCH OBJECTIVES
The study will seek to
i. Examine the link between innovation and competitiveness.
ii. To establish the benefits that are brought about by innovation at National Foods limited.
iii. Determine whether competition is a powerful incentive for National Foods Limited to innovate and acquire innovation based competitive advantage?
iv. Determine whether National Foods Limited has the appropriate conditions to utilize their innovations into competitiveness.

v. To provide recommendations on how innovation can be effectively utilized to enhance competitiveness.

1.4. RESEARCH QUESTIONS
i. Is there a link between innovation and competitiveness?
ii. What benefits are brought about by innovation at National Foods Ltd?

iii. To what extent is competition an incentive for National Foods Limited to innovate and acquire innovation based competitive advantage?
iv. To what extend does National Foods Limited has the appropriate conditions to utilize their innovations into competitiveness?

v. In what ways can innovation be effectively utilized to enhance competitiveness?

1.5. RESEARCH PROPOSITION
National Foods has fully utilized their innovation to facilitate competitiveness.

1.6. JUSTIFICATION OF RESEARCH
The issue of innovation is an important area which needs the Zimbabwean industry to appreciate fully, hence this research. It is hoped that after this research organizations would be encouraged to innovate and enhance competitiveness and hope customers would benefit from good quality
products. With innovations in industries customers would have better products and the Academia would get new information coming out to the business environment of Zimbabwe and benefit the academia. Since this will be the first study to be undertaken in the country in the area of innovation and its impact on competitiveness, the country will benefit through contribution of information to the universal understanding of the subject area from the Zimbabwean perspectives.

This research will help the following stakeholders in various ways:

The researcher is going to benefit greatly. It will help her to have a better understanding of innovation and its impact on competitiveness. This research also enables the researcher to identify problems or shortcomings of innovation when it comes to issues of competitiveness. As a result, the researcher may come up with possible solutions and recommendations. The case study organization will get to realize the contribution of innovation to the competitiveness of the organization. It will help National Foods Ltd to realize how they can utilize innovation in enhancing competitiveness. National Foods would also realize how they can utilize assets in innovation to benefit the company. Other companies also benefit as they would be encouraged to innovate and secure trademarks on their innovations to enhance competitiveness. Thus other companies can learn how they can capitalize on innovation.

This research will go a long way in assisting future researchers or academia. On the Zimbabwean situation, the academia can actually benefit. Through this process of research the academia will get better knowledge on innovativeness and competitiveness in Zimbabwe. Thus this research will be literature for future researchers who can be guided in their bid to add value to the area of innovation and their likely impact on competitiveness.

1.7. DELIMITATION OF STUDY (SCOPE OF STUDY)

The research will be based on a case study of the National Foods Limited in Harare which is the head office. This is because the Head Office is where senior management who deal with strategic issues of the organisation and who have knowledge of innovation and competitiveness issues of the organisation are based. The scope of the research is limited to National Foods Limited’s four
trademarks, Gloria; Red Seal; Stock Feeds; and Natpak, and how innovation affects the firm’s competitiveness.

1.8. LIMITATIONS OF STUDY
The researcher faced the following problems:
- Lack of cooperation from some respondents. Those who were supposed to provide information were reluctant to do so. However the researcher managed to get more information through unstructured interviews.

1.9. STRUCTURE OF RESEARCH

Chapter 1.0
This chapter covers the prologue of the research. The chapter also gives a backdrop of the study, the statement of the problem and the background of the organisation being used as the case study. The objectives and justifications of the research are also highlighted in this chapter.

Chapter 2.0
This chapter focuses on the literature review. It highlights some of the work that has been carried out by other authorities and the philosophy on the subject matter. In this chapter the researcher explores ideas, opinions and concepts of previous authorities who contributed towards this research.

Chapter 3.0
This chapter outlines the methodology used in this study. It summarises the analytical framework of the research design selected, provides justification for a single case study approach, the preparation for data collection, the main sources of data, and the data collection process and data analysis.

Chapter 4.0
This chapter looks at data analysis and discusses the findings. The chapter applies the theoretical framework from Chapter 2 to the case study, and shows how the selected theory explains the
results obtained from case study. Within this chapter, the posed research questions in chapter 1 have been answered and the findings from the case study are discussed.

Chapter 5
This chapter concludes the research and provides recommendations.

1.10. CHAPTER SUMMARY
This chapter provided background to this study, defined the problem, spelt out the objectives of the study. It has also provided the target population, limitations and delimitations of the study. The next chapter (Literature Review) focuses on the information sources and the information provided by these sources which was of use to the researcher.
CHAPTER 2

LITERATURE REVIEW

2.0. INTRODUCTION

This review covers a wide range of issues related to innovation and the impact of innovation on competitiveness. In this chapter the researcher looks at the definitions of innovation and competitiveness, describes the different types of innovation, and also studies both the historical and recent literature on innovation and competitiveness, particular attention being paid to the link between innovation and competitiveness. The impact of innovation on competitiveness, thus linking innovation to competitiveness as well as sources of innovation and failure of innovation are also taken into consideration in this chapter. To determine whether the strategies of National Foods leads to innovativeness or not it is essential to study the factors that contribute to innovativeness. At the same time determining whether the innovation strategies of National Foods Limited leads to competitiveness. These factors are therefore outlined in this chapter. The appropriate conditions for utilisation of innovation into competitiveness are described in the chapter as well.

2.1. DEFINITIONS

i. Competitiveness

*Competitiveness* is a comparative concept of the ability and performance of a firm, sub-sector or country to sell and supply goods and or services in a given market. Although widely used in economics and business management, the usefulness of the concept, particularly in the context of national competitiveness, is vigorously disputed by economists, such as Paul Krugman. The term may also be applied to markets, where it is used to refer to the extent to which the market structure may be regarded as perfectly competitive. This usage has nothing to do with the extent to which individual firms are 'competitive' (Krugman, 1994).
**Firm competitiveness**

Empirical observation confirms that resources such as capital, labor, technology and talent tend to concentrate geographically (Easterly and Levine 2002). This result reflects the fact that firms are embedded in inter-firm relationships with networks of suppliers, buyers and even competitors that help them to gain competitive advantages in the sale of its products and services. While arms-length market relationships do provide these benefits, at times there are externalities that arise from linkages among firms in a geographic area or in a specific industry (textiles, leather goods, silicon chips) that cannot be captured or fostered by markets alone. The processes of “clusterization,” the creation of “value chains,” or “industrial districts” are models that highlight the advantages of networks. Within capitalist economic systems, the drive of enterprises is to maintain and improve their own competitiveness; this practically pertains to business sectors (Edquist, 1997).

ii. **Innovation**

**Innovation** comes from the Latin word *innovationem*, noun of action from *innovare*. This means to make something new. According to Luecke (2003), innovation is about more than just developing new products, “it is about formulating business processes and building completely novel markets that meet unexploited customer needs … and it’s about selecting and executing the right ideas and bringing them to market in record time”. Companies that have strived for this, and achieved this, include IBM, Proctor and Gamble, Apple, Google, Toyota, and 3M. These companies concentrate on expounding and originating new value. This is actually a crucial part of their short and long term strategy (Freeman, 1997).

Innovation has been variously defined as:

- “The commercial or industrial application of something new, a new product, process, or method of production; a new market or sources of supply; a new form of commercial business or financial organisation (Schumpeter, 1934).

Expert Beswick (2010) defines innovation as: “The successful exploitation of an idea that adds value to the customer and commercial return for the creator".
Luecke and Katz (2003) defined innovation on an organizational perspective as the successful introduction of a new thing or method. Thus innovation was defined as the embodiment, combination, or synthesis of knowledge in original, relevant, valued new products, processes, or services.

Baregheh et al. (2009), in their content analysis, which they carried out on the term innovation within the organizational context, defines innovation as the multi-stage process whereby organizations transform ideas into new or improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace.

Schumpeter (1939) defined innovation as the setting up of a new production function. This covers the case of a new commodity as well as those of a new form of organisation such as a merger, and the opening up of new markets. Schumpeter (1939), argues that “recalling that production in the economic sense is nothing but combining productive services, we may express the same thing by saying that innovation combines factors in a new way, or that it contributes in carrying out new combinations”. Lundvall (1992) and Elam (1992) use “new combinations” as a definition of innovation. Nevertheless neither of these authors refers to innovations as the setting up of a new production function. In its various forms, Schumpeter’s definition is extremely wide, when compared to the innovation concept used by Nelson and Rosenberg (1993). Nelson and Rosenberg (1993), consider process as well as product innovations as technical innovations.

Consequently Schumpeter (1943) explicitly mentions new commodities, which can be referred to as new product technologies or product innovations. He also specifically mentions new forms of organizations which he somewhat surprisingly exemplifies with a merger. However he does not explicitly define “form of organization”. New process technologies are also considered to be innovations by Schumpeter (1943). As a matter of fact, the setting up of a new production function is an extremely wide conception and actually covers many important changes of economic significance, including technological and organizational process innovations as well as product innovations.

Nelson and Rosenberg (1993)’s concept of innovation is very wide. They state that they interpret innovation rather broadly, to encompass the process by which firms master and get into practice
product designs and manufacturing processes that are new to them, whether or not they are new to the universe, or even to the nation. Thus, their innovation concept includes not only the first introduction of a technology, but also its diffusion.

In the same way as Nelson and Rosenberg (1993)’s concept of innovation, the technological systems’ approach of Carlsson and Stankiewicz (1995) focuses mainly upon technologies, their generation, diffusion and utilization. In technological innovation, Carlsson(1995), however include both know–how or software and artifacts or hardware. Products and process technologies are also included in the Carlsson and Stankiewicz(1934) notion of technology. Therefore their innovation concept is similar to that of Nelson and Rosenberg (1993).

Lundvall(1992) deviates here in mentioning “new forms of organizations and institutional innovations”, in addition to technological, process and product innovations. However, he does not specify his concept of innovation explicitly and systematically. It could be argued that he is more faithful to Schumpeter in understanding the concept of innovation in a very broad sense. However there are difficulties with Lundvall’s approach, in that, he does not systematically deal with non–technological kinds of innovations, that is, he focuses mainly on technological innovations and there is some confusion about the distinction he makes between different kinds of innovation.

Tidd et al (1997) alluded that the original implication of innovation refers to invention rather than to innovation. Khilji et al (2006) are of the contention that, to get from invention to innovation, it takes more than just a good idea, but an integrated approach. Tidd et al (1997) in support of Khilji et al (2006)’s differentiation of innovation and invention illustrated with an example of the introduction of the modern telegraph by Morse, whereby Morse has been widely credited for it, though he did not invent the telegraph, but only invented the code. Morse just envisioned the possibilities of the modern telegraph, and he realized spreading of the new concept of long distance communication. Thus Morse turned the invention of the modern telegraph into an innovation.
Innovation is more than just an invention. It goes further than that. This is reflected in the definitions of an innovation. Most of the definitions of innovations refer to it as the application of something new. Sundbo (1998) and Satchell(1998) emphasized additional aspects to the definition of innovation. They respectively talk about the renewal and conversion of an idea into an outcome. They also stressed the stirring up that is brought about by innovation. Satchell (1998) talks about continuous rearrangement, stressing much on the incremental aspect and financial return, at the same time emphasizing the economic aspect. Tidd et al (1997) focused more on turning an opportunity into new ideas, thus suggesting the role of choice and focus.

Tidd et al(1997); Satchel(1998) and Sundbo(1998)’s approaches to innovation have some similarities with the more economic and well known view of Schumpeter(1943) , which stressed on combining elements of creation and destruction(McCraw, 2007). Maguire et al (1994)’s definition focused mostly on organizational processes, including such concepts as marketing. Zaltman et al (1973), Rogers (1995) focused on the issue of “perceived as new”, whereas, West and Farr (1990) came up with a technical definition of innovation.
2.2. INNOVATIVENESS

2.2.1. Process of innovation

According to Twiss and Weinshall (2005), the innovation process starts with the constant bombardment of the manager with information arising from various sources. This adds to his existing knowledge. Ideas would then be sparked off consciously and subconsciously from the information. Some of the responses would be responses to current problems and some will not

Figure 2.1: Main features of the innovation process

Source: Twiss and Weinshall (2005)
be. This is usually due to the fact that what appears to be a problem may be merely a symptom of some deeper lying cause. This makes it necessary to redefine the problem. The manager may be committed to solving problems through innovation, but there can be organizational barriers to innovation that can hinder progress or implementation of the innovation.

According to Nelson (1993) as quoted in Shavinina (2003), innovative process is defined by the correlation of its elements of study. Inventions may actually be measured and the Research and Development process may be studied and defined. Science and invention may be linked, sources of innovation elaborated upon; organization factors investigated, the evolution of technology studied; diffusion of innovation measured and learning phenomena exposed.

Inventions are viewed as complementary; cumulative and leap-frogging (Rosenberg, 1982).

(a) Complementary invention
Complementary invention is the invention of a new process or product that is related to an existing technology. An example is the invention of the remote control to support radio or television – human interaction.

(b) Cumulative inventions
Cumulative inventions are those that build upon or “tweak” an existing invention, such as a product improvement like the pouring spout of juice containers.

(c) Leap frog invention
Leap frog invention refers to a radical change away from the technologies and echoes discontinuity in markets.

Gallouj (2002) argues that in understanding the process of innovation, one must understand the concept of innovation “imperative” as a key driver. Managers in a competitive environment are driven to success, both individually and organizationally. Thus in order to achieve organization success, the manager must do more than develop; implement and approve innovation.
Managers are thus compelled to constantly innovate to attain success, driving the organization to higher levels of innovation diffusion. Most models of innovation are based on three basic ideas as alluded to by Drejer (2002) as follows:

- First, organisation can act to create or choose their environment.
- Secondly management’s strategic choices shape the organisation’s structure and processes.
- Thirdly, once chosen, the structure and processes constrain strategy.

Drejer’s three basic ideas are an interesting insight into innovation models.

2.2.2. Innovation and Creativity

Innovation classically involves creativity, but is not identical to creativity. Innovation involves acting on the creative ideas to make some specific and substantial difference in the domain in which the innovation occurs. Amabile et al. (1996) reiterated that all innovation begins with creative ideas. They defined innovation as the successful implementation of creative ideas within an organization. Based on this view, creativity by individuals and teams is considered as a starting point for innovation.

Something more than the generation of a creative idea or insight is required for the occurring of innovation. This includes putting into action insight so as to make a genuine difference. This then results in, for example, new or altered business processes within the organization, or changes in the products and services provided. Thus innovation is a management process like any other business functions that requires specific tools; rules, and discipline (Amabile et al. 1988).

Innovation is stirred from the introduction of specific novel and useful ideas to the general organizational processes and procedures for generating, considering, and acting on such insights leading to momentous organizational improvements in terms of improved or new business products, services, or internal processes. Thus through these varieties of viewpoints, creativity is
typically seen as the basis for innovation, and innovation as the successful implementation of creative ideas within an organization (Twiss et al, 2006).

The term 'innovation' is however used by many authors somewhat interchangeably with the term 'creativity' when discussing individual and organizational creative activity (Lestienne, 1993).

