Users as Co-Inventors: A Model for Involving Users in the Early Stages of New Product Development

Sarah Foley

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INSTITIÚID TEICNEOLAÍOCHTA PHORT LÁIRGE

Research Supervisors:

Dr. Patrick Lynch

Dr. Mary T. Holden

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Declaration

The author hereby declares that, except where duly acknowledged, this research study is entirely her own work and has not been submitted for any degree or other qualification in Waterford Institute of Technology or any other third level institution in Ireland or abroad.

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Sarah Foley, June 2011

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Sarah Foley

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Abstract

Despite the increasing importance attributed to the involvement of users in the early stages of the new product development process, there have been only limited attempts that comprehensively detail how the user involvement approach is implemented in practice. This knowledge deficit is having consequential effects on user involvement, making its successful implication difficult to achieve as user involvement is heavily dependent on how the involvement process is managed (Magnusson et al., 2003). This study aims to close this knowledge gap by presenting a managerial framework for maximising user involvement in predevelopment activities and in so doing, will obtain implementable guidelines that can be used by organisations to enhance the delivery of innovative and appealing new product concepts.

The existing literature on user involvement and relationship marketing were utilised as a starting point to develop an integrated framework. In addition to this, data was gathered from a longitudinal study. Due to the nature of the research, that is, the need to understand a real-life phenomenon in depth, as well as the fact that relatively little knowledge is available on the research topic, it was deemed appropriate to merge aspects from action research with a single interpretive case study approach. This allowed the researcher to become actively involved with the phenomenon under research, hence, facilitating the gathering of a comprehensive collection of qualitative data on the actual interactions that occurred between the manufacturer and user.

The key findings of this research illustrated the importance of managing the complex relational dynamics inherent in a close collaborative manufacturer-user relationship. In addition, the findings clearly indicated that the involvement of users does not occur in a vacuum. Rather, the success of the collaboration is influenced by a number of enabling factors, which combine to influence the ways in which the manufacturer and user structure and manage their interactions. The findings further indicate that the benefits of such collaborations may only be enjoyed when the process is managed in an effective and efficient manner, thus the presence of an individual capable of coordinating the process is essential. The thesis concluded with the development of an ‘integrated framework’ for managing user involvement at the early stages of the new product development process.

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Chapter One

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Introduction

1 Introduction

In aggregate terms, Ireland lags considerably behind other European Union (EU) and Organisation for Economic Cooperation and Development (OECD) countries in terms of innovation activity. Currently there is widespread agreement at government and industry level that Irish manufacturers need to become more innovative (Forfás, 2009; Forfás, 2010; Innovation Ireland, 2010). Indeed, it is only through the creation of new products that most Irish firms can hope to sustain growth and profitability in the long term (Forfás, 2004a). However, innovation appears to be a difficult task for Irish companies. For instance, in 2009 Irish companies spent over half of their research and development expenditure on new products and process development (Central Statistics Office, 2009), yet, the output in terms of success, that is, patents registered, is regarded by most as being unacceptably low (Forfás, 2005a; 2007; 2009). Why Irish companies appear to be less innovative than their counterparts in the EU and the OECD, has been the topic of a myriad of investigations by Forfás[1] (2004a; 2004b; 2004c; 2005a; 2005b; 2010).

One dominant theme that continuously appears to emerge from their studies, is that Irish firms need to collaborate more frequently with external parties, such as users[2] during the early stages of the development process, that is, those stages prior to any actual development (idea generation, screening, preliminary assessments, concept development and testing). Indeed, Forfás (2004c) suggests that users are the most important source of innovation for Irish manufacturers and that these collaborations must be encouraged and facilitated particularly in pre-development stages.

This logic is consistent with extant academic literature. In fact, it has almost become an axiom in the new product development literature, that while certain success

[1] Forfás is Ireland's national policy advisory body, providing policy advice on enterprise, trade, science, technology and innovation in Ireland.

[2] In the current research, the term 'user' is employed in the context of a business-to-business relationship and refers to companies who do not manufacture an innovation, but incorporate it into the assembly of a finished product or process (Gales and Mansour-Cole, 1995; von Hippel, 1988). We provide this definition clarification because, in the literature, the term user involvement has also been used in the context of end users' participation in the product development of consumer products (Shah, 2000) and also in an intra-organisational context (Leonard and Rayport, 1997; von Hippel, 1988).

factors pertain to the development and commercialisation stages, the majority are determined much earlier in the project's life, explicitly in the early or pre-development stages (Booz-Allen and Hamilton, 1982; Cooper, 1993; Cooper and Kleinschmidt, 1996; Stevens *et al.*, 1999). Numerous theoretical and empirical studies have implied that the involvement of users can be a valuable means of reducing the uncertainty associated with new product development, enhancing the development process and increasing the likelihood of generating innovative new product concepts (Biemans, 1992; Cooper, 1999; Lilien *et al.*, 2002; Lüthje and Herstatt, 2004).