2.2.3. Economic conceptions of innovation

Schumpeter (1934) defined economic innovation as the introduction of a new good, which is one with which consumers are not yet familiar or of a new quality of a good. He further defined economic innovation as follows:

1. The introduction of a new method of production, which need by no means be founded upon a discovery scientifically new, and can also exist in a new way of handling a commodity commercially.
2. The opening of a new market, which is a market into which the particular branch of manufacture of the country in question has not previously entered, whether or not this market has existed before.
3. The conquest of a new source of supply of raw materials or half-manufactured goods, again irrespective of whether this source already exists or whether it has first to be created.
4. The carrying out of the new organization of any industry, like the creation of a monopoly position (for example through trustification) or the breaking up of a monopoly position

Inventive companies generally match up with customers looking for inventive solutions, and prepared to pay supreme rates for such innovations. These innovative companies frequently work with their supply chain partners to extend the sphere of their innovation efforts over a broader asset base. They regularly practise various forms of open innovation, implying that they work collaboratively with a range of partners, with which they can achieve win-win innovation outcomes. Innovations take many forms which include new products or services, or cost-reducing process improvements, or innovative business models and methods (Katz, 1988).
The benefits of innovation occur in all aspects of the profit and loss statement. Innovators drive additional sales volume and achieve price premiums and reduce costs through improvements in processes. In addition to the financial benefits, innovation goes hand-in-hand with sustainable development initiatives, as both require progressive leadership and an appetite for change, combined with a tolerance of experimentation and some risk (Hamel, 1994).

2.2.4. Enterprise Innovation System

Enterprise Innovation System (EIS) is a theory that was developed by academics which is a “set of conditions, rules, processes and techniques in all firm related activities. Innovators rely on the set of conditions; rules; processes and techniques in order to implement critical change on factors and conditions of production, usually by a means of technical invention, management discovery, market opportunity and commercial success” (Goffin and Mitchell, 2005). The Enterprise Innovation System theory is exceptionally aimed at and applied to logistics companies. According to Goffin and Mitchell (2005), “EIS is constituted of six elements which are as follows:

(a) Strategic innovation,
(b) organizational innovation,
(c) cultural innovation,
(d) products innovation,
(e) process innovation, and
(f) Marketing innovation”.

Innovation is not a single function, but instead is a network which interacts with all value chain activities. The various parts of the organisation need to network and provide feedback, in order to buttress and foster innovation. An example is logistics services and product innovation may depend on other innovation elements to achieve output and benefits, and marketing measures always alter according to the modifications or extensions of the consumers’ needs (Quinn, 1985).

EIS is a framework under which logistics firms can assess their processes according to best practices. The EIS avoids more unnecessary failures through focusing on the six EIS elements,
than if they were focusing on single elements of innovation in isolation. Moreover in the process of innovation, managers should aim to achieve a deep insight into the organisation’s resources, capabilities, and potentially uncertain environment. “The implementation process of innovation system and achievement of organizational goals is determined by whether the resources and capabilities within the environmental context can be managed effectively and efficiently (Goffin and Mitchell, 2005). Goffin and Mitchell (2005) strongly supported the idea of innovation being a broad strategy, requiring a firm-wide systemic approach.

Skarzynski and Gibson (2008) believe that assembling the right sorts of insights to provoke business breakthrough is the key to creating and fostering innovation within an organisation rather than depending on increasing personal creativity. They believe that great innovators are able to uncover new opportunities by viewing things from four perspectives which are as follows:

(a) challenging orthodoxies,
(b) harnessing discontinuities,
(c) Leveraging competencies and strategic assets, and
(d) Understanding unarticulated needs. An example is that of IKEA which challenged orthodoxies when it internally questioned why home furniture needed to be delivered custom made and already fully assembled. Considering the constraints in existing products, service or processes, or tradeoffs and contradictions acting in the world is another way to approach the creativity aspects of innovation, thus the invention spark.

From a business perspective, there is a massive opportunity for those who participate in winning new technologies and products or services existing in and around discontinuities, and a grave threat to those who try to overly persist with the old. Such discontinuities, whether technological such as the internet, social such as consumers caring greatly about the ethics and sustainability practices of businesses they buy from, environmental such as consumers caring about the pollution and work conditions in factories or in markets, or regulatory regimes, cannot be ignored. In successful business they are not just a matter of correctly reacting to them, but rather being on front of the curve of change and profiting from that front position(Pearson, 1988).
Innovation requires Proactive approaches to customer needs, technical matters and internal business systems and culture is required in innovation (Sundbo, 1998a).

2.2.5. Sources of innovation

There are several sources of innovation. One of the sources of innovation is the linear model of innovation. According to Rogers (1995), the linear model of innovation is an early model of innovation that suggests technical change happens in a linear fashion from Invention to Innovation to Diffusion as illustrated below:

![Figure 2.2: Linear Model of Innovation](source: Rogers (1995))

The linear model gives priority to scientific research as the basis of innovation, and plays down the role of later players in the innovation process. Technology push model and market pull model are the two versions of the linear model of innovation. In the period 1950s-Mid-1960s the industrial innovation process was generally perceived as a linear progression from scientific discovery, through technological development in firms, to the marketplace (Rothwell, 1994).

The traditionally recognized source of innovation is manufacturer innovation. This is whereby an agent who can be a person or business innovates in order to sell the innovation. End-user innovation is another source of innovation which is only now becoming widely recognized. This is where an agent who can be a person or company develops an innovation for their own personal or in-house use because existing products do not meet their needs. End-user innovation was identified as the most important and critical (Von Hippel, 1988).

Engelberger (2005) says that innovations require only three things which are as follows:

- A recognized need,
• Competent people with relevant technology, and
• Financial support.

The achievement of innovation by businesses is achieved in many ways. Much attention is given to formal research and development for "breakthrough innovations." However, innovations may be developed by less formal on-the-job modifications of practice, through exchange and combination of professional experience and by many other routes. More fundamental and ultramodern innovations tend to emerge from Research and Development, whereas more incremental innovations may emerge from practice but there are many exceptions to each of these trends. Accelerated radical innovation is another catchphrase topping radical innovation expressing the target to move things quicker than by relying on the ideas flowing in from inventors (Farr and Ford, 1990).

Users such as customers who buy products or use services are an important aspect in innovation. Firms may adopt the user centred approach whereby users would be incorporated into focus groups or work closely with so called lead users, thus the lead user approach or users might adapt their products themselves. In terms of the user innovation, a great deal of innovation is done by those actually implementing and using technologies and products as part of their normal activities. Occasionally user-innovators may become entrepreneurs, selling their product, they may choose to trade their innovation in exchange for other innovations, or they may be adopted by their suppliers and reinvent their social meaning (Tushman and O’Reilly, 1997).

The issue of whether innovation is mainly supply-pushed thus based on new technological possibilities or demand-led, thus based on social needs and market requirements has been a hotly debated topic. Likewise, what exactly drives innovation in organizations and economies remains an open question (Christensen, 1997).

2.3. CLASSIFYING THE CONCEPTS OF INNOVATION

Carayannis (2001) proposed an approach to classifying and subdividing the concepts of innovation along four fundamental dimensions which are as follows:
The process of innovation. Thus the way in which the innovation is developed; diffused and adopted.

ii. The content of innovation. Thus the specific technical or social nature of the innovation itself.

iii. The context of innovation. Thus the environment in which the innovation emerges and the effect of that environment on the innovation.

iv. The impact of innovation. The social and technological change which results from the completion of the innovation process.

Using these four dimensions of innovation, deep probing into the social implications of both disruptive and discontinuous innovation can be done. This in turn facilitates the integration of innovation management concepts with those of the organizational learning and knowledge management. In putting these elements into perspective, one needs to bear in mind some key creativity and innovation drivers and qualifiers which are as follows:

i. Context.
ii. Process
iii. Content
iv. Impact

For each of the above creativity and innovation drivers and qualifiers, there are specific questions that are asked, which are as follows:

Table 2.1: Creativity and innovation drivers and qualifiers

<table>
<thead>
<tr>
<th>Innovation / creativity drivers and qualifiers</th>
<th>Questions asked</th>
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</thead>
<tbody>
<tr>
<td>Context</td>
<td>In what context do all the above occur?</td>
</tr>
<tr>
<td>Process</td>
<td>What is the process by which all of the above are realized?</td>
</tr>
<tr>
<td>Content</td>
<td>What is the content of the above in terms of reaction on the others?</td>
</tr>
<tr>
<td>Impact</td>
<td>What is the impact of each of the above on the others?</td>
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</table>

Source: Carayannis (2001: 56)
All of these attributes need to be considered at all levels. This includes the firm; industry; national and global levels. What an organization invents determines the content of the innovation. However commercialization is a necessary but not sufficient condition for innovation (D’Aveni, 1994).

Creativity and competition may be exogenous factors to competitiveness, but consolidation can actually breed smugness (complacency). Disruptive technologies can actually renew competitiveness. Nevertheless, excessive rivalry may sap competitiveness. This leads to the *Acceleration Trap* (Von Braun, 1997) and the *Differentiation Trap* (Christensen, 1997).

These are actually situations of increasingly shorter and unsustainable product cycles and spiraling research and development costs with shrinking profit margins and market shares. This is due to excessive competition and declining competitiveness which is referred to as hyper-rivalry in the private sector (Quinn, 1985).

In the Acceleration and Differentiation trap situations, changes takes place so fast, such that firms often fail to benefit fully from it. The learning curves of the firms are not steep enough. Firms actually end up using resources inefficiently, thereby undermining their market position by engaging in price wars or frivolous innovation races (Shavinina, 2003).

The firms can as well find themselves trapped in a vicious spiral of increasing competition and declining competitiveness, such that they end up rendering their market niches increasingly hard to sustain.
Figure 2.3: Competitiveness versus competition trade offs
2.4. TYPES OF INNOVATION

2.4.1. Common frameworks and typologies for characterising innovation

According to Tidd et al (1997), innovation may be generally categorized as product; process or administrative.


Still others view innovation as product – process – radical – technological (Cooper, 1998). A further view of classifying types of innovation, characterizes innovation by decision systems (Rogers, 1995). This method of classifying innovation relies on the principle that, adoption of innovation may be influenced by both individuals and entire social systems.

According to Christensen (1997), as quoted in Shavinina (2003), there is also a distinction between sustaining and disruptive innovations, as well as continuous and discontinuous innovations.

i. Discontinuous innovation

Discontinuous innovation is often described as technological breakthroughs that help companies rewrite industry rules or create entirely new industries. Very few distinctions were made within the concept of discontinuity, not mentioning how to identify these radical innovations (Tushman and O’ Reilly, 1997).

Tushman and O’Reilly (1997) argue that discontinuous innovation involves breaking with the past to create new technologies; policies and organizational “S curves”. This results in significant leaps in the value delivery to customers.
Similarly Christensen; Hamel and Prahalad and Utterback describe discontinuous innovation as involving disruptive technologies; discontinuities or radical innovations that permit entire industries and markets to emerge; transform or disappear (Sundbo et al, 2002).

For the corporate strategist, the big question that remains is how to actually structure opportunity identification so it becomes a rational process that yields breakthroughs reliably as compared to waiting for opportunities to arise serendipitously (Sundbo, 2001).

ii. Administrative innovation

Administrative innovation refers to change in the characteristics of organizational or institutional elements. Examples of administrative innovations include changes in policy; organizational structure or resource allocation.

iii. Technological innovation

Using regional differences to classify innovation is a very narrow view, usually reserved to a specific technology innovation comparison. One of the specific drawbacks with this method is assessment of the regional nature of an innovation. An example is, in the case of research and development measured by the number of patents, the region of patent invention may differ from the milieu of registration especially in the case of multinational corporations.

A common framework distinguishing four generic types of technological innovation is produced through integration of numerous past studies on technological innovation, especially those studies by Abernathy; Anderson; Clark; Henderson; Tushman and Utterback. The generic types of technological innovation are as follows:

- Incremental innovation
- Generational innovation
- Radical innovation and
- Architectural innovation
(a) **Incremental innovation**

Incremental innovations exploit the potential of established designing and often reinforce the dominance of established firms. The existing functional capabilities of a technology are actually improved by means of small scale improvements in the technology’s value adding attributes such as performance; safety; cost and quality.

(b) **Generational innovation or next generation technology innovation**

Generational innovations are incremental innovations that lead to the creation of a new but not radically different system.

(c) **Radical innovation**

Radical innovations introduce new concepts that depart significantly from past practices and help create products or processes based on a different set of engineering or scientific principles and often open up entirely new markets and potential applicants. Radical innovation actually provides a brand new functional capability which is a discontinuity in the then current technological capabilities.

(d) **Architectural innovation**

Architectural innovation serves to extend the radical incremental classification of innovation and introduce the notion of changes in the way in which the components of a product or system are linked together.

2.4.2. **Evolutionary and Revolutionary innovation**

According to Eldredge (1999), the distinction between evolutionary and revolutionary innovation is another common distinction.

**Evolutionary innovation**

This is where technological change appears to follow a process of “natural selection” with technical improvements resulting from the survival of the fittest.
**Revolutionary innovation**

With revolutionary innovation, the change appears as a break or non-contiguous change in the course of the technology.

The two approaches to envisioning innovation, thus revolutionary and evolutionary are not mutually exclusive, nonetheless. The relationship between revolutionary and evolutionary technology can be shown in a more complete framework for the analysis of innovation using the four perspectives of generic types of technological innovation as follows:

**Table 2.2: Evolutionary and Revolutionary innovation**

<table>
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<tr>
<th>Process</th>
<th>Content</th>
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<tbody>
<tr>
<td>Evolutionary innovation</td>
<td>Incremental innovation</td>
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<td>Generational innovation</td>
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<td>Revolutionary Innovation</td>
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<td>Or</td>
</tr>
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<td></td>
<td>Architectural innovation</td>
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</table>

Source: Shavinina (2003:112)

Relating of discontinuous and disruptive technologies to other concepts is made possible by the complete framework with all four dimensions. This is done as illustrated below:
Table 2.3: Relating discontinuous and disruptive innovation to other concepts

<table>
<thead>
<tr>
<th>Process</th>
<th>Content</th>
<th>Context</th>
<th>Impact</th>
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<tbody>
<tr>
<td><strong>Evolutionary innovation</strong></td>
<td>Incremental innovation</td>
<td>Continuous innovation</td>
<td>Non – disruptive innovation</td>
</tr>
<tr>
<td></td>
<td>Generational innovation</td>
<td>Continuous innovation</td>
<td>Or</td>
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<td>Disruptive innovation</td>
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<tr>
<td><strong>Revolutionary innovation</strong></td>
<td>Radical innovation</td>
<td>Discontinuous innovation</td>
<td>Non – disruptive innovation</td>
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<tr>
<td></td>
<td>Architectural innovation</td>
<td>Discontinuous innovation</td>
<td>Or</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Disruptive innovation</td>
</tr>
</tbody>
</table>

Source: Shavinina (2003:115)

2.4.3. The Nature and Dynamics of discontinuous and disruptive innovations

Shavinina (2003) argues that not all innovations are *discontinuous*, not all discontinuous innovations prove to be *disruptive* and not all disruptive innovations are *discontinuous*. This is actually determined by the scope, timing and impact of the innovation which is being considered. Another issue is whether there are different strategies to deal with the challenges and opportunities arising from planned or serendipitous technological discontinuities and disruption.