Despite the acknowledgement in both academic and government circles, that user involvement in these initial stages of new product development is critical for innovation success; managerial guidelines that enable manufacturers to successfully involve users in pre-development activities are scarce. Indeed, to date, there has been an over dominance by most user involvement researchers to focus much of their attention on the sources of innovations (von Hippel, 1976) or on relating positive outcomes to patterns of collaborative inputs, such as the characteristics of users and their contributions (Gruner and Homburg, 2000) or on the identification of lead users (von Hippel, 1978) or the patterns of involvement (Cicantelli and Magidson, 1993) and on failure to manage the process (Biemans, 1992) but with scant attention to managing the process (Lynch and O'Toole, 2003; Lüthje and Herstatt, 2004). Therefore, managerial guidelines that enables manufacturers to successfully interact, collaborate and involve their users in the pre-development process are absent in the user involvement and innovation literature (Van de Ven, 1992; Pettigrew, 1992; Biemans, 1992; Ring and Van de Ven, 1994; Dabholkar *et al.*, 1994; Doz, 1996; Holmlund and Strandvik, 1999; Holmlund, 2004; Ulwick, 2005). While this gap has undoubtedly been widely acknowledged in literature, it nevertheless remains a neglected issue. This knowledge deficit has consequential effects on user involvement, making its successful application difficult to achieve, as user involvement is heavily dependent on how the involvement process is managed (Magnusson *et al.*, 2003). The involvement of users generates little lasting effect, unless, a process by which manufacturers can successfully manage their involvement

in pre-development activities is formulated (Ring and Van de Ven, 1994; Spekman *et al.*, 1998; Johnsen and Ford, 2000).

For Lynch and O'Toole (2004), this knowledge gap does not imply that user involvement is not warranted, it merely emphasises the need for greater attention on how to best manage the process. Nevertheless, it would be deceptive to state that literature has not explored methods to implement user involvement in the pre-development process. Various attempts exist such as, von Hippel (1986), Biemans (1992), von Hippel (2001), von Hippel and Katz (2002). However, it is suggested that none of these attempts are totally comprehensive (Johnsen and Ford, 2000; Lynch and O'Toole, 2003; Lüthje and Herstatt, 2004; Lettl, 2007). Moreover, these few specialist studies that do exist tend to approach the concept from a mechanistic perspective, with the focal firm organising user involvement in a hierarchical rather than a collaborative way. Yet user involvement implies a cooperative approach to new product development. For Biemans (1992), it is this knowledge deficit that has resulted in academics being unable to provide practitioners with the solutions needed to implement user involvement effectively and so the effort of actually cooperating with users in practice will be even more difficult to achieve. Simply stated, in order for manufacturers to effectively collaborate and involve users in the early stages, they need more than input conditions, or whether users are innovative, or the identification of lead users. In order to transform an abstract idea into reality, manufacturers need an understanding of the content of their interactions with those key users. The line of reasoning underpinning this study has been long advocated by Forfás (Forfás, 2004a; 2004b; 2004c; 2005a; 2005b).

1.2 Research Problem and Objectives

The research problem emanating from the literature was that managerial guidelines that enables manufacturers to successfully interact, collaborate and involve their users in the pre-development process is absent in the user involvement and innovation literature (Van de Ven 1992; Pettigrew, 1992; Biemans, 1992; Ring and Van de Ven 1994; Dabholkar *et al.* 1994; Doz, 1996; Holmlund and Strandvik, 1999; Holmlund, 2004). Based on the aforementioned, the overarching objective of this research is:

- To develop a managerial model that will maximise user involvement in the early stages of the new product development process to deliver innovative and appealing new product concepts.

To achieve this, the following sub-objectives emitted:

- To identify enabling factors which allow for the involvement of lead users at the early stages of the new product development process;
- To identify the operational process for involving lead users;
- To identify the critical relational variables needed for lead user involvement;
- To examine the performance impact of interaction with lead users in early stages of the new product development process.

1.3 Methodology Employed

The extant literature on user involvement and relationship marketing were utilised as a starting point to develop an integrated framework for involving lead users in the early stages of the new product development process. In addition to the development of the conceptualised framework from the theory basis, data was gathered from a longitudinal study. Due to the nature of the research question, that is, the need to understand a real-life phenomenon in depth, as well as the fact that relatively little knowledge is available on the research topic, it was deemed appropriate to merge aspects from action research with a single interpretive case study approach. This approach allowed the researcher to become actively involved with the phenomenon under research, hence, facilitating the gathering of a comprehensive collection of qualitative data on the actual interactions that occurred between the manufacturer and user during the early stages of the new product development process.

1.4 The Structure of the Dissertation

This dissertation comprises of eight chapters. The present chapter introduces the wider context that the research problem relates to and the emergence of the research problem. Next, the objectives of the research and the research questions are

presented. Finally, the methodology employed is outlined and each chapter in the research process is discussed.

In chapter two, numerous theoretical perspectives are examined in order to discover the most suitable theoretical basis that is applicable to the research problem. Subsequently, the chapter justifies the theory of social exchange as an appropriate theoretical basis for developing a managerial model that will maximise user involvement in the early stages of the new product development process to deliver innovative and appealing new product concepts.

Chapter three examines the relevant literature that has contributed to the theory of user involvement in pre-development activities over the years. To achieve this, the chapter commences by reviewing the evolution of the user involvement perspective. Next, the evidence and the nature of user involvement are examined. Finally, conclusions will be drawn upon the current process proposed by literature to manage user involvement at the early stages of the new product development process, offering a balanced interpretation of the process.

Chapter four investigates the elements necessary to advance literatures guidelines for involving users at the early stages of the new product development. To achieve this, the chapter reviews three areas identified by literature to manage the relationship between the manufacturer and the user. That is, the presence of enabling factors, relationship variables and an individual capable of coordinating all aspect of the collaboration. Finally, utilising this reviewed literature, a theory based integrated model that enables manufacturers to successfully interact, collaborate and involve their lead users in the pre-development process is conceptualised and discussed.

Chapter five presents the philosophy and methodological overview for the current study. Both the foundation and justification for the chosen research approach is clarified and rationalised. Next, the research objectives and research questions are stated. The latter part of this chapter details the design, implementation and legitimisation of the current study, which allowed for the successful examination of

the content, context, processes and outcomes, of lead user involvement in the early stages of new product development.

Chapter six provides the reader with a detailed account of the results arising from the longitudinal in-depth case study. The results supplied will provide a platform upon which findings will be discussed, conclusions drawn and recommendations made in the subsequent chapters.

In chapter seven, any resemblance or variances between the theories of user involvement outlined in the literature review with the dissertations primary research is discussed. This discussion provided a platform upon which a refreshed framework that enables manufacturers to successfully interact, collaborate and involve their users in the early stages of the new product development process will be presented in the subsequent chapter.

Finally, chapter eight presents the research outcomes, based on the research objectives which were formed to ensure that this research purpose was satisfied. Thereafter, the revised integrated model that enables manufacturers to successfully interact, collaborate and involve their lead users in the early stages of the development process is present and discussed. The contributions and limitations of this research are examined as well as recommendation for future academic research.

Chapter Two

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Theoretical Perspective

2 Theoretical Perspective

2.1 Introduction

According to Whittington (2001: 9) it is important to identify theoretical assumptions when conducting research as "they contain our basic assumptions about key relationships in business life. Theories tell us what to look out for, what our first steps should be, and what to expect as a result of our actions". Similarly, Argyris (1977) warns that nothing is more dangerous than leaving underlying assumptions hidden. Heeding the foregoing warnings, the purpose of this chapter is to examine numerous theoretical perspectives in order to discover the most suitable theoretical basis that is applicable to the research problem. The chapter justifies the theory of social exchange as an appropriate theoretical basis for developing a managerial model that will maximise user involvement in pre-development activities to deliver innovative and appealing new product concepts.

2.2 Relationship Marketing

As the world and society evolves over time, so does business and management process and practices. As one of the established business and management disciplines, marketing has evolved accordingly (Warnaby *et al.*, 2010). During its evolution, different perspectives on marketing have been adopted. One significant perception in the 1980s was the concept of relationship marketing. Since its conception it has 'experienced explosive growth' both in business practice and academic research (Srinivasan and Moorman, 2005). This concept has been hailed by academics as "a fundamental reshaping of the field*"* (Webster, 1992: 1), "a major shift in the perception of the fundamentals of marketing" (Gronroos, 1997: 2) and "the future of marketing" (Buttle, 1996: v).

While the merits of relationship marketing are generally agreed upon, in the literature (Barringer and Harrison, 2000; Morgan and Hunt, 1994), a few authors have warned that much of what has been written in recent years has been empty rhetoric and have called for a more objective, rational and rigorous examination of what the concept actually involves (Donaldson and O'Toole, 2007; Moller and

Halinen, 1999). Furthermore, the theoretical literature on relationship marketing is fragmented, with several disciplines contributing to the field (Jensen and Meckling, 1976; Williamson, 1975; 1985; Pfeffer and Salnick, 1978; Frazier, 1983; Macneil, 1980; Håkansson, 1982; Biemans, 1992). Consequently, no conceptual theory of relationship marketing has been developed, instead "what we have is a variety of partial descriptions and theories focusing on the broad content of the phenomena researchers have labelled relationship marketing" (Egan and Harker, 2005: 171). A further consequence of the fragmented nature of the theories contributing to relationship marketing is the utilisation of multiple approaches by researchers to investigate the phenomenon and so employing different theoretical sources, different frames of reference and different units of analysis (Donaldson and O'Toole, 2007; Moller and Halinen, 1999). The theories selected to aid in the understanding of relationship marketing illustrated in Table 2-1 are amongst the most widely used paradigms. These theories tend to be on a continuum from an economic rationale to behavioural based. Each one will be examined in detail.