Christensen (1997) recommends three basic strategies that can be utilized for leveraging such contingencies and specifically in the case of technological performance, such as over
supply that creates the potential for an acceleration or a differentiation trap (Von Braun, 1997). The three basic strategies are as follows:

- Strategy 1 involves ascending the trajectory of sustaining technologies into ever-higher tiers of the market.
- Strategy 2 involves marching in lock step with the needs of customers in a given tier of the market.
- Strategy 3 involves the use of marketing initiatives to steepen the slopes of the market trajectories so that customers demand the performance improvements that the technologists provide.

According to Kaplan (1999), there are four strategies for leveraging the above contingencies. The strategies are as follows:

- Substantial growth over the long horizon requires discontinuous innovation - disruptive technologies, radical innovations and discontinuities that permit entire industries and markets to emerge.

2.5. CONTRASTING TYPES OF INNOVATION

Gopalakrishnan and Damanpour (1997) came up with three contrasting types of innovation which are as follows:

- Radical versus incremental
- Technical versus administrative and
- Product versus process

2.5.1. Radical versus incremental innovation

Gopalakrishnan and Damanpour (1997) contrast radical and incremental innovation based on newness. The two contrasting types of innovation are like two points on a continuum. Jorna and Waalkens (2006) came up with five additional types of innovation based on Garcia and Calantone (2002)’s typology for categorising technological innovations. They placed them on the continuum of newness. A distinction can be made of:
i. Radical innovations
ii. Imitations
iii. Incremental innovations
iv. Really new innovations and
v. Discontinuous innovations or game changers

According to Gopalakrishnan and Damapour (1997) this typology accentuates the importance of whose opinion is used in evaluating the innovativeness or newness (Jorna and Waalkens, 2006). Newness is directly allied to the espousal unit. Slappendel (1996) also alluded to this aspect of innovation. She names newness as a widely accepted key distinguishing feature of innovation and also argues that the issue of newness serves to distinguish innovation from change. Zaltman et al (1973) introduced the aspect of perception in 1973. Zaltman et al (1973) defined innovation as “any idea, practice, or material artefact perceived to be new by the adopting unit”. Rogers (1962) in his definition of innovation, also emphasises perception by defining innovation “as an idea perceived as new by the individual”.

According to Jorna and Waalkens (2006), radical innovations are considered to be far reaching. Thus when radical innovations hit the market, many new innovations are triggered. Really new innovation does not catalyse new innovation in the sense that radical innovation does. Really new innovation comes in the form of a new product or service that leads to a discontinuity and newness in the market. This type of innovation involves newness in either technological or marketing sense. An example is the introduction of the cell phone. Discontinuous innovations offer improvement of performance, costs reduction or the introduction of an existing item with completely new characteristics. An example is the introduction of Plasma, LCD and LED televisions. The fourth distinction which is the incremental innovation build further on existing markets and technology, which it provides with new features or improvements. Adaptation, refinement and enhancement are the key issues for incremental innovation. They actually have an iterative nature, an example are updates on software tools. Then the opposite to radical innovations, which is the imitative innovations are those innovations which are new to a particular organisation, but not new in terms of product or process.
2.5.2. Technical versus administrative

The contrast between these two types of innovation, thus technical and administrative innovations reflects a general distinction between social structure and technology (Damanpour and Evan, 1984). Damanpour (1987) is of the contention that the distinction between technical and administrative innovations is founded in nature of these two innovation types and they actually complement each other. Making a distinction between technical and administrative innovations makes it easier to understand the organisational differences in response to these different types of innovation.

Damanpour (1987) is of the assertion that technological innovations change organisations, in that changes in technology are made; technology can be for example a tool, a technique, or a physical equipment. Technological innovations “produce changes in products or services, or in the way those products are produced or services are rendered”. According to Evan (1966) in Damanpour(1987), administrative innovations change the structure or the administrative process of an organisation. This indirectly changes the basic work activity and more directly to the management. An administrative innovation is thus “the implementation of an idea for a new policy pertaining to the recruitment of personnel, allocation of resources, the structuring of tasks, of authority and of rewards”.

2.5.3. Product versus process innovation

According to Gopalakrishnan and Damapour (1997) contrasting product innovation to process innovation “is based on the differences in effects of these innovations on areas and activities”. Process innovation actually involves “tools, devices, and knowledge in throughput technology that mediate between inputs and outputs and are new to an industry, an organisation, or subunit”. Product innovations on the other hand involve new “outputs or services that are introduced for the benefit of customers or clients”.
2.6. BROAD UNIVERSE OF INNOVATION TYPES

According to Darwin (2005), there is a broad universe of innovation types as illustrated follows:

Figure 2.4: Broad universe of innovation types

Source: Darwin (2005:65)

The above innovation types can be organized into clusters. The clustering principle is supplied by the concept of value disciplines which was introduced by Treacy and Wiersema in the discipline of market leaders. Using the clustering, the innovation types fall into four clusters or innovation zones as follows:
Figure 2.5: Four innovation Zones

Source: Darwin (2005:66)

Three of these innovation zones are actually named after the value disciplines that provide the driving force behind the cluster of innovation types it hosts. The privilege of the innovation types that fall in the Product Leadership Zone is actually enjoyed during the growth phase of a category, whereas the privilege of those in the customer intimacy and Operational Excellence zones are enjoyed during the mature phase. Thus value disciplines actually represent different paths for creating value within the same category (Darwin, 2005)

The table below shows the grouping of the various innovation types into four categories. Thus there are many vectors of breakaway differentiation the firms can choose from:
Table 2.4: Four innovation zones

<table>
<thead>
<tr>
<th>Product Leadership Zone</th>
<th>Customer Intimacy Zone</th>
<th>Operational Excellence Zone</th>
<th>Category Renewal Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disruptive Innovation</td>
<td>Line Extension Innovation</td>
<td>Value – Engineering Innovation</td>
<td>Organic Innovation</td>
</tr>
<tr>
<td>Application Innovation</td>
<td>Enhancement Innovation</td>
<td>Integration Innovation</td>
<td>Acquisition Innovation</td>
</tr>
<tr>
<td>Product Innovation</td>
<td>Marketing Innovation</td>
<td>Process innovation</td>
<td>Harvest and Exit</td>
</tr>
<tr>
<td>Platform Innovation</td>
<td>Experimental Innovation</td>
<td>Value Migration Innovation</td>
<td></td>
</tr>
</tbody>
</table>

Source: Darwin (2005: 67)

2.6.1. Innovation types in the product leadership zone

According to Darwin (2005), the following four types of innovation leverage product leadership as their underlying value creation engine:

(a) Disruptive innovation

This type of innovation involves the creation of new market categories based on discontinuous technology change or a disruptive business model. Disruptive innovations lack compatibility with the existing standards and the existing value chain, they develop their markets de novo.

(b) Application innovation

This type of innovation is also known as solution innovation. New markets for existing products are developed by finding unexploited uses for them, usually by combining them in novel ways. An example is the use of fault tolerant computers to run ATMs in banking and the use of document management systems to dramatically accelerate the new drug application process in pharmaceuticals. Application innovations introduce new standards but leverage existing value chains, albeit by giving them a new focus.
(c) Product innovation

Product innovation type focuses on existing markets for existing products, differentiating through features and functions that are not available on the current offers. Thus product innovation reflects change in the end product or service of the firm or organization. Product innovation is normally highly dependent on fast time to market, although patents can sometimes keep competitors at bay for prolonged periods. Examples include flat LCD displays for entertainment centers and cameras in cell phones as well as adding a remote to a television.

An additional dimension of product innovation stems from the fact that all products participate in a hierarchy of components; products and systems. Thus every product is made up of components and is a component as well in some larger system. In addition to better performing an existing role in the hierarchy, product innovation can also enable a shift in roles within the stack. This can either be moving down to the component level for more volume or moving up to the system level for more value. An example of moving down for more volume includes Gillette refocusing its shaving business from razors to razor blades. An example of moving up for more value include the moving up of Microsoft Windows from operating a stand – alone Personal Computer to a home media center and the upwards movement of IBM from mainframes to grid computing(Terkel,1991).

(d) Platform innovation

Platform innovation interposes a simplifying layer to mask an underlying legacy of complexity and complication, thereby freeing a next generation to offers to focus on new value propositions. Part of the innovation activity includes recruitment and supporting of partners who complete the value chain. The most successful platform innovations reposition an already ubiquitous product to take on this new role. An example is that of Oracle repositioning its relational database from a component ingredient of the minicomputer to a universal enterprise application software enabler.

All the four product leadership zone innovation types entail heavy Research and Development expense and significant market risk. This actually sets the product leadership zone apart from the
other zones and is the main reason for its use in the growth markets. To warrant the risk and expense, the innovation should not just lead to winning a sale but also winning a new customer with potential for follow-on sales. The focus is first on winning market share and then maximising profit. This is not the case with innovation types under the customer intimacy zone and those under operational excellence zone.

2.6.2. Innovation types in the customer intimacy zone

In mature markets, innovation types all have an optimising flavour. The innovation types are either leveraging customer intimacy to make the offer a little bit more attractive to the customer or leveraging operational excellence to make it a little bit more profitable to the vendor. The customer intimacy zone comprises of four innovation types arranged in a sequence migrating from the closest to the product to closest to the customer:

(a) Line extension innovation

Line extension innovation makes structural modifications to an established offer to create an idiosyncratic sub-category. The objective of structural modifications is to expand a maturing market by engaging with a new customer base or reengaging more compellingly with an old one. Examples include the introduction of the laptop and work group server in personal computers and minivan and SUV in the automotive sector. In all the cases, the preponderance of the underlying infrastructure remains unchanged. This allows the investor to leverage amortised investments and keep development risks low. The differences at the surface can actually cause customers to treat the category as a commodity thus eliciting preferential treatment.

(b) Enhancement innovation

Enhancement innovation continues the trajectory begun by line extensions, thereby driving innovation into finer elements of detail; getting closer to the surface of the offer with less impact on the underlying infrastructure. The main aim is to improve existing offers in existing markets by modifying a single dimension, thereby reawakening customer interest in what had become an
increasingly commoditised category. Examples of enhancement innovations include cherry and spar berry flavouring in coke and ice makers and water dispensers in refrigerators.

(c) Marketing innovation

Marketing innovation focuses on differentiating the interaction with a prospective customer during the purchase process. The main goal is to outsell the competitors and not to outproduct them. "An example is peer to peer marketing of social networks and single vendor showcase stores.

(d) Experiential innovation

Experiential innovation is an ultimate refinement of customer intimacy. The value is not based on differentiating but rather the experience of the offering. Experiential innovation is particularly suited to consumer markets where the product has become a commodity, and the purchase decision has become risk free. An example is business hotels that take into account the customer or client’s newspaper preference.

The experiential innovation is distinctively important because the core offer is not distinctive. Thus in mature markets, products per se become increasingly commoditised. This happens as more vendors meet the same relatively complete design specification. Additional investment in product leadership creates no returns. The opposite is true earlier in the life cycle, when a product category still has headroom for significant functional improvements, customer intimacy is much less effective because customers are still looking at the or performance as their primary evaluation criterion. This actually underscores the issue that innovation strategy must be situational in selection of its preferred innovation types. Thus customers always have to have a reason for preferring one offer over another and winning that preference battle is the key economic success. However the question that remains is how.
2.6.3. Innovation types in the operational excellence zone

Customer intimacy zone focuses on differentiating the offering on the demand side of the market, whereas the operational excellence zone focuses on differentiating the offering on the supply side. The primary reward is a lowered cost structure that enables either reductions in prices; capital investment, or higher profits. There is also a secondary focus on time to market and speed of adaptation to market changes. All these are keys to success in markets that have low barriers to competition. The innovation types in the operational excellence zone are as follows, organised in a sequence migrating from closest to the product to closest to the processes that enable it:

(a) Value – engineering innovation
Value engineering extracts costs from the materials and manufacturing of an established offer without changing its external properties. Classically it calls for substitution of low cost standard parts and pre-integrated subsystems for an earlier design’s high cost manually integrated custom components. Examples are cell phones and main frame computers whose costs were substantially reduced through value engineering.

(b) Integration innovation
Integration innovation reduces the customer’s cost of maintaining a complex operation through integration of disparate elements into a single centrally managed system. Integration innovation actually permits backward compatibility with existing systems, buffering them with a management and integration layer that keeps things constant within whilst allowing changes outboard. Good examples are the four in one fax; printer; scanner and copiers that are being made by the likes of HP and Samsung.

(c) Process innovation
Process innovation refers to change in the methods employed by a firm in delivering of products and services. An example is the use of the internet technologies for supply chain management, where the process of ordering; tracking and billing would be internet – based. Process innovation focuses on improving profit margins. This is done through extraction of waste from the enabling
processes that produce it and not from the offer itself. The main objective is to remove non-value adding steps from the work flow. Examples are Toyota’s kanban manufacturing process and Dell’s direct retail model, as well as Wal-Mart’s vendor managed inventory process.

(d) Value migration innovation

Value migration innovation involves redirecting the business model towards one richer in margins. This implies moving away from a commoditising element in the market’s value chain. This is in response to Slywotzky’s phenomenon which he entitled: “Value Migration: How to think several moves ahead of the competition”. Examples include switching focus from products to consumables, as with printers to toner cartridges and from products to services, as is the case on the replacement of answering machines by voicemails.

When we take together the customer intimacy and operational excellence zones, mature market innovation types as a whole are optimised for deepening relationships with existing customers rather than for the acquisition of new ones. This relationship needs not be as powerful in their impact as those in the product leadership zone where the main focus is acquisition of new customers because they are already established. For them to maintain attract vendor margins whilst at the same time meeting customer cost reduction objectives, they need to be increasingly less expensive and more capital efficient.

2.6.4. Innovation types in the category renewal zone

When firms are faced with a declining market, all markets which are still going concerns are valuable assets. Thus markets provide a necessary context for commerce, and they tend to be both expensive and risky to create. Even in declining markets, customers and incumbent vendors have an incentive to stay engaged.

The vendor has two basic options to explore from his own point of view:

i. Renew your franchise.
This is done by refocusing the majority of the resources on a new category while optimising returns simultaneously for the remainder of the present category’s useful life following a harvest and exit strategy.

The types of innovation that pertain to the renewal of the franchise or renewal zone are as follows:

(a) Organic innovation
The company reposition itself into a growth category through the use of its internal resources. This repositioning in industrial markets typically involves reconnection with the company’s most valued customers and finding new problems to solve for them. This is done following the approach laid out in application innovation. IBM actually did it when they repositioned themselves as an e-commerce enabling company. It also involves reconnecting with a new tornado market when it comes to consumer markets. This is what Kodak is striving to do today with the digital cameras. This is a representation of return to product innovation. In both cases the vendor stays within the same sector but repositions its product line.

(b) Acquisition innovation
Merger and acquisition are used as a way of solving the problem of category renewal externally. This game can be played as an acquirer or an acquiree. An example is that of Lotus, the PC software company who realised that they cannot renew themselves organically via their notes platform and took the structural path of selling themselves to IBM. This enabled Lotus to acquire the sophisticated distribution and services capabilities Notes required to be successful.