Table 2-1 Theoretical Concepts that can be Applied to Relationship Marketing

Theory	Basic concept	Examples of authors
Agency	Exchange risk	Eisenhardt (1989)
Transaction cost economics	Economies of transactions	Williamson (1979)
Resource dependency	Power /conflict	Pfeffer and Salancik (1978)
Social/relational exchange	Social embeddedness	Blau (1964); Macneil (1980)

Adapted from: Donaldson and O'Toole (2007)

2.2.1 Agency Theory

This theory proposes that a dyadic contractual relationship exists when one party, the principal, delegates an action to another party, the agent. The theory assumes that both parties are rational, have differing attitudes towards risk, are self-interested and will engage in opportunistic behaviour (Jensen and Meckling, 1976; Eisenhardt, 1989). The focus of this paradigm is the development of the most efficient contract, in order to align the interests of the agent with those held by the principal (Eisenhardt, 1989). Agency theory defines the optimal contract in terms of maximising the best possible outcome for the principal, as it is assumed that the principal has the dominant role in the relationship (Bergen *et al.*, 1992).

The contribution of this theory to the understanding of relationships may be exemplified by utilising the metaphor of a contract to explain "the type and level of relationship interaction that exists between two parties" (Donaldson and O'Toole, 2007: 25). Bergen *et al.,* (1992) suggest that agency theory is likely to have implications for relationships that are characterised by the factors unique to the theory, that is, factors that make contracting with and controlling the performance of agents difficult. The authors recommend that agency theory should be utilised to examine situations involving "(1) substantial goal conflict between a principal and its agents, (2) sufficient environmental uncertainty to trigger the risk-sharing implications of the theory, (3) substantial information asymmetries, and/or (4) difficulty in evaluating performance" (ibid: 19). Eisenhardt (1989) asserted that overall the domain of this theory is relationships that mirror the basic agency structure of a principal and an agent who are engaged in cooperative behaviour, but have different goals and attitudes towards risk.

Numerous authors have been critical of agency theory and its ability to explain complex issues that occur in relationships. For instance, Hirsch *et al.* (1987) argue that because agency theory is dominated by the economic paradigm, it has narrowly incorporated price theory and a single view of human nature and self-interest into its structure. This narrowness of focus restricts the usefulness of the theory, in fully understanding relationship phenomena that is affected by human motives. Consequently, Bergen *et al.* (1992: 19) suggest that the rigorous structure of economic theory limits agency theory to only analysing "the simplest cases or to assume away many of the variables that complicate the decisions faced by marketing managers". Based on the foregoing, its narrow economic focus does not permit the theory to capture the complex relational dynamics involved in a close collaborative relationship (Bergen *et al.*, 1992). Hence, the theory was deemed unsuitable as a theoretical foundation for investigating the close relationships between a manufacturer and users.

2.2.2 Transaction Cost Economics

The next paradigm for deliberation, transaction cost economics, is primarily based on two similar assumptions incorporating human behavioural traits and requirements

for success, in order to design efficient mechanisms for conducting inter-organisational transactions (Williamson, 1985). For the author, the transaction is the basic unit of analysis and the underlying viewpoint that informs the comparative study of issues of economic organisation. Therefore, "by assigning transactions (which differ in their attributes) to governance structures (the adaptive capacities and associated costs of which differ) in a discriminating way" (ibid: 18). The theory maintains that all exchanges on scrutiny have an implicit contracting quality and that any issue that can be formulated as a contracting problem can be examined in transaction cost economising terms (ibid). The theory advocates that it is (1) microanalytic, (2) self-conscious about its behavioural assumptions, (3) recognises the importance of asset specificity, (4) relies on comparative institutional analysis, (5) regards the business firm as a governance structure rather than a production function, and (6) places great weight on the *ex post* institutions of contract (Williamson, 1985).

Criticisms have been directed at transaction cost economics mainly because of its presumption that exchange relationships are controlled by norms of opportunism prescribing a form of individualistic behaviour (Heide and John, 1992). Furthermore, Heide and John criticise the theory for not specifying the mechanisms by which firms can structure relationships in the desired manner and the inability of conventional wisdom in transaction cost analysis to account for complex no market governance modes between nominally independent firms. However, Donaldson and O'Toole (2007) argue, that transaction cost economics is not without its merit when they suggest that the theory begins to explain the differences in types of transactions and to what extent integration occurs. Similarly, Heidi and John (1992: 41) do acknowledge that the "distinct strengths of transaction cost theory is its explicit normative treatment of governance issues and its detailed analysis of the conditions under which particular structural arrangements are appropriate". This theory could apply a rational framework to understanding the manufacturer and user interactions during the new product development process. However, the over socialized perspective of institutional dominance portrayed by transaction economics ignores the socialised perspective of human reasoning that would occur during the

manufacturer and user interaction. Hence, transaction cost economics was also deemed unsuitable as a theoretical foundation.