The category life cycle model provides a framework for analysing the market forces affecting the competitive advantage strategy. Whereas the innovation types model allows the company to target a specific vector of differentiation to gain definitive separation from the competitive set. Taken together, the two models actually lay out the landscape upon which the core is defined. The most important act of strategy leadership is to select the innovation vector upon which the sustainable advantage of the company would be developed.
Tidd et al (1997) argue that there are four main types of innovation; consequently the innovator has four pathways to investigate when searching for good ideas:

a) Product Innovation – which involves new products or improvements on products. The updated VX Beetle and new models of mobile phones by, for example, Nokia and Samsung are good examples.

b) Process Innovation - where some part of the process is improved to bring benefit. Just-in-Time System is a good example of this.

c) Positioning Innovation – An example is Lucozade which used to be a medicinal drink but was repositioned as a sports drink and an anytime refreshment.

d) Paradigm Innovation – whereby change is caused by major shifts in thinking. A good example is that of Bill Gates and others aimed to provide a home computer for everyone during the time of the expensive mainframe.

2.7. MEASURES OF INNOVATION
Essentially there are two different types of measures for innovation which are the organizational level and the political level.

2.7.1. Organisational level
The measure of innovation at the organizational level relates to individuals, team-level assessments, private companies from the smallest to the largest. Measure of innovation for organizations can be conducted by surveys, workshops, consultants or internal benchmarking. Today there is no established general way to measure organizational innovation. Corporate measurements are normally structured around balanced scorecards which cover several aspects of innovation such as business measures related to finances, innovation process efficiency, employees' contribution and motivation, as well benefits for customers. The measured values will vary extensively between businesses, covering for example new product revenue, spending in Research and Development, time to market, customer and employee perception & satisfaction, number of patents, additional sales resulting from past innovations (Cris Beswick 2010).
2.7.2. Political Level

The political level, measures of innovation are more focusing on a country or region competitive advantage through innovation. In this perspective, organizational capabilities can be evaluated through various evaluation frameworks, such as those of the European Foundation for Quality Management. The Organisation for Economic Co-operation and Development (OECD) Oslo Manual (1995) suggests standard guidelines on measuring technological product and process innovation. Some people consider the Oslo Manual complementary to the Frascati Manual from 1963. The new Oslo manual from 2005 takes a wider perspective to innovation, and includes marketing and organizational innovation. These standards are used for example in the European Community Innovation Surveys.

Other ways of measuring innovation have traditionally been expenditure, for example, investment in Research and Development as percentage of GNP (Gross National Product). Whether this is a good measurement of Innovation has been widely discussed and the Oslo Manual has incorporated some of the critique against earlier methods of measuring. The traditional methods of measuring still inform many policy decisions. The EU Lisbon Strategy has set as a goal that their average expenditure on Research and Development should be 3% of Gross National Product. The Oslo Manual is focused on North America, Europe, and other rich economies. The Bogota Manual was created in 2001 for Latin America and the Caribbean countries.

A number of scholars claim that there is a great bias towards the "science and technology mode, thus S and T-mode or STI-mode, whereas the "learning by doing, using and interacting mode", DUI-mode is extensively disregarded.

2.7.3. Innovation Measures – hard versus soft

According to Shavinina (2003), a typology of measurable characteristics may help to bring together the disparate measurable. The main categorisation is between hard and soft measurables as follows:
Table 2.5: Innovation Measures – hard versus soft

<table>
<thead>
<tr>
<th>Hard Measures</th>
<th>Measure</th>
<th>Soft Measures</th>
<th>Characteristic</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and Development</td>
<td>• Patent</td>
<td>• Productivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Research and development budget.</td>
<td>• Growth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New products</td>
<td>• Lower costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Research and Development staff</td>
<td>• Flexibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Publications</td>
<td>• Supply or Demand</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Research and Development incentives</td>
<td>• Firm size</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New features</td>
<td>• Market influence</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Inventions</td>
<td></td>
<td>Social</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• New markets</td>
<td>• User benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Product extensions</td>
<td>• Lower prices</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Conferences</td>
<td>• Social enablers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Partnerships</td>
<td>• Time savers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Shavinina(2003: 119)
i. Hard measurables

Hard measurable are those characteristics that may be directly linked to the innovation process. An example is the number of intellectual property rights such as patents issued is a direct outcome of the process of research and generally is not influenced by outside factors. Productivity improvements may not be a direct result of an innovation but the link is not quite clear due to other influential characteristics. An increase in productivity can be influenced by increased managerial interest in the implementation of a productivity innovation. Nonetheless this is not to assume that the innovation was not the primary influence of productivity gains, but rather the measurement process may not be sufficiently rigorous to differentiate the various influences (Shavinina, 2003).

Nelson (1977) as quoted by Shavinina (2003) indicated that Research and development has a direct effect on output. Studies that were conducted in the manufacturing field indicated that applied research and development funding was a more powerful explanation of differences in productivity growth that were witnessed across manufacturing industries than total Research and Development funding by the entire industry. This indicates that Research and Development expenditures are a direct measure of firm productivity.

The adoption of measures of innovation may be influenced by a firm’s business and technology strategy. Thus a firm with a high profit objective may choose to measure innovation characteristics that have a proclivity to specific goals (Nelson and Rosenberg, 1993). This type of weighing may be quite beneficial if characteristics are more directly linked, which is referred to as hard measurables.

2.8. FAILURE OF INNOVATION

Research findings vary, ranging from fifty to ninety percent of innovation projects judged to have made little or no contribution to organizational goals and specifically to competitiveness. One survey regarding product innovation quotes that out of three thousand ideas for new products; only one becomes a success in the marketplace. Failure is an inevitable part of the innovation process, and most successful organisations factor in an appropriate level of risk. Perhaps it is because all organisations experience failure that many choose not to monitor the
level of failure very closely. The impact of failure goes beyond the simple loss of investment. Failure can also lead to loss of morale among employees, an increase in cynicism and even higher resistance to change in the future, at the same time leading to loss of market share to competitors (Grant, 1991).

Innovations that fail are not always bad ideas but are often potentially good ideas but have been rejected or postponed due to budgetary constraints, lack of skills or poor fit with current goals. Failures should be identified and screened out as early in the process as possible. Early screening avoids unsuitable ideas devouring scarce resources that are needed to progress more beneficial ones. Organizations can learn how to avoid failure when it is openly discussed and debated. The lessons learned from failure often reside longer in the organisational consciousness than lessons learned from success. While learning is important, high failure rates throughout the innovation process are wasteful and a threat to the organisation's future (Edquist, 2005).

According to Henry (1991), the causes of failure of innovation have been widely researched and can vary significantly. Some causes will be external to the organisation and outside its influence of control. Others will be internal and ultimately within the control of the organisation. Internal causes of failure can be divided into causes associated with the cultural infrastructure and causes associated with the innovation process itself (Schein, 1984). Failure in the cultural infrastructure varies between organizations but the following are common across all organisations at some stage in their life cycle:

1. Poor Leadership
2. Poor Organization
3. Poor Communication
4. Poor Empowerment
5. Poor Knowledge Management

According to Twiss and Weinshall (2005), there are eleven major causes of failure of innovation which are as follows;

1. Lack of top management commitment
2. The generation gap
3. Premature evaluation
4. Fear of change
5. Personal vested interest in the status quo
6. Risk aversion
7. Insensitivity to environment trends
8. Ignorance of the innovation process
9. Inflexible managerial systems
10. Self imposed perceived constraints
11. An inappropriate organisational structure

Henry (1991) reduced common causes of failure within the innovation process in most organisations into five types:

1. Poor definition of goals
2. Poor alignment of actions to goals
3. Poor team participation
4. Poor supervising and monitoring of results
5. Poor communiqué and information access

Effective goal definition requires that organisations state explicitly what their goals are in terms comprehensible to everyone involved in the innovation process. This often involves stating goals in a number of ways. Effective alignment of actions to goals should link explicit actions such as ideas and projects to specific goals. It also implies effective management of action portfolios. Participation in teams refers to the behaviour of individuals in and of teams, and each individual should have an explicitly allocated responsibility regarding their role in goals and actions and the payment and rewards systems that link them to goal attainment. Finally, effective monitoring of results requires the monitoring of all goals, actions and teams involved in the innovation process (Mintzberg, 1994).

Sundbo (1997) is of the assertion that, innovation can fail if seen as an organisational process whose success stems from a mechanistic approach, thus 'pull lever obtain result'. While 'driving' change has an emphasis on control, enforcement and structure, it is only a partial truth in
achieving innovation. Organisational gatekeepers frame the organisational environment that "enables" innovation. Sundbo,(2000) alluded that innovation is "enacted"; recognised, developed, applied and adopted through individuals. Thus he considered individuals as the 'atom' of the organisation close to the minutiae of daily activities. Within individuals gritty appreciation of the small detail combines with a sense of desired organisational objectives to deliver and innovate for a product or service offer.

From this angle, innovation succeeds from strategic structures that engage the individual to the organization’s benefit. Innovation pivots on inherently motivated individuals, within a supportive culture, informed by a broad sense of the future (Sundbo, 1998b).

Innovation, implies change, and can be counter to an organisation's orthodoxy. Space for fair hearing of innovative ideas is required to balance the potential autoimmune exclusion that quells an infant innovative culture (Drucker, 1999b).

2.9. DIFFUSION OF INNOVATIONS

Once innovation occurs, innovations may be spread from the innovator to other individuals and groups. This process has been proposed that the life cycle of innovations can be described using the s-curve' or diffusion curve. The s-curve maps growth of revenue or productivity against time. In the early stage of a particular innovation, growth is relatively slow as the new product establishes itself. At some point customers begin to demand and the product growth increases more rapidly. New incremental innovations or changes to the product allow growth to continue. Towards the end of its life cycle growth slows and may even begin to decline. In the later stages, no amount of new investment in that product will yield a normal rate of return (Rogers, 1995). This is illustrated by the life cycle overleaf:
The s-curve derives from an assumption that new products are likely to have a "product Life". Thus the product life comprises of the start-up phase, a rapid increase in revenue and eventual decline. In fact the great majority of innovations never get off the bottom of the curve, and never produce normal returns (Rogers, 1995).

Innovative companies will typically be working on new innovations that will eventually replace older ones. Successive s-curves will come along to replace older ones and continue to drive growth upwards. In figure 2.6 above the first curve shows current technology. The second which is doted shows an emerging technology that current yields lower growth but will eventually overtake current technology and lead to even greater levels of growth (Rogers, 1994).

2.10. INNOVATION MANAGEMENT

According to Luecke and Katz (2003) innovation management is the process of managing innovation, thus ideas, in organising through the stages of the innovation cycle. The innovation cycle describes the activities involved in taking an innovative product or service to the market place. There are two aspects to this, which are as follows:

- Development of the innovative product or service
- Buiding the business to market the product or service.
The innovation cycle is presented as follows:

**Table 2.6: Innovation Cycle**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Typical Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ideas</td>
<td>Identify a market opportunity</td>
</tr>
<tr>
<td>2</td>
<td>Resources</td>
<td>Organise people, functions and facilities to match the goals of the organisation.</td>
</tr>
<tr>
<td>3</td>
<td>Investigate</td>
<td>Research the possibilities</td>
</tr>
<tr>
<td>4</td>
<td>Patent</td>
<td>Protect the intellectual property.</td>
</tr>
<tr>
<td>5</td>
<td>Design</td>
<td>Model and test it for users</td>
</tr>
<tr>
<td>6</td>
<td>Develop</td>
<td>Improve the technology</td>
</tr>
<tr>
<td>7</td>
<td>Make</td>
<td>Start production</td>
</tr>
<tr>
<td>8</td>
<td>Sell</td>
<td>Advertise and inform people</td>
</tr>
<tr>
<td>9</td>
<td>Service</td>
<td>Communicate with the customers</td>
</tr>
</tbody>
</table>

Source: Australian Academy of Technology, Sciences and Engineering

Idea generation is the first stage in the innovation cycle. Ideas often arise from observation of a current or future problem. Inspiration is often triggered by the organisation’s objectives or by a new market situation that suddenly becomes an opportunity.

When an opportunity is recognised, it becomes necessary to evaluate such an opportunity. Thus an idea needs to be tested to confirm whether it is compatible with the goals of the organisation, as well as the available resources such as human resources, finance and facilities.

Alignment of the idea with the objectives of the organisation implies that the idea should then be investigated and further developed. The development phase may involve further research into the opportunity or the patenting of the concept. At this stage prototypes may be well designed, developed and tested.

The decision to start offering the innovation to the market, thus selling the innovation is quite a critical stage. At this stage, significant resources are required to support the launch. Sometimes
an organisation may decide to wait at the end of the development phase for suitable market conditions.

Commercialisation is the final stage, whereby the innovation is marketed and sold to the customer. At this stage the innovation ceases to be in the organisation’s control, thus would be in the hands of the users. This stage is the hardest stage of the innovation cycle for the organisations to manage. It is very crucial that at this stage, the organisation monitors the innovation’s performance so that any shortcomings are corrected.

Innovative organisations at this stage will typically work on new innovations that will eventually replace older ones. This is of much significance as product life cycles show reduced growth for older products or services. A decline in growth can be experienced, thus impacting on an organisation’s ability to expend.

New incremental innovations or changes to the product actually allow growth to continue. Usually companies generate far more technical innovations than they can possibly hope to bring to market effectively. There is a need for structured management and processes to handle innovation from the ideas stage to commercialisation (Davila et al, 2006).

2.11. INNOVATION AND COMPETITIVENESS OF FIRMS


The understanding of innovation as a key driver of competitiveness has its roots in the works of Schumpeter (1943), who described market dynamics as a process of creative destruction. Schumpeter (1943) later developed further the concept of creative destruction, referring it as a process of creative accumulation. The key determinants and drivers of firm innovation and competitiveness are the accumulated technological competencies.
This approach to innovation based competitiveness emphasizes its characteristic as a dynamic process in contrast to the static understanding of competitiveness based on pricing. This innovation based competitiveness highlights that innovative firms manage to establish temporarily a monopolistic position in the market. This is enabled by the innovation based competitive advantage. The concept of innovation based competitiveness is developed further by considering innovative activity as a process in which most innovations are mostly improvements on existing products and processes based on past experience (Schumpeter, 1943).

Firms that use different technologies and firms belonging to different industries are characterised by different patterns of their innovative activity, furthermore, when comparisons are made across countries. The diversity and dissimilarity in firm performance is the most imperative trait that characterizes the process of innovation at the firm level. An example is that in technologically lagging sectors the threat of new entrants to the market discourages innovation, whereas in technologically advanced sectors, it impels innovation. Market entry by new firms has a positive effect on productivity growth in the industry while in others it depresses it (Garcia and Calantone, 2002).

According to Teece, (1986), firm productivity and innovation associated activities are extremely intertwined and firm productivity growth is much dependent on the process of technological change. The productivity effect of a process innovation is as a rule larger than the effect of a product innovation. Thus the firm’s Research and Development spending enhances the firm’s capacity to absorb new technologies, both those internally developed as well as those generated outside the firm.

The firm’s international competitiveness as alluded by Ziman(2000), is actually determined by the firm’s ability to export. Thus the firm’s ability to export is one of the major characteristics of the firm’s international competitiveness. A firm’s capacity to innovate fundamentally changes its behavior and capability to export. Thus product innovation is an important determinant of a firm’s ability and readiness to export. At the same time, research and development activity; patenting and successful innovations positively influences the level and intensity of a firm’s export performance.
In agreement to Ziman (2000), Kanter (1983) mentions that the survival capacity of firms can be regarded as a characteristic of their competitiveness. On the same note, Tushman and O’Reilly (1997) alluded that, innovation is also closely associated with the firms’ potential to succeed in the market and adapt to changing environments. On the other hand, the firm’s competitive position is boosted by innovation, whilst at the same time enhancing potential to survive (Dosi, 1988).