2.2.3 Resource Dependence

The principle of resource dependence is grounded in an open systems theory, which asserts that organisations participate in resource exchange relationships because no one organisation possesses the resources needed to be self-contained (Barringer and Harrison, 2000). Resources are essential for the continuing survival of the organisation and so the environment must be relied upon to provide critical inputs. The continued supply of needed resources results in a dependence on partnering firms (Donaldson and O'Toole, 2007). This theory differs from the resource-based view of the firm where the focus is more internal. The resource-based perspective maintains that competitive advantage is achieved when the resources internal to the company are rare and difficult to imitate (Wernerfelt, 1984). Conversely, the resource dependence theory maintains that a company must acquire resources from external sources in order to survive. Resource dependence arises as a result of three factors (1) the extent to which the resource is significant for the continued operation of the organisation, (2) the extent to which the interested organisation has discretion over the allocation and use of the resource, and (3) the extent to which alternative resources exist (Pfeffer and Salnick, 1978).

In spite of its straightforward appeal, resource dependence theory has limitations with regard to its ability to fully explain the concept of relationships. Barringer and Harrison (2000) raise the issue that this theory does not explain why organisations might pursue other avenues of strategy besides forming relationships, in order to satisfy resource deficiencies. A company, for example, might recruit key personnel from a competitor or obtain a resource through a market transaction. The theory simply argues that because no firm is self-sufficient, organisations must form relationships with external sources to obtain these resources. Additionally, how organisations interact with other parties, transfer or extract the competencies or develop the competencies once they have been transferred is left to other theories to explain (Barringer and Harrison, 2000). Whilst the theory would contribute to the understanding of the interactions between a manufacturer and user by

conceptualising them as an asset or resource, the theory tends to focus on exploiting firm-specific resources and so is inherently competitive rather than cooperative. Thus, it offers little insight into how the users involved in the inter-organisational collaboration, actually cooperate and interact (Teece *et al.*, 1997). Hence, the resource dependence theory was not the optimum theoretical bases in this regard.

2.2.4 Social Exchange Theory

The next paradigm for deliberation, the social exchange theory "grew out of the intersection of economics, psychology and sociology" (Wübben, 2008: 58) and was developed to understand the social behaviour of humans in economic undertakings (Homans, 1958). A social exchange perspective recognises that the basis of all forms of exchange is the concept of social interaction, as the exchange involved could not be completely specified in a formal contract (Blau, 1964). Similar to economic exchange, social exchange generates an expectation of some future return for contributions, however, in contrast to economic exchange, the exact nature of this return is unspecified (Blau, 1964) and may include, "currency, information, goods, services, respect, power, social support, social approval etc" (Loue and Sajatovic, 2007: 340). Furthermore, in comparison to economical exchange, "social exchange tends to engender feelings of personal obligation, gratitude, and trust" (Blau, 1964: 94). This results in actors in the relationship inevitably adding "new kinds of exchanges to the one that brought the relationship into being in the first place; and these new exchanges may further cement the original one or undermine it through conflict" (Burgess and Huston, 1979: xviii) and so "a complex personal and organisational structure evolves between the partners" (Donaldson and O'Toole, 2007: 29).

Inherent within this paradigm is the assumption that social interest is anchored in self-interest and that this is achieved when equity prevails among actors in the relationship (Homans, 1958). Actors become more committed to a relationship when they believe that the value of each actor's outcome is proportional to the value of each actor's contribution (ibid). Gouldner (1960) posits that reciprocity, whether mutual or univocal, is the underlying foundation that maintains ongoing social systems and relationships and consequently influences the satisfaction and

commitment of actors to the relationship because it engenders long-term obligations among the actors. Based on the foregoing review of literature, it was deemed appropriate that the current study would adopt the theory of social exchange as a theoretical basis. As the social exchange perspective recognises that basic to all forms of exchange is the concept of social interaction (Blau, 1964). Hence, the theory should permit capturing the complex relational dynamics involved in a close collaborative relationship between a manufacturer and user, allowing for the development of a managerial model that will maximise user involvement in the early stages of the new product development process to deliver innovative and appealing new product concepts.

2.3 Summary

In summary, through the examination of numerous theoretical perspectives, it is evident that applying the social exchange theory to the research problem should yield a more comprehensive understanding of the phenomenon than the other theoretical perspectives could produce. Indeed, this theory should permit the amendment of the inadequacy of the existing process-oriented models. That is, that the existing models tend to adopt a rather isolated view of collaborations, neglecting to incorporate the dyadic relationships between the manufacturer and user, which are embedded in the process, resulting in the underlying evolutionary processes by which the interaction unfolds over time being undefined (Johnsen and Ford, 2000). Indeed, successful collaborations can only be built through combining the transactional elements of the collaboration with attention to the relational interplay between the key actors (Spekman *et al.*, 1998).