2.11.1. Competitive advantage

According to Schwefel (1995), competitive advantage is a specific dimension of competitiveness. This is associated with the firm’s opportunity to extract economic rents. Most forms of competitive advantage, which includes innovation driven ones are temporary. This is due to the fact that the opportunity to extract rents drives competitors to duplicate or imitate the advantage held by the innovating firm. Michael Porter’s classification has two main types of competitive advantage. These are the cost advantage and the differentiation advantage. With the cost advantage, the firm is able to deliver the same benefit at a lower cost, whereas with the differentiation advantage, the firm’s products deliver benefits that exceed those of the competing firm’s products (Porter, 1987).

Competitive advantage has different roots. Innovation is actually one of the possible sources. The relationship between innovation and competitiveness can exhibit different patterns emerging from two main transmission channels. The transmission channels are that of active price competitiveness and that of technological competitiveness. These two channels are actually rooted in the two models of technological development and the types of innovation: that of creative accumulation and that of creative destruction. Creative accumulation is typically associated with process innovation and creative destruction is largely associated with product innovation (Porter, 1987).
2.11.2. Innovation driven creative destruction

According to (Metcalfe, 1993), innovation driven creative destruction is closely associated with improving price competitiveness of the innovating firm. This can also be achieved through different channels. Consequently, the introduction of an innovative product or service can give the firm a temporary monopoly power. This allows for monopolistic pricing and hence higher profits until other firms can imitate the innovation. The benefits associated with innovation can also be reaped. These include cost reductions and new markets. The ultimate outcome of innovation is that, innovating firms are provided with a temporary positive boost to the price competitiveness.

2.11.3. Creative accumulation

Creative accumulation is typically associated with process innovations and it increases the productive efficiency of firms. The benefits of creative accumulation can be reaped either through cost savings or through increasing the firm’s market share or both. The creative accumulation approach entails that innovations create an important difference between innovating and non-innovating firms. For this reason, the two models of innovation – driven competitiveness relate the newly acquired competitive advantage of the innovating firm to its high monopoly profit or to ability to exert higher competitive pressure. Based on a different angle, the perspective of reaping monopoly profit and acquiring market power are in turn among the main innovation drivers (Schumpeter, 1939).

2.11.4. Systematic and Occasional innovators

Firms that are systematic innovators and earn profits above the average have a high probability of further innovating and maintaining their competitive advantage and hence earning profit above the average. However, firms that are occasional innovators and earn profit which is below the average have a high probability of remaining in the same situation. Nevertheless, very few firms are really persistent innovators. This usually happens only after a threshold level in innovative performance is reached (Dowrick, 1995).
2.12. PUBLIC POLICY IMPLICATIONS

Public policies traditionally support firm’s innovation related activities. The key arguments are those of market failure or public goods. When it comes to globalised modern economy, the innovation activity of a firm involves complex links and interactions with other business entities as well as with public institutions and is dependent on the efficient functioning of these links. The risk of failures in different parts of the networks is increased by this complex environment. The evolution of the innovation process has led to changes in the rationale for policy intervention as well as the importance of the different types of policies involved (Hall, 1994).

There is one important aspect that needs to be considered, which is the interrelationship and possible interference between policies targeting the firms’ innovative performance and competition policy. Competition itself is one of the powerful incentives for firms to innovate and acquire innovation based competitive advantage. Based on this, competition policy’s aim is to prevent the emergence of business structures possessing excessive market power as a result of the risk of its abuse as well as other market distortions (Binks and Vale, 1990).

Innovating firms, however, do not target achieving market power on the basis of innovation based competitive advantage. Temporary monopolistic prices and profit, thus time limited competitive advantage, can be regarded as a fair compensation for the investment and effort in producing the product and process innovation. Thus this works in the similar way as patents which protect intellectual rights holders and provide them with a time limited opportunity to recover the costs invested in their invention. Nevertheless, the safeguarding and tolerating of the monopolistic market power of innovative firms, even for a limited period of time, is in conflict with conventional competition policy. At the same time, the complex nature of modern innovation requires extensive coordination and exchange of market information amongst firms that are involved in a network or cluster. This coordination process may be perceived by traditional anti-trust policy as collusive and anti – competitive bahaviour. Based on this point of view, competition policy requires significant fine tuning in order not to become an obstacle to firms’ innovative performance (Edquist and McKelvey, 2000).
The pragmatic finding concerning the divergence of firms in their innovative performance also has imperative policy implications. An example is that, the entry threat in technologically advanced industries stimulates innovative activity whereas in technologically lagging sectors it discourages innovation. This finding has direct implications for the policy debate on market deregulation or regulation, competition policy and trade liberalisation. Thus this finding suggests that competition policies that are aimed at decreasing or removing entry barriers alone may not be sufficient to foster productivity growth in all industries. This actually, may suggest harmonizing policies to facilitate the reallocation of factors and resources from less to more technologically developed industries that are considered as reacting more positively to entry threat (Malerba, 2004).

Particularly, it is imperative for the antitrust regulation bodies to be able to differentiate among firms enjoying competitive advantage and hence relatively higher profits and between those who exploit a monopoly position based on market power, and those who own capabilities and competencies that make them systematically better than others. Differentiation of policy actions in different technological classes of firms is important as firms and classes of firms differ in their ability and opportunity to innovate as well as in the potential returns to innovation. More generally, these conclusions would suggest differentiated policy approaches to facilitate innovation performance (Binks and Vale, 1990).

Instead of the traditional approaches to industrial policy such as “picking winners”, or import substitution policies which are notorious for their negative side effects such as market distortions, inefficient resource allocation and corruption, more creative and productive policy approaches to enhancing the firms’ innovation performance are more associated with the strand of “new industrial policy”(Freeman,1982).

The new industrial policy paradigm suggests institutional arrangements that engage all the relevant stakeholders. These include stakeholders both from the public and from the private sector in the process of policy design and in its implementation, and steer them towards a common goal. Instead of “picking winners” in the sense of traditional industrial policy, this approach actually involves a more flexible strategic alliance that can be of a long-term nature in
which the Government and the private sector exchange information and ideas, and coordinate their actions in the development of new activities, products or technologies. This is enabled through strategic alliance between the parties involved” (Freeman, 1982).

2.13. CHAPTER SUMMARY
This chapter discussed the importance of innovation in enhancing competitiveness. At the same time, factors that enhance innovativeness and those that act as barriers to innovativeness were highlighted. It also showed the link between innovation and competitiveness. The following chapter (Methodology) focuses on identifying, examining and analyzing research instruments, research designs and justification of their choice.
CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

The purpose of this chapter is to give a detailed account of the research design and methodologies that were used in carrying out the research. The focus is on identifying, explaining; analysing and justification of tools which were used to gather data. The researcher explains the research design, the research philosophy and the research strategy that the researcher used to conduct the research. The case study methodology is discussed in detail since it is the methodology which was used by the researcher. The researcher looks at the strengths and weaknesses of the case study and the reasons for selecting the strategy for this research. A detailed description of the population; sampling techniques, data collection and data analysis are as well given.

3.2 RESEARCH DESIGN

According to Creswell (1994), “Research design can be thought of as the structure of research -- it is the "glue" that holds all of the elements in a research project together”. A design is often described using a concise notation that enables summarizing a complex design structure efficiently. Seltizet et al (2000) defines research design as the arrangement of conditions for an option and analysing of data in a manner that aims to combine relevance to research purpose with economy in mind. Yin (2003) reiterates that the research design is the logical sequence that binds the empirical data to the study’s preliminary research questions and eventually to its conclusions. Thus, the research design guides the researcher in the data collection process, analysis and interpretation of observations, allowing the researcher to draw inferences relating to fundamental associations between the variables under exploration (Yin, 2003). A single case study design was used by the researcher. Yin (2003) suggests that of the five grounds for a single case one of them is when a case is typical or representative. National Foods Ltd is representative and typical of Zimbabwean commercial milling companies. This implies that the results of the
research are applicable to other commercial milling companies which operate under similar regulations and thus extend to other organisations operating in the same industry in Zimbabwe.

Elements of the research design are detailed in sections 3.7 to 3.8

3.3 RESEARCH PHILOSOPHY

White (2000) states that research can be carried out by either using the qualitative or quantitative approach. However, research can be carried out by using a combination of the two approaches, thus triangulation. Whatever method is used in research, the process of enquiry in science is the same (Hammersley, 1992). However Silverman (2000) argues that these two approaches often involve different evaluation methods, at the same time quantitative research tends to be more superior as it is value free.

3.3.1 Quantitative / Positivism approach

This refers to a design where standardized measurement procedures are used to assign numbers to observation. Statistical figures are used to summarise the results. Creswell (1994) defined quantitative data as data coming from statistical measurement expressed in numerical forms. Findings can be generalised with much objectivity. Campbell and Stanley (1993) are of the assertion that quantitative research is commonly used to investigate research questions. There is a potentially infinite array of possible quantitative research designs, and in the human sciences particularly, it can be difficult to do pure, experimental research. Thus a great many adaptations of experimental designs, called quasi-experimental and non-experimental designs have been developed. It is important to consider a range of possible quantitative research designs and their strengths and weaknesses, before adopting any particular design. According to Denzin and Lincoln (2005) quantitative research is a methodology that makes practical descriptions of observed phenomena and provides the possible correlation or association between longitudinal developments, descriptive surveys, correlational and ex-post factors research designs. White, (2000) view quantitative research as an iterative process through which data is assessed, and theories and propositions are refined and tested. Denzin and Lincoln (2005) argue that, measurement is typically considered in quantitative research as the only means through which observations are numerically articulated in order to examine casual associations.
3.3.2 Qualitative / Phenomenology approach

Roberts et al (2003), Saunders (2003) and White (2003) cited in Mahofa (2006) define phenomenology approach as that ideology that uses qualitative data to arrive at natural facts. Thus this approach is based on the way people experience social phenomenon in the world they live. It is characterised by focus on meanings that the research subjects attach to social phenomenon, an attempt by the researchers to understand what is happening and why it is happening using qualitative data. This is mainly concerned with opinions and subjective judgements. Information under this research design would be obtained from documentary analysis. For example, practical work, observations, personal judgments and other procedures. Silverman (2000) is of the accession that qualitative research is often regarded as somewhat a minor methodology. For that reason he suggests that it should only be considered at early or tentative stages of a study and can as such be used to acquaint the researcher with a setting before engaging in serious sampling and counting.

Johnson and Christensen (2010) defines qualitative research as any kind of research that produces findings not arrived at by means of statistical procedures or other means of qualification. It is concerned with quality or meaning rather than quantity. This approach to research is flexible and allows for systematic data collection. Unlike quantitative research, there is no overarching framework for how qualitative research should be conducted; rather each type of qualitative research is guided by particular philosophical stances that are taken in relation by the research to each phenomenon (Patton, 1990). The qualitative approach is defined by Wilson (2006) as an amorphous research methodology that is conducted through the use of a small number of prudently selected individuals to produce non quantifiable insights into motivations, behaviour, and attitudes. White (2000) is of the assertion that open-ended interviews are used in qualitative methods to evaluate opinions, behaviours as well as attitudes of individuals or groups of individuals. The data collected using qualitative methods is by and large in the form of descriptions. This approach is advantageous in that it provides a deeper appreciation of social phenomena than would be obtained from purely quantitative data (Silverman, 2000).

The advantages and disadvantages of the research philosophies are summarized in Table 3.1 below:
Table 3.1: Summary of the advantages and disadvantages of the Positivism and Phenomenology approaches.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Positivism/Quantitative</th>
<th>Phenomenology/Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater opportunity for researcher to regain control of the process.</td>
<td></td>
<td>Enable researcher to be alive to changes during the research process.</td>
</tr>
<tr>
<td>Economical collection of large amounts of data.</td>
<td></td>
<td>Good understanding of the social process.</td>
</tr>
<tr>
<td>Easily comparable data.</td>
<td></td>
<td>Facilitates understanding of how and why?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disadvantages</th>
<th>Positivism/ Quantitative</th>
<th>Phenomenology/ Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Often does not discover the meanings people attach to social phenomena.</td>
<td>Data analysis is difficult.</td>
<td></td>
</tr>
<tr>
<td>Weak understanding of social process.</td>
<td>Data collection can be time consuming.</td>
<td></td>
</tr>
<tr>
<td>Inflexible, often direction cannot be changed once data collection has started.</td>
<td>Generally perceived as credible by non researchers.</td>
<td></td>
</tr>
</tbody>
</table>


3.3.3 Selection of the suitable approach

According to Denzin and Lincoln (2005), the main distinction between quantitative and qualitative research is that qualitative research produces rich, valid and exhaustive data. Such data contributes to in-depth understanding of the context whilst quantitative research produces reliable population based data that gives explanation of cause and effect relationships. While quantitative and qualitative research methods are often seen as opposing and polarized views, they are frequently used in conjunction with one another. According to some scholars the distinction between the philosophies is overstated (Miles and Hubermann, 1994) and
triangulation of methods in current day research is common (Patton, 1990). Qualitative research can be used in conjunction with quantitative methods, to help in the interpretation and better understanding of the intricate reality of a given situation as well as the insinuation of quantitative data (Denzin and Lincoln, 2005). Yin (2003) argues that the decision on whether to use qualitative or quantitative research is based on:

- The form of the research
- The availability of resources such as time, finance and human capital.
- The background of the research study
- The nature of the required information

The researcher used the qualitative approach because the case study methodology is qualitative in nature as stipulated by Silverman (2000). The researcher collected information required to answer the research questions through personal unstructured interviews. This actually enabled the researcher to gain an in-depth understanding (Silverman, 2000) of the impact of innovations on firms’ competitiveness. The qualitative approach allows flexibility. Whilst a pure scientist is trying to prove or disprove a hypothesis, the qualitative approach might introduce new and unexpected results during its course, and lead to research taking new directions through the interactive process between the researcher and the respondent (Patton, 1990).

### 3.4 RESEARCH STRATEGY

There are numerous ways of researching. These include case studies, surveys, histories; experiments, and the analysis of archival information. Each of these strategies has peculiar advantages and disadvantages, depending on three conditions:

1) The control the researcher has over actual behavioural events
2) The nature of research question
3) The focus on contemporary as compared to historical phenomena (Yin, 2003).

The researcher sought to determine the impact of innovation on competitiveness, a case study of National Foods Limited. According to Yin, (2003) the research comprises ‘why’ and ‘how’ questions regarding a contemporary set of events, of which the researcher does not have control over or has little control over, thus the use of the case study. Yin (2003) tabulated three
conditions which are related to five major strategies and how each of them is related to these strategies that are used in research as follows:

**Table 3.2: Appropriate situations for different research strategies**

<table>
<thead>
<tr>
<th>Research Strategy</th>
<th>Form of research question</th>
<th>Requires control of behavioural events</th>
<th>Focuses on contemporary events</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiment</strong></td>
<td>How; why?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Archival analysis</strong></td>
<td>Who, what, where, how many, how much?</td>
<td>No</td>
<td>Yes/ No</td>
</tr>
<tr>
<td><strong>Survey</strong></td>
<td>Who, what, where, how many, how much?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Case study</strong></td>
<td>How, why?</td>
<td>no</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>History</strong></td>
<td>How, why?</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*Source: Yin, 2003*

The type of research question asked, the level of focus on contemporary as compared to historical events and the level of control the researcher has over actual behavioural events are the three conditions that are indicated in table 3.2 (Yin, 2003). Based on table 3.2, the case study was regarded as the most suitable research strategy to use due to the “how” and “why” questions asked by the researcher about a contemporary set of events. The researcher selected the case study method as it allowed the researcher to investigate the key research areas in a holistic; historical, and current way.