Chapters Three & Four

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Literature Review

3 User Involvement in the Early Stage of the New Product Development Process

3.1 Introduction

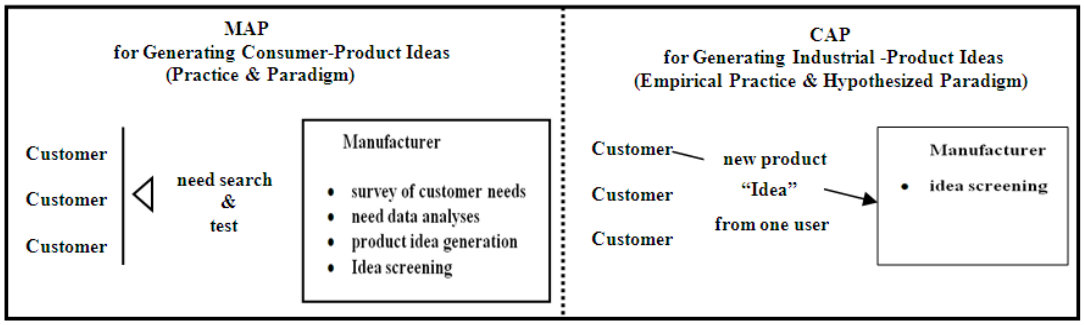
Edvardsson *et al.* (2006: 36) define user involvement as "those processes, deeds, and interactions where a product or service provider collaborates with current (or potential) customers at the programme, project, and/or stage level of innovations, to anticipate customer's latent needs and develop new product or service accordingly". The ethos behind the concept is that, by spending time with users and allowing them to take part in activities, deep insights into their needs and wants may emerge which can guide the new product development process (Flint, 2002). The purpose of this chapter is to examine the relevant literature on user involvement in pre-development activities that has accumulated over the past 35 years. To achieve this, the chapter commences by reviewing the evolution of the user involvement perspective. Subsequently, the evidence and the nature of user involvement will be examined. Finally, conclusions will be drawn upon the current process proposed by the extant literature to manage user involvement at the early stages of the new product development process, offering a balanced interpretation of the process, concentrating on its merits but not failing to highlight its flaws.

3.2 Evolution of the User Involvement Perspective

Historically, innovation was considered the sole province of the manufacturer and for many years, new product development models were conceptualised from this perspective (Biemans, 1995; Tidd *et al.*, 2001; Bogers *et al.*, 2010). Indeed, manufacturers were deemed to be the dominant source of innovation and the main actor who initiates and controls the new product development process. Although, in the 1920s, Alfred Marshall observed that, in practice, innovations are not always performed by manufacturers alone. He advocated that in some industries the user of the innovation may play an important role. However, his perspective did not receive much academic attention for numerous years until the publication of Eric von Hippel's two empirical investigations in 1976 and 1977, where he promoted the involvement of users in the idea generation stage of the new product development

process. His research highlighted that innovation was user-dominated in some industries, while in others, manufacturers were predominately stronger innovators. This led von Hippel (1978) to conclude that there are in fact two dissimilar paradigms and proposed a model of user dominated innovation process in contrast to the Manufacturer - Active Paradigm (MAP) as illustrated in Figure 3-1.

Figure 3-1 Manufacturer - Active Paradigm (MAP) vs. Customer - Active Paradigm (CAP)



Source: von Hippel (1978)

According to von Hippel, MAP describes the idea generation process that is involved in consumer markets where:

> *The role of the customer is essentially that of respondent, "speaking only when spoken to". It is the role of the manufacturer to select and survey a group of customers to obtain information on needs for new products or modifications of existing products; analyse the data; develop a responsive product idea; and test the idea against customer perceptions and purchase decisions (von Hippel, 1978: 40).*

For Biemans (1992), the description is applicable to product development processes in consumer goods markets, where there is a large quantity of potential users that are easily identified, user needs are slow to change and manufacturers have a long development and marketing time span for their products. Whereas its counterpart, the Customer - Active Paradigm (CAP), reflects on the process in industrial markets, where the number of potential users are low, user needs change rapidly, and new product development is fast and in response to a particular problem. Furthermore, if a product cannot be found to meet their needs, the user may be forced to develop the innovation in house (Biemans, 1992), suggesting that users provide more than just product need information (von Hippel, 1978). They can also:

> *Develop the idea for new product; select a supplier capable of making the product; and take initiative to send a request to the selected supplier. The role of the manufacturer in this paradigm is: to wait for a potential customer to submit a request; to screen ideas (not needs) for new products; and to select those for development which seem to offer the most promise from the manufacturer's point of view (von Hippel, 1978: 40).*

Building on the conceptualisations of von Hippel (1978), Foxall and Tierney proposed a surrogate model termed CAP2, which "describes a user - innovator, who also takes an active, entrepreneurial role in the successful commercialisation of the new item" (Foxall and Tierney, 1984: 13). Thereby, not limiting customer interaction solely to the idea generation stage, but to the whole new product development process. Foxall and Tierney advocated that von Hippel's CAP implies that the manufacturer ultimately benefits from customer led invention and "tends to ignore the possibility of customer initiated entrepreneurship involving the alertness to opportunities for product innovation" (ibid: 13). The difference between MAP, CAP1 and CAP2 are summarised in Table 3-1.