Some of the research strategies as stated by Yin (2003) are as follows:

**Experiments**

According to Yin (2003), experiments are done when an investigator can manipulate behaviour directly, precisely and systematically. White (2000) specifies that experiments are carried out in
a laboratory or in a natural setting in a systematic way wherein an experiment may concentrate on one or two isolated variables. Manipulation of the independent variable in order to observe the effect on the dependent variable is the aim of experiments.

**Archival analysis**
Archival analysis involve answering the questions which include who, where, what, how much and how many research questions. Archival strategies depict the prevalence of a prodigy (Yin, 2003).

**Survey**
According to Wilson (2006), a survey is a research strategy whereby a sample of subjects is winkled out from a population and studied to make deductions concerning that population. A survey can be either descriptive or analytical. White (2000) is of the assertion that analytical surveys involve the determination of whether there is any relationship between different variables. On the other hand a descriptive survey entails the identification and counting of the frequency of a particular population, which can be at one point in time or at various times for comparison purposes. Wilson (2006) argues that surveys involve the use of structured questions and the recording of subjects’ responses.

**History**
History as a research strategy is used to answer why and how research questions, whose focus is not contemporary events, and the researcher would be having little or no control on the events. When there is virtually no access or control, histories are the preferred strategy. The historical method has its distinctive contribution in dealing with the “dead” past, for which the relevant persons would not be animate to report what transpired. Thus the researcher relies on primary documents and secondary documents, as well as cultural and physical artifacts as the major sources of evidence (Yin, 2003).

**3.5 CASE STUDY STRATEGY**
The researcher realised that the case study strategy was the most suitable strategy for the research. Yin (2003) asserts that the case study answers “why” and “how” questions regarding a
contemporary set of events, for which the researcher would be having little or no control over. The focus of this research was to answer “how” and “why” questions about innovation and competitiveness at National Foods Limited. A case study is considered by Yin (2003) as an empirical assessment that examines a contemporary prodigy within its real-life context, specifically when the confines between prodigy and context are not evidently apparent. The case study research can take any form. Thus it can take the form of qualitative or quantitative research type which espouses an interpretive approach to data, whilst studying things within the perspective and considering the subjective meanings that people bring to their situation (Yin, 2003).

The researcher obtained an in-depth knowledge through the case study research (Silverman, 2000) of the impact of innovation on competitiveness of National Foods Limited through qualitative means.

3.5.1 Demerits of the case study strategy

There has been so much concern on the use of the case study due to lack of rigor of the strategy. According to Yin (2003), the common stereotype of the case study is that this research strategy:

i. Should be used at the exploratory stages,
ii. Leads only to uncomfortable conclusions and
iii. Is considered as a method of last resort.

Yin (2003) reiterates that the lack of rigor is unlikely to be present when using other strategies. This is probably due to the availability of various methodological texts that give researchers precise procedures that should be followed. White (2000) nonetheless advocates the application of case studies by asserting that people fail to differentiate a case study research from case studying teaching. Thus case study teaching involves making adjustments to the research material so as to exhibit a concept in a more effective way. This is however not permissible in case study research. Case studies are considered as a strategy which provides little foundation for scientific generalisation. Nevertheless case studies like experiments can be generalised to hypothetical propositions and not to populations or universes (Yin, 2003). Thus the case study
does not represent a sample, however the goal is to expand and generalise theories and not to enumerate frequencies.

Despite the stereotype, case studies paradoxically seem to be appearing with increased frequency. Thus case studies are even quite commonly found among program evaluation studies even though the standard folklore again represented by nearly every author on program evaluation claim that such studies are the sole province of quasi experimentation. However the main concern is on whether the continuing uses of case studies mean that we are exploring more or that we have to use our last resort frequently. Or it could possibly mean that the common stereotype of the case study has been misleading.

However close examination of the case study research, including two original investigations of knowledge utilization (Yin and Gwaltney, 1981a) strongly suggest that the stereotype is in fact wrong.

3.6 DATA COLLECTION

3.6.1 Population

According to Cooper and Schindler (2003) cited in Mahofa (2006), a population is a total collection of elements about which some inferences are made. Johnson and Christensen (2010) assert that a population is considered as a collection of units ordinarily people, transactions, objects, or proceedings which the researcher is interested in conducting a research study on. Thus, the population is a group of interest to the researcher. Thus, it is upon this group that the researcher would generalize the results of the study (Tashakkari and Teddlie, 1998). The population can be in two categories. The categories are the target and the accessible populations. The target population being the actual population to which the researcher would really like to generalize. However, the target population is rarely available or if it is available it is uneconomical in terms of time and resources to consider it in research. Therefore, the population to which the researcher is able to generalize is the accessible population (Miles and Huberman, 1994).
The target population for this research constituted National Foods Limited Executive management and senior management as well as middle management of National Foods Limited who are based at their head office in Harare. The research constituted three Directors; six Divisional Heads; seven Senior Managers and nine middle Managers. According to McClave et al (2007), when carrying out a study of a population, focus is on one or more traits or characteristics of the units of the population. Executive, senior and middle management were selected as they are the ones who are responsible for the strategic issues that include innovation and competitiveness issues. The selected sample assisted in achieving management perceptions that were relatively homogenous.

### 3.6.2 Sampling procedure

The sampling procedure can be either probability or non-probability sampling. Table 3.3 below illustrates the sampling procedures. Only a sample or a subset of a population is selected for any given study in a qualitative research (Denzin and Lincoln, 2005). Bernard, (1995) is of the accession that, the number of people and which people to select is determined by the study’s research objectives and the characteristics of the research population. According to Salant and Dillman, (1994) non-probability type of sampling is used for qualitative research methods. The non-probability type of sampling includes convenience sampling, judgmental sampling and quota sampling. The researcher used judgmental sampling for the research and selected suitable units of analysis.

**Table 3.3: Sampling procedures**

<table>
<thead>
<tr>
<th>Non probability sampling procedures</th>
<th>Probability sampling procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Convenience</td>
<td>1. Simple random</td>
</tr>
<tr>
<td>2. Quota</td>
<td>2. Stratified</td>
</tr>
</tbody>
</table>

*Source: Moutinho et al (1998)*
3.6.2.1. Non probability sampling procedures

i. Convenience sampling

According to Cohen (1989), convenience sampling is whereby the sample is drawn for the convenience of the researcher and is not representative of the population. Wegner (2004) shares the same view as he reiterates that convenience sampling represents a sample drawn to suit the convenience of the researcher. Denzin and Lincoln, (2005) are of the accession that convenience sampling method involves choosing a sample based on the convenience to the researcher. The participants are self selected or selected on the basis of availability. The selected sample may be biased and may not be a true representative of the population. At the same time it tends to be highly subjective.

ii. Quota sampling

According to Creswell (1994), in quota sampling, respondent selection is in the same ratio as found in the general population. Thus, in quota sampling the researcher make a decision while designing the study on the number of people and with which traits to include as participants (Patton, 1990). Place of residence; age, profession; gender, class, and industry type are the characteristics that may be considered. The selected criteria allow the researcher to focus on people they think would be most likely to experience, have insights into the research topic or have knowledge of the research topic (Denzin and Lincoln, 2005).

iii. Judmental or purposive sampling

The researcher attempts to draw a sample which is representative of the population. In this case the amount of error depends upon the degree of expertise of the person making the selection. This is considered as one of the most common sampling strategies which involve the grouping of participants according to pre-selected criteria relevant to a particular research question (Denzin and Lincoln, 2005). In this research, the researcher selected the middle; senior and executive management of the organisation because of the strategic role they play and their contribution in making strategic decisions which include the issue of innovation and competitiveness.
3.6.2.2. Probability sampling procedures

i. Simple random sampling

With this sampling method, each item in the entire population has an equal chance of being included in the sample (Johnson and Christensen, 2010). Thus each element has an equal chance of being selected.

ii. Stratified random sampling

The population is divided into segments or strata. Each stratum has relatively homogeneous elements. Either a specific number of elements are selected at random from each stratum that corresponds to the proportion of that stratum in the population. Stratification only makes sense when the population can be classified into strata that are homogeneous in the state being investigated.

iii. Cluster Sampling

With cluster sampling, the population is divided into groups, or clusters and a random sample of clusters get selected. Cluster sampling is used when there is considerable variation within each group but the groups are essentially similar to each other (Johnson and Christensen, 2010).

3.6.3 Sampling frame

According to Denzin and Lincoln (2005), sampling frame is a list of the sampling units that are available for selection during the sampling procedure. In the case of judgmental sampling, the sample size may depend on the available resources and time as well as the study objectives. Thus the sample size may not be fixed may not be fixed prior to data collection. In this research, the sample constitutes four middle, seven senior and five executive management members who were able to answer research questions which are significant to the objectives of the research.

3.7 DATA SOURCES

The two types of data sources are primary and secondary.
i. **Primary data**

Primary data is gathered directly from the elements of the population. Zikmund (1997) states that primary data are gathered and assembled for the particular research project available. Patton (1991) also shares the same view, as he states that primary data is collected specifically for a project. Primary data is considered to be expensive to collect, but is important, as it makes it possible to formulate structured and unstructured questions that focus on the study topic.

Primary data constitute the most important form of data in this research given the qualitative nature of the research topic (Merriam, 1998). The information is crucial to the research project as it specifically addresses issues of interest to the study area.

ii. **Secondary data**

Secondary data is mostly historical. Thus, it is data that is collected from records holding the primary data (Salant and Dillman, 1994). Zikmund (1997) defines secondary data as data collected and assembled for some other project. Thus, secondary data is data gathered and recorded by someone else prior to and for other purpose, other than the current project. It is thus not intended for the purpose of the study under review. Both secondary and primary data were used for this research. Personal interviews were used for primary data collection and secondary data was obtained from websites, company documents such as business plans and divisional plans as well as annual reports.

### 3.7.1 Questionnaires

Primary data can be collected by using Questionnaires. The questions asked can be structured, semi-structured or unstructured. According to Salant and Dillman (1994), the use of questionnaires has the following advantages and disadvantages:

(a) **Advantages of using questionnaires**

- Anonymity is guaranteed and respondents are comfortable with answering any question without feeling any pressure or bias.
- They are economical.
(b) Disadvantages of using questionnaires

- The respondent may misinterpret or misconstrue a question resulting in incorrect responses.
- Lack of interest may lead to low response rate.
- The respondent may be biased in favour of certain questions and thereby end up partly completing the questionnaire.

The above list of advantages and disadvantages of using questionnaires as a means of collecting data is not exhaustive. There are many other advantages and disadvantages.

3.7.2 Personal interviews

According to Salant and Dillman, (1994), personal interviews involve collection of data using an interview guide which contains a list of relevant questions for exploratory enquiry. This data collection has the following advantages:

a) The responses are immediate.
b) Non verbal responses can be noted by the interviewer.
c) It provides room for further probing.

There are however disadvantages of using personal interview. These include:

a) Can be costly as the cost of travelling may be prohibitive in some instances.
b) It leaves room for Interviewer bias
c) It is costly to train interviewer.

The researcher carried out the interviews so as to eliminate bias and costs. Interviews were conducted with the middle, senior and executive management so as to acquire comprehensive information from the strategic level. The middle managers; senior managers; and departmental heads are involved in the planning and implementation of strategies and as such can give an insight of the achievements or failures of the implemented strategies.

The researcher drafted an interview guide using unstructured open ended questions. The interview guide was pilot tested before use in order to determine its appropriateness for use. The researcher conducted face-to-face interviews.
3.8 DATA ANALYSIS

According to Patton (1990), the analysis of data obtained through qualitative research has no standard format. Tashakkari and Teddlie (1998) in Johnson and Christensen (2010) argued that, qualitative data for a sample of more than twenty respondents can be converted into numerical codes and then statistical analysis techniques can be used with the data. The results were analysed in more opinion based than statistical methods. The idea was to try and collate the data into a manageable form and construct a narrative around it. Examples were used in the narrative whilst keeping things concise and interesting. Some numerical data were shown but the researcher only tried to judge trends and not analyze every last piece of data. The data obtained from the research was therefore analysed through the use of data displays and charts. Thus the data collection involves resolving what and which meaning can be ascribed to the words and what the insinuation are to that effect and how it relates to the topic under study. The data analysis was carried out by going through all the questions and determining common themes, patterns and associations. All the gathered information was analysed against philosophy mentioned in the literature review and the suitable inference were made (Miles and Huberman, 1994).

3.9 CHAPTER SUMMARY

This chapter presented the way in which the researcher conducted the research and the respective justification of the adopted methodology. The discussed concepts include research design; study population; sampling; data collection and data analysis and presentation. The researcher used qualitative data for this research. The main variables of the research are innovation and organisational competitiveness. The research was as a result conducted through interviews to collect data for the period 2005 to 2010. Yin (2003) is of the contention that a case study’s distinctive strength is that, it can deal with a full variety of evidence which includes documents, artifacts and observations.

The following chapter (Chapter four) presents the research findings and their respective discussion, thus the chapter discusses and analyses the findings of the research.
Chapter 4

Data Presentation and Analysis

4.1 Introduction

Chapter 3 outlined the research methodology that was used in conducting this research and particularly noted that the data was collected through interviews. This chapter presents the research findings that emanate from the in-depth interviews that were carried out. In line with the interview guide, the findings are presented separately under different sections. The chapter summarises the responses of the interviews that were conducted with the middle managers; senior managers; Heads of Departments; and Directors of National Foods Limited. The findings of this research are presented on the basis of the type of questions, although they were presented in table and chart format.

4.2 RESPONSE RATE

This research comprised of a study sample of twenty five employees of National Foods Limited. Nine of them were middle managers; seven were senior managers; six Departmental heads and three Directors. The response rate of the face-to-face interviews is presented in Table 4.1 below:

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Total Number of Interviewees</th>
<th>% Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle Managers</td>
<td>9</td>
<td>100</td>
</tr>
<tr>
<td>Senior Managers</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>Departmental Heads</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>Directors</td>
<td>3</td>
<td>100</td>
</tr>
</tbody>
</table>
A 100% response rate was obtained by the researcher as the sample size was small; manageable and easily accessible.

Section A: Demographics

4.3 Position in the organisation

The position of the respondents in the organisation is presented in Figure 4.1 below

![Figure 4.1 Position in the Organisation](image)

From the study findings 36% of the respondents were middle managers, 28% were senior managers, 24% were departmental heads and 12% were directors. The respondents were selected based on that they were the ones in the position to know and understand the issue of innovations within the organisation. In light of the findings, most of the respondents were from the middle management and senior management. These are the people on the ground, hence they understand the real effects of the innovations on the organisation.
4.4 Length in the Organisation

Figure 4.2 shows the time that the respondents have been with their organisation.