Table 3-1 The Difference between MAP, CAP1 and CAP2

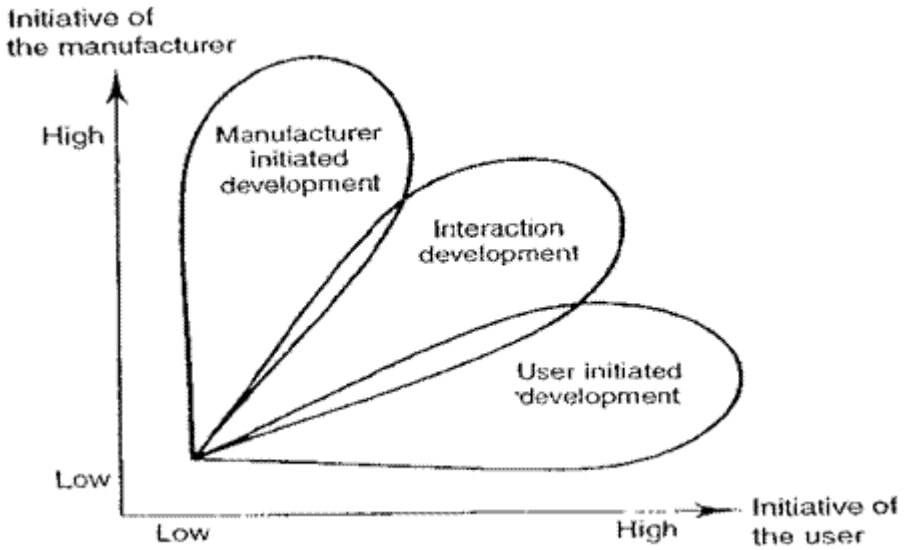
	MAP	CAP1	CAP
Locus of invention	Manufacturer	Customer	Customer
Locus of innovation	Manufacturer	Customer/ Manufacturer	Customer
Locus of entrepreneurship*	Manufacturer	Manufacturer	Customer/ Manufacturer

Note:* with respect to product innovation

Source: Foxall and Tirney (1984)

Håkansson (1982) proposed that instead of characterising the new product development process, as being a dichotomy between manufacturer and a customer active perspective, that a combination of these two views should cover the whole spectrum of product development and proposed an interaction approach as shown in Figure 3-2.

Figure 3-2 The Initiator of Product Development



Source: Håkansson (1987)

Empirical analyses from numerous research studies offer convergent evidence, depicting product development as an interactive process in which both the user and manufacturer have a significant role to play. Gruner and Homburg (2000) presented evidence that involving users at the early stages of the new product development process enhances the likelihood of product success. Furthermore, Maidique and Zirger (1985) found from an analysis of 40 products, that the products success were characterised by frequent and in-depth customer interaction at all levels of the development process. Similarly, in Germunden *et al.* (1992) study, which concentrates on new product development in a network context, established that nearly 50 percent of companies claimed that forming relationships with customers "had been a precondition for innovation success" (ibid: 367). Research in the Dutch medical equipment industry supports these conclusions by highlighting that successful product development is significantly correlated to relationships with other parties. Their reasoning for this is, that through interaction with a major customer, a company can develop products and services that fits the needs and wants of the market better, share development costs, gain access to new technologies and reduce development time (Biemans, 1992).

3.3 Evidence of User Involvement Existence

Since it conceptualisation, numerous empirical research studies have provided evidence that users frequently contribute to new product development efforts, particularly in industrial markets (von Hippel, 1976; 1977; Morrison *et al.*, 2000; Franke and Shah, 2003; Lüthje and Herstatt, 2004; Lüthje *et al.*, 2005). These studies serve to establish the diversity of industries that involve users, such as, the scientific instruments (von Hippel, 1976), semi conductors and electronic sub-assembly (von Hippel, 1977), machine tools (Parkinson, 1982), industrial machinery (Foxall and Tierney, 1984) applications software (Voss, 1985), medical equipment (Shaw, 1985; Biemans, 1991), library information systems (Morrison *et al.*, 2000) sporting equipment (Franke and Shah, 2003; Lüthje *et al.*, 2005) and commercial banking (Oliveira and von Hippel, 2009).

The foregone studies have also established that in some cases the majority of innovations are derived entirely from users. For example, in his 1977 study von Hippel found, that 67 percent of the significant advances in technology in a semi-conductor and electronic sub-assembly process were developed by the equipment users themselves and not by the respective equipment manufacturers. Comparable results have been found in the medical field where Shaw (1985) found that 76 percent of innovations were developed through multiple and continuous interaction with users, resulting in a success rate of 65 percent. These studies also highlighted that in some industries, users have self-provided solutions prior to their commercial development. For instance, Oliveira and von Hippel (2009) explored the history of 47 important commercial and retail banking services, discovering that, in 85 percent of these cases, users self-provided the service before any bank offered it.

In fact, the percentage of users who make improvements to prototypes or develop entirely new solutions is sizeable. As illustrated in the Table 3-2, a substantial number ranging from 10 percent to nearly 40 percent of users in different industries improve prototypes or develop completely new solutions. The results presented clearly reveal that in numerous industries, the percentage of users involved in developing solutions for their own use is significant (Lüthje and Herstatt, 2004; von Hippel, 2009), indicating that manufacturers and users are collaborating in pre-

development activities. Undoubtedly, Table 3-2 provides clear evidence that user involvement exists, and that they frequently initiate and even dominate the development process.