From the study findings 40% of the respondents have been with National Foods for more than 10 years, 32% had 6-10 years, 16% had 1-5 years, whilst 12% had less than 1 year with the organisation. This indicates that most of the respondents had been with National Foods Limited for a very long time and hence were in a position to understand the innovation strategies of the organisation. This also implies that most of the responses given for the study were from an informed position, hence were representative of the study population and also of the situation at National Foods.
4.5 Level of Education

Figure 4.3 shows the levels of education of the respondents.

The study findings in figure 4.3 show that most (52%) of the respondents attained an undergraduate qualification, 32% had a college diploma, whereas 16% were post graduates. The results show that the respondents had attained higher education and with the majority furthering their education to college diplomas, undergraduates and post graduates. This made most of the respondents knowledgable enough to understand the concept under study given the level of education they attained. Thus, it is the researcher’s understanding that the level of education attained puts the respondent in a better position to understand and appreciate the concept under study.
Section B: Innovation and Competitiveness

This section will look at the innovations that were embarked on at National Foods and their effects on National Food’s competitiveness. The findings relating to innovation and competitiveness from the research are presented in the following sections;

4.6 National Foods Innovations

Respondents were asked about the innovations that National Foods embarked on in the past five years and also to further explain if these were motivated by the need for competitive advantage. The study findings are presented in Table 4.2 below;

Table 4.2 National Foods Innovations

<table>
<thead>
<tr>
<th>Innovations</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Seal roller meal (mwana wangu iyeye)</td>
<td>88</td>
</tr>
<tr>
<td>All purpose flour</td>
<td>64</td>
</tr>
<tr>
<td>Vitamin enriched products</td>
<td>88</td>
</tr>
<tr>
<td>Grits porridge</td>
<td>60</td>
</tr>
<tr>
<td>Packaging changed</td>
<td>76</td>
</tr>
<tr>
<td>New and improved PET Food</td>
<td>92</td>
</tr>
</tbody>
</table>

According to the findings in Table 4.2, respondents mentioned that the innovations that were embarked on by National Foods in the last five years were as follows; 88% of the respondents mentioned vitamin enriched products, 88% Red Seal roller meal (mwana wangu iyeye); 76% packaging changes, 90% new and improved Pet Food; 64% all purpose flour and 60% of the respondents mentioned Grits porridge as one of the innovations that National Foods Ltd embarked on. Further, most of the respondents or interviewees agreed that these innovations were motivated by the need to gain competitive advantage through cost savings by reducing the utilisation of raw materials. They explained that most of these innovations came at a time when National Foods was losing its competitive advantage to its competitors, for example, Blue Ribbon, who were gaining market share over them. This is also in line with Tidd et al(1997),
who put forward that innovation can evolve out of the organization’s motive of producing a better product than its competitors. Innovation - based competitiveness highlights that innovative firms manage to establish temporarily a monopolistic position in the market. This is enabled by the innovation based competitive advantage. The concept of innovation - based competitiveness is developed further by considering innovative activity as a process in which most innovations are mostly improvements on existing products and processes based on past experience and market research.

4.6.1 National Foods’ use of Innovation as a Competitive Tool

The respondents were asked how National Foods uses innovation as a competitive tool and their responses were captured in the following table 4.3

Table 4.3: Utilisation of innovations as a competitive tool

<table>
<thead>
<tr>
<th>How innovation is used as a competitive tool</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Saving</td>
<td>96</td>
</tr>
<tr>
<td>Differentiation strategy</td>
<td>88</td>
</tr>
<tr>
<td>Improvements in the value chain system</td>
<td>80</td>
</tr>
<tr>
<td>Ensuring quality</td>
<td>92</td>
</tr>
</tbody>
</table>

The respondents stated that National Foods uses innovation as a competitive tool by modeling innovations towards cost saving (96%), differentiation strategy (88%); ensuring quality is maintained in its products (92%) and improvements in the value chain system (80%). In line with the response from the interviews, innovation can result in cost savings, for example, by making the organisation flexible, or decreasing the utilisation of raw materials; energy or labour. In that way the organisation can operate at low cost, hence improving its financial position and in the long run enhances its competitive advantage. Also, given that there are capital challenges in the Zimbabwean industry at present, there is need to come up with innovations that can enhance cost
savings and thus would stimulate growth. National Foods Limited innovations are leading to differentiated products on the market. National Foods Limited products, due to the innovations the company is embarking on, according to the respondents, it is able now to differentiate its products from that of its competitors. For instance, some of the packaging that are coming with the other products have made National Foods products look more appealing than those of its competitors, and in that way the organisation has enhanced its competitive advantage. As a result of innovations, there are improvements within its value chain system and has led to process improvements. Process improvements are said to have resulted in shortening the product life cycle of competitors’ products and thus going ahead of competition. This is strengthened by the fact that the product development life cycle in many industries is simply too long and too cumbersome, and any opportunity to shorten the development life cycle could mean real rewards. Conversely, any slacking off could mean falling behind the competition. This is in line with Dosi (1988) who put forward that innovation can help the firm continually grow and differentiate. He argued that innovation is rapidly becoming a capability or enabler that strengthens and focuses the corporate strategies, and should over time, become a key enabler to many corporate goals and strategies. This therefore means that, organisations like National Foods should focus or centre organizational goals and strategies on innovations.

4.6.2 Use of Internal and External Expertise

This section sought to establish the extent to which National Foods is utilizing internal and external expertise to come up with innovations. The responses were captured in table 4.4 below:

Table 4.4 Use of External and Internal expertise for innovations

<table>
<thead>
<tr>
<th>% Respondent</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>44%</td>
<td>More often National Foods Limited uses external expertise to come up with innovations.</td>
</tr>
<tr>
<td>36%</td>
<td>In some instances internal expertise would come up with innovations and only to be evaluated by the external expertise.</td>
</tr>
<tr>
<td>20%</td>
<td>National Foods utilises internal expertise when coming up with innovations.</td>
</tr>
</tbody>
</table>
It was gathered that National Foods utilizes both internal and external expertise to come up with innovations. Thirty six percent (36%) of the respondents pointed out that in some instances internal expertise would come up with innovations which are evaluated by the external expertise who at the end recommend the implementation of an innovation. There is also a deliberate policy within the organisation that internal expertise is free to come up and embark on an innovation that creates competitive advantage for the organisation. Internal expertise is capacitated by the organisation in coming up with different innovations, in that, resources are made available to them when embarking on an innovation. However from the interviews, as shown in Table 4.4 below, most (44%) of the respondents said that, more often National Foods uses external expertise to come up with innovations. This arrangement, according to majority of the respondents, has been cited as not being ideal as they pointed out that most of the innovations that come from external expertise usually fail. They argued that, most of them would not be aligned to the organizational goals and strategies, hence they fail. The external expertise was not equipped to understand the needs of the organisation and also what exactly needs to be improved to gain competitive advantage.
Section C: Benefits of Innovation

This section sought to establish the benefits that are brought about by innovations at National Foods.

4.6.3 Ways in which Innovations enhanced National Foods’ Competitiveness

The ways in which the innovations have made National Foods’ competitiveness in the Milling industry are shown in Table 4.5 below

Table 4.5: Enhancement of competitiveness

<table>
<thead>
<tr>
<th>Ways</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce cost of doing business</td>
<td>88</td>
</tr>
<tr>
<td>Enhances differentiation</td>
<td>64</td>
</tr>
<tr>
<td>Lengthen product life cycle of products</td>
<td>52</td>
</tr>
<tr>
<td>Improved quality of products</td>
<td>80</td>
</tr>
</tbody>
</table>

Table 4.5 shows that innovations enhanced National foods’ competitiveness by reducing cost of doing business, improving quality of products, enhancing differentiation and lengthening product life cycle of their products. In reducing the cost of doing business, this ensures that National Foods can compete in the market as it would be operating at reduced cost and hence could sustain its operations. Lowering costs would also mean that National Foods can gain market share with increased ease. Given that the market is now more of a global village, businesses can no longer guarantee to compete on the market on price alone but rather on other areas like product quality. In this regard differentiation becomes a source of competitive advantage as Ansoff (1988:67), puts it that “If you cannot compete on price you have to differentiate and to differentiate you have to innovate”. In light of this, innovation at National Foods might have led to differentiation which enhances competitiveness on the market.
4.6.4 Benefits of Innovation

This section sought to establish the benefits that were brought about by innovation at National Foods. The results are shown in Table 4.6 below;

Table 4.6: Benefits of innovation

<table>
<thead>
<tr>
<th>Benefits</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater responsiveness to customer demands</td>
<td>88</td>
</tr>
<tr>
<td>Faster turnaround times</td>
<td>68</td>
</tr>
<tr>
<td>Reduced waste levels and downtime</td>
<td>80</td>
</tr>
<tr>
<td>Improved product design and quality</td>
<td>88</td>
</tr>
<tr>
<td>Streamlined relationship with suppliers and customers</td>
<td>82</td>
</tr>
</tbody>
</table>

From the study findings in Table 4.6 the benefits that were brought about by innovations at National Foods were, improved product design and quality (88%); greater responsiveness to customer demands (88%); reduced waste levels and downtime (80%); faster turnaround times (68%) and streamlined relationship with suppliers and customers (82%). Due to the innovations that National Foods embarked on over the years, according to the respondents, the organisation enhanced greater responsiveness to customer demands. National Foods have been, due to the innovations, responding well to market needs and demands as improvements within its value chain have been awarding it with flexibility. Drucker (1985) asserts that inventive companies generally match up with customers looking for inventive solutions, and prepared to pay supreme rates for such innovations. These innovative companies frequently work with their supply chain partners to extend the sphere of their innovation efforts over a broader asset base. The benefits of innovation occur in all aspects of the profit and loss statement. Innovators are drivers of additional sales volume and achieve price premiums and reduce costs through process improvements. In addition to the financial benefits, innovation goes hand-in-hand with sustainable development initiatives, as both require progressive leadership and an appetite for.
change, combined with a tolerance of experimentation and some risk (Drucker, 1985). However the organization’s clients also benefit from the innovations and some of the benefits that are enjoyed by the customers according to the respondents, include a wider product range, quality products, good working relationship with the organisation and improved availability of products on the markets.
Section D: Conditions for Effective Utilisation of Innovation

4.6.5 Key Assets and Resources for Innovation

The section sought to establish the key assets and resources which enhance innovativeness of National Foods Limited and the results of the study are presented in Table 4.7 below.

Table 4.7: Key Assets for innovation

<table>
<thead>
<tr>
<th>Key assets for innovation</th>
<th>% Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>92</td>
</tr>
<tr>
<td>Skills base</td>
<td>88</td>
</tr>
<tr>
<td>Financial resources</td>
<td>80</td>
</tr>
<tr>
<td>Technology</td>
<td>82</td>
</tr>
</tbody>
</table>

The study findings reveal that the key assets and resources that are needed by National Foods to enhance its innovativeness are knowledge, skills base, financial resources and technology. The availability of financial resources determines the innovativeness of organisations as it would enable the organisation to fund the innovations. The organisation should have a knowledge database, which knowledge can be transferred to others in the organisation to create a suitable environment on which innovations can be made. This is in line with, Barney (1999), who put forward that when knowledge that resides in one part of an organisation is transferred effectively to other parts, it can be used to either solve problems or provide new and creative insights. Christensen (1965) asserts that, the current state of society’s aims and needs, and the marketplace on the other hand, and the store of scientific, technical and production know-how on the other hand, influence the innovation process. In light of this it can be seen that, a resource for innovation is knowledge, which is market knowledge and also technical knowledge. Along with knowledge, skills are essential to the innovation process according to the respondents whom 88% concurred to this idea. Skills are needed to carry out the scientific experimentation or to turn the
developed knowledge into real innovations, physically embodied products, services or procedures. All of these resources work hand-in-hand thus making them equally important. Thus, without each other, the sources may not be effectively utilised. For instance, if tests are to be carried out in the research and development department, it requires knowledge, skills and financial resources. In light of the findings, it can be said that innovation requires financial resources, as well as knowledge and skills. This is in line with, Sundbo’s (2000) assertion that, innovations require only three things which are as follows:

- A recognized need,
- Competent people with relevant technology, and
- Financial support.

4.6.6 Innovations and Overall Objectives

The section sought to determine if the innovations embarked at National Foods were aligned or compatible with the organisation’s overall objectives. The responses from the questions relating to this section were transformed and summarised in common thrusts so that they could be presented in charts. Miles and Hubermann (1994) define data transformation as a process of changing the original form of data to a new format. Miles and Hubermann (1994) also state that this is typically done to understand the data more easily or to achieve the research objective. The results are presented in Figure 4.4 below.

![Figure 4.4 Innovation strategy and Overall Objectives](image)

Figure 4.4 Innovation strategy and Overall Objectives
According to the study findings, the majority (58%) of the respondents, concurred that the innovation strategy at National Foods is compatible with overall objectives, 34% said it was very compatible, whereas an insignificant 8% argued that it was less compatible. There is however, overwhelming evidence from the study findings that the innovation strategy at National Foods is compatible to overall strategy, as collectively almost everyone (92%) suggested that it was compatible to the overall strategy. The few respondents who said that it was less compatible, pointed out the use of external expertise on innovation. Thus external expertise does not have on the ground information, about the organisational processes and activities, hence the reason for less compatibility of the innovations to overall objectives. This is in line with Fagerberg et al (2006), who put forward that, as with all other core business processes, innovation needs to be linked to strategy and the business planning process. Innovation which is separate from the business strategy runs the risk of diverting key resources and damaging the focus of an organisation.
Section E: Factors affecting Innovations

This section identified the factors that affected the effectiveness of innovation strategy at National Foods towards enhancing competitiveness.

4.6.7 Innovation Budget and Funding

The respondents were asked to explain the extent to which the innovation plans and projects were budgeted for and funded.

![Figure 4.5 Innovation Budget and Funding](image)

**Figure 4.5 Innovation Budget and Funding**

Figure 4.5 shows that most (50%) of the respondents said that innovation plans and projects at National Foods are well budgeted for and inadequately funded, 34% said that innovations are well budgeted for and adequately funded, whilst 16% argued that innovations were not adequately budgeted for and funded. From the study findings, the innovation plans and projects appear to be well budgeted for, but inadequately funded. Most of the respondents argued that the innovation process is well budgeted for, but the prevailing economic condition, have made it difficult for National Foods Limited to adequately fund the projects. They argued that National Foods at the moment is faced with capital challenges, hence did not have capacity to fund the innovation plans and projects. The inadequate funding of the innovation plans and projects have compromised the effectiveness of innovation in enhancing National Foods’ competitive
advantage. This is so as financial resources were cited as one of the important resources that enable the effectiveness of innovation by Edquist and Mckelvey (2000).

4.6.8 Impediments to successful innovation and competitiveness

The impediments to successful innovation and competitiveness at National Foods are presented in Table 4.8 below.

**Table 4.8 Impediments to successful innovations**

<table>
<thead>
<tr>
<th>Impediments to successful innovations</th>
<th>% of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate funding</td>
<td>80</td>
</tr>
<tr>
<td>Lack of management commitment</td>
<td>48</td>
</tr>
<tr>
<td>Skills flight</td>
<td>80</td>
</tr>
<tr>
<td>No reward for idea and knowledge sharing</td>
<td>52</td>
</tr>
<tr>
<td>Poor communication</td>
<td>52</td>
</tr>
<tr>
<td>Non alignment of innovation strategy to objectives</td>
<td>68</td>
</tr>
</tbody>
</table>

The impediments to successful innovation and competitiveness at National Foods are: skills flight; inadequate funding; non alignment of innovation strategy; poor communication; no reward for idea and knowledge sharing and lack of management commitment. The economic downturn in the country has contributed to high skills flight, as critical skills left National Foods for greener pastures in the neighbouring countries. This has left a skills gap at National Foods as the most skilled employees left, and this has also highlighted poor knowledge management practices at the organisation. Active commitment of top management, through visible leadership and support of the process by senior management, is critical for successful innovation process. As soon as an ‘informal’ process to fast track ideas from senior management is used, the innovation process breaks down. Rewarding people for sharing ideas and knowledge do not just mean a cash bonus. Performance can be improved through good management and a reward system that recognises group effort, and sharing ideas rather than just individualism.
Communication of successes through all means possible is also of importance. This helps in making employees know how innovative their colleagues are, thereby motivating them to do likewise or much better. Communication is the lifeblood of the process and is essential for positive reinforcement of good practice. Drucker (1999b) is of the contention that innovation, implies change, and can be counter to an organisation's orthodoxy. Thus communication allows space for fair hearing of innovative ideas. This is required to balance the potential autoimmune exclusion that quells an infant innovative culture.

4.7 SUMMARY OF FINDINGS

4.7.1 Planning and implementation of the innovation strategy

According to Shavinina (2003) organizations embark on innovation strategies as a way of differentiating their products from those of competitors, thereby achieving a competitive advantage, and hence competitiveness. However this was not the case with National Foods Limited when they implemented various innovations to their products and processes. The organization experienced insignificant changes in their performance or competitiveness due to impediments stated on table 4.8.

According to Michael Porter’s (2002) classification, there are two main types of competitive advantage. These are the cost advantage and the differentiation advantage. With the cost advantage, the firm is able to deliver the same benefit at a lower cost, whereas with the differentiation advantage, the firm’s products deliver benefits that exceed those of the competing firm’s products. Competitive advantage has different roots. Innovation is actually one of the possible sources. The relationship between innovation and competitiveness can exhibit different patterns emerging from two main transmission channels. The transmission channels are that of active price competitiveness and that of technological competitiveness. These two channels are actually rooted in the two models of technological development and the types of innovation: that of creative accumulation and that of creative destruction. Creative accumulation is typically associated with process innovation and creative destruction is largely associated with product innovation. National Foods Limited implemented various innovation strategies in a bid to reclaim their market share as well as to gain competitiveness through cost advantage and the
differentiation advantage. They embarked on both creative accumulation, (process innovation) and creative destruction (product innovation).

**Reasons for innovating**

National Foods Limited’s reasons for innovating as indicated by the respondents were entwined and similar. The organisation’s main motive for innovating was to achieve both the cost advantage and the differentiation advantage over their competitor’s products. With the cost advantage, National Food Limited’s intention was to deliver the same benefit at a lower cost through the cost advantage, and ensuring that the firm’s products deliver benefits that exceed those of the competing firm’s products through the differentiation advantage.

**Utilisation of internal and external expertise by the organization**

National Foods Limited utilises both internal and external expertise to come up with innovations. According to Cooper, (1998), it is of importance that an organization utilises both internal and external expertise when striving to achieve competitive advantage through innovation. Thus external expertise brings in fresh ideas from their previous experience on planning and implementation of innovation strategies.

**4.7.2 Benefits of innovating at National Foods Limited**

Due to the innovations that National Foods embarked on over the years according to the respondents, the organisation enhanced greater responsiveness to customer demands. Through the innovations, National Foods have been able to respond well to market needs and demands as improvements within its value chain made them flexible thereby enhancing customer loyalty. Abramson and Littman (2002), assert that inventive companies generally match up with customers looking for inventive solutions, and prepared to pay supreme rates for such innovations. As such National Foods Limited generated revenue. Innovators are drivers of additional sales volume and achieve price premiums as well as reducing costs through process improvements (Trott, 2005). However the organization’s clients also benefit from the innovations and some of the benefits that are enjoyed, by the customers according to the
respondents include a wider product range, quality products, good working relationship with the organisation and improved availability of products on the markets. National Foods did not enjoy some of these benefits of innovation which includes competitiveness due to the various impediments mentioned in section 4.6.8.

4.7.3 Innovation budgeting and funding

National Foods Limited’s plans and projects are well budgeted for and inadequately funded. From the study findings the innovation plans and projects appear to be well budgeted for but inadequately funded. Most of the respondents argued that the innovation process is well budgeted for but the prevailing economic condition have made difficult for National Foods to adequately fund the projects. They argued that National Foods at the moment is faced with capital challenges hence did not have capacity to fund the innovation plans and projects. The inadequate funding of the innovation plans and projects compromises the effectiveness of innovation in enhancing National Foods’ competitive advantage. This is so as financial resources were cited as one of the important resources that enable the effectiveness of innovation by Von Hippel (1988).

4.7.4 Impediments to the success of innovation strategies

Skills flight, inadequate funding; non alignment of innovation strategy, poor communication, non - rewarding for idea and knowledge sharing and lack of management commitment to innovations are the impediments to successful innovation and competitiveness at National Foods Limited. These impediments were mentioned by the management in their responses to the interviews. The economic downturn in the country has contributed to high skills flight as critical skills left National Foods Limited for greener pasture in the neighbouring countries. This has left a skills gap at National Foods Limited as the most skilled left and this has also highlighted poor knowledge management practices at the organisation.

4.8 Chapter Summary

This chapter analysed findings on the implementation of innovation and the impact on competitiveness at National Food Limited. Based upon the analysis above, it can be concluded
that, to some extent, the companies who embark on innovation are motivated by the need for competitive advantage. In other words, the findings from this survey demonstrate that innovation can assist companies in improving their competitiveness and bring a series of benefits to them. The next chapter will present the study conclusions and recommendations. An area of further study will also be presented in the chapter.
Chapter 5

Conclusions and Recommendations

5.0 CONCLUSION

5.1 INTRODUCTION
Based on the findings in the previous chapter, the researcher makes inferences and conclusions based on the information obtained from the analysis of the research findings. The researcher presents the study conclusions and recommendations. Recommendations are based on the conclusions. An area of further study is also suggested in this chapter.

5.2 CONCLUSIONS
The study presented the following conclusions:

5.2.1 Strong link between innovation and firm competitiveness
This research demonstrates that innovation does have strong positive impact on the competitiveness of National Foods Limited. There is a strong link between innovation and firm competitiveness in that, the more the firm innovates the more competitive it becomes. This is supported by the fact that when firm innovates, the innovation results to cost savings; improvements in the value chain systems; improved product design and quality and process improvements. However the organization could not enjoy competitiveness as expected due to the impediments that are specified on 5.2.2 below.

5.2.2 Impediments to successful innovations
National Foods Limited fell short of the requirements for successful implementation of innovation due to the existence of numerous impediments. These include inadequate funding; lack of management commitment; critical skills flight; poor communication; not rewarding entrepreneurship; and non- compatibility of innovation strategy to objectives.
5.2.3 Competition is a powerful incentive to innovate

Competition is a powerful incentive for National Foods limited to innovate and acquire innovation based competitive advantage. National Foods Limited’s decision to innovate emanated from the fact that it was losing its market share to its rivals. An innovation can evolve out of the organization’s motive of producing a better product than its competitors. Most innovations of National Foods Limited are mostly improvements on existing products and processes, based on past experience so as to counter competition.

5.2.4 Innovation leads to various benefits

Though National Foods Limited failed to achieve the required level of competitiveness through innovation, the organization is enjoying some benefits that were brought about by innovations, that include improved product design and quality, process improvements, greater responsiveness to customer demands, reduced waste levels and downtime and streamlined relationships with suppliers and customers.

5.2.4.1 Change management

Findings from the research confirm that management failed to plan their innovation strategy, as indicated by the responses of the employees on the innovations that were embarked on by National Foods Limited. Some employees did not even know some of the innovations that were implemented, indicating that innovations were not well communicated and well handled.

5.2.4.2 Public policies

National Foods Limited’s activities are tightly monitored and controlled by the government. Whichever strategic changes they decide to implement has to be approved by the government before they are implemented. The public policies; regulations and control by the government had a bearing on the operations of the organization as they had to avoid any clashes with the public policies. Competition itself is one of the powerful incentives for National Foods Limited to innovate and acquire innovation based competitive advantage. Based on that, the competition policy’s aim is to prevent National Foods Limited from possessing excessive market power as a result of the risk of the abuse of such market power, as well as other market distortions that may result.
5.2.4.3 Critical skills fight

Critical skills flight has been an impediment which hindered successful innovation and competitiveness. Critical skills flight meant that the organization fell short of continuity, that is, employees from other areas had to be moved to fill in the gaps. This resulted in distortions and poor progress.

5.2.5 Test of the research proposition

The research proposition is refuted as National Foods Limited failed to utilize its innovation to facilitate competitiveness.

5.3 RECOMMENDATIONS

Based on the findings alluded to above, the following recommendations are made for National Foods Limited:

5.3.1 Management of change

Management of change is crucial for any organization that seeks to innovate and achieve competitiveness from such innovations. National Foods Limited for that reason needs to embark on change management so as to reduce impediments. Thus they need to effect the following changes in their management system:

- Encouraging the entrepreneurship spirit and at the same time rewarding performance and new ideas whilst allowing for errors that are encountered in doing so.
- Errors should be embraced as a learning process for the employees, as long as they can be corrected and the employee guided on the way forward.
- Employees should be involved in the implementation of the innovation strategy from the moment of deciding to innovate, and they should be allowed to air out their views about any innovations. The rationale for the innovations should be explained to the employees in order to get buy-in from the employees.
- Establishing a clear change management strategy at the top level of the organization and communicating the shared vision to the rest of the organization.
• Creation of an open climate which allows individuals to express their anxieties and concerns.

5.3.2 **Retain critical employees**
National Foods Limited should devise and execute human resources strategies intended at retaining critical employees. Employees of an organization are key to the achievement of any strategy, such as innovation and competitiveness. National Foods Limited management can adopt an open door policy, so as to get the views of the employees, and facilitate their involvement, so as to improve morale, thereby retaining the employees.

5.3.3 **Adequately budget for and fund innovation strategies**
For any organisation’s strategy to be successfully implemented, there is need for adequate budget provision and adequate funding, without which implementation would not be successful. It is recommended that, those who are involved in coming up with innovative ideas and those involved in the implementation of such ideas, should take part in the budgeting process, in order to avoid any shortfalls that can derail the progress of the innovation strategy.

5.3.4 **Align innovation strategy to organisation objectives**
National Foods Limited should constantly monitor their innovations and ensure that they are aligned to the objectives of the organization. Where there are divergences, these should be corrected in a timely manner to avoid any conflicts arising between the organisation’s objectives and the innovation strategies. Thus, if the innovations and objectives of the organization are not aligned, this can lead to lack of focus as well as conflicts between and within functions. This then leads to failure to achieve the desired results.

5.4 **AREAS OF FURTHER RESEARCH**
This study focused on innovation as a competitive tool, but there are other areas that could have been covered. However due to time limitations these areas could not be covered. It is recommended that further studies be carried out in the following areas:

I. The link or relationship between organizational learning and innovativeness.
II. Impact of government (public) policies on innovativeness.
III. The impact of absorptive capacity of an organization on innovativeness.
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Appendices

APPENDIX I

INTERVIEW GUIDE FOR MIDDLE MANAGERS AND SENIOR MANAGERS

SECTION A: BACKGROUND OF RESPONDENT

1. What is your title in the organization?
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2. What is your professional/academic background?
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3. How many years have you been employed by the organization?
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4. How long have you been in your current position?
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SECTION B: INNOVATION AND COMPETITIVENESS

1. What innovative products did National Foods came up with and explain whether this was motivated by the need for competitive advantage?
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2. To what extend do public policies affect the link between innovation and competitiveness?
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3. Explain whether National Foods Limited has the appropriate conditions to utilize their innovation into competitiveness in your organisation?

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4. To what extent does National Foods utilise internal and external expertise to come up with innovations?

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SECTION C: BENEFITS OF INNOVATION TO NATIONAL FOODS LIMITED

1. In what way have the innovation made National Foods’ competitive in the Milling Industry?

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2. What are the benefits derived by the organisation from innovating.

3. What benefits did the organization’s clients derive from the innovation?

4. What benefits did employees enjoy as a result of the innovations?

SECTION D: Conditions for Effective Utilisation of Innovation

1. Which key assets and resources of the organization enhanced innovativeness?
2. What are National Foods Limited’s inimitable resources that gives it competitive advantage over its competitors?

3. Describe how the innovation strategy of National Foods Limited is considered to be compatible with the organization’s overall objectives?

4. How was the performance of National Foods Limited as compared to competitors?

5. Which innovation type does National Foods employ most?
Section E: Factors affecting Innovations

1. To what extent were innovation plans and projects of National Foods budgeted for and funded?

2. What was the attitude and perceptions of the employees to innovation plans and projects during the period of implementation?

3. What were the impediments that fettered successful innovation and competitiveness?

4. From your own point of view, what initiatives should be taken to minimize the effects of these impediments?

End
APPENDIX 2

INTERVIEW GUIDE FOR DIRECTORS AND HEADS OF DEPARTMENTS

SECTION A: BACKGROUND OF RESPONDENT

1. What position do you hold in the organization?
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2. What is your professional/academic background?
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4. How many years have you been employed by the organization?
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5. How long have you been in your current position?
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SECTION B: PLANNING AND IMPLEMENTATION OF THE INNOVATION STRATEGY

1. National Foods Limited embarked on innovation projects which included new and improved PET Food. What role did you play in the planning and implementation of these projects?
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2. What role did your department play in the innovation strategy?

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3. Was your division involved in the planning stage of the innovation strategy? Explain how you were involved.

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4. Explain whether competition is a powerful incentive for National Foods Limited to innovate and acquire innovation based competitive advantage?

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SECTION C: BENEFITS OF INNOVATION TO NATIONAL FOODS LIMITED

5. In what way have the innovation made National Foods’ competitive in the Milling Industry?
6. What are the benefits derived by the organisation from innovating.
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7. What benefits did the organization’s clients derive from the innovation?
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8. What benefits did employees enjoy as a result of the innovations?
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SECTION D: Conditions for Effective Utilisation of Innovation

6. Which key assets and resources of the organization enhanced innovatiness?

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7. What are National Foods Limited’s inimitable resources that give it competitive advantage over its competitors?

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8. Describe how the innovation strategy of National Foods Limited is considered to be compatible with the organization’s overall objectives?

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9. How was the performance of National Foods Limited as compared to competitors?

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10. Which innovation type does National Foods employ most?

Section E: Factors affecting Innovations

5. To what extent were innovation plans and projects of National Foods budgeted for and funded?

6. What was the attitude and perceptions of the employees to innovation plans and projects during the period of implementation?

7. What were the impediments that fettered successful innovation and competitiveness?
8. From your own point of view, what initiatives should be taken to minimize the effects of these impediments?

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