Table 3-2 Fraction of Users who Build Solution for their own Use within Different User Population

Innovation area	Number and type of users sampled	% developing and building product for own use
Industrial products		
1. Printed Circuit CAD Software (a)	136 user firm attendees at a PC-CAD conference	24.3%
2. Pipe Hanger Hardware (b)	Employees in 74 pipe hanger installation firms	36%
3. Library Information Systems (c)	Employees in 102 Australian libraries using computerized OPAC library information systems	26%
4. Medical Surgery Equipment (d)	261 surgeons working in university clinics in Germany	22%
5. Apache OS server software security features (e)	131 technically sophisticated Apache users (webmasters)	19.1%
Consumer products		
6. Outdoor consumer products (f)	153 recipients of mail order catalogs for outdoor activity products for consumers	9.8%
7. "Extreme" sporting equipment (g)	197 members of 4 specialized sporting clubs in 4 "extreme" sports	37.8%
8. Mountain biking equipment (h)	291 mountain bikers in a geographic region known to be an "innovation hot spot."	19.2%

Source: von Hippel, (2009)

3.3.1 Types of Users

Von Hippel's (1986) research has led to one particularly influential framework, the concept of lead users. Since not all users innovate to the same extent, the lead user concept was conceptualised to describe a particular type of user who are described as knowledgeable, often technically trained and have considerable interest in and experience with the manufacturer's products (Kaulio, 1998). Von Hippel (1986) concluded that collaborating with lead users in market research allows manufacturers to identify novel or enhanced product, process, or service that are presently absent in

the marketplace. He advocates that these lead users are identifiable by two characteristics:

> *1. Lead users face needs that will be general in a marketplace, but they face them months or years before the bulk of that marketplace encounters them.*
>
> *2. Lead users are positioned to benefit significantly by obtaining a solution to those needs (von Hippel, 1986: 776).*

Numerous empirical studies offer supporting evidence that the involvement of users that possess these characteristics can result in enhancing the new product development process (Gruner and Homburg, 2000; Lilien *et al.,* 2002; Morrison *et al.,* 2004; Ozer, 2009; Bogers *et al,* 2010). Furthermore, literature has established that the higher the intensity of lead user characteristics displayed by a lead user, the greater the commercial attractiveness of the innovation that the lead user develops (Franke and von Hippel, 2003).

In fact, the literature on new product development provides a list of user characteristics that will impact on product success (Gruner and Homburg, 2000), such as, technical expertises, financial attractiveness of the user and the closeness of the relationship between the manufacturer and user (Håkansson 1987; Gruner and Homburg, 2000). Literature also highlights the need for interdisciplinary know how and intrinsic motivation (Lettl, 2007), prior experience with co-developments (Bruce *et al.,* 1995) and a combination of adequate technological knowledge and superior knowledge of the user domain (Lüthje, 2004). Furthermore, Biemans (1992: 210) advocates that when selecting potential users, manufacturers should "determine the partner's representativeness, knowledge, objectivity, willingness to cooperate, market position, ability to keep confidential information, and ties to major competitors". In a similar vein, Johne (1994:52) warns that businesses may end up merely acting as sub-contractors for key customers. He advocates, that "for a business to utilise, rather than be totally driven by, customers...the business needs to discriminate between different types of customers".

3.4 The Nature of User Involvement in Pre-development Activities

In addition to the list of characteristics that impact on product success, literature also highlights a number of key dimensions that detail the nature of user involvement in

the early stages of new product development. These include the number of users, timing and frequency of interactions with potential users, the depth of user involvement and finally the roles of involvement (Gales and Mansour-Cole, 1995; Gruner and Homburg, 2000; Alam, 2002; Lynch and O'Toole, 2004). Each one will be explained in detail.

3.4.1 The Number of Users

The number of users refers to the quantity of potential users that are contacted in the process (Lettl, 2007). To date, the optimum number of potential users that should be involved in the early stages of the new product development process is a debated issue among academics. Different studies have found the optimum number to range from a high quantity of users, to the involvement of only a select few. For instance, Gales and Mansour-Cole (1995) advocate that involving a large number of users reduce the uncertainty associated with the early stages of the new product development process. The authors suggest that the number of users involved in the process should increase as product's progress through the stages of the new product development process. In contrast, Lettl (2007) suggests that the number of involved users should decline in the course of the new product development process. This view is based on the school of thought that uncertainty in radical innovation projects is higher in the pre-development activities and decreases throughout the new product development process (ibid).

Alternatively, Krapfel *et al.* (1991) argue that the degree of complexity involved in the management of numerous users increases with the number of participants. Similarly, Gales and Mansour-Cole (1995) found that interaction with large numbers of users at the "fuzzy front" end of the process is not suitable due to its unclear and amorphous nature. In fact, they concluded that the involvement of numerous users at this stage may lead to superficial interaction and produce insufficient information (ibid). Similarly, literature on team-work emphasises problems in developing and sustaining collaborations. One such observation reveals that there is a reduction in individual efforts as the number of people engaged in a collaborative task increased (Kravitz and Martin, 1986). Nevertheless, for some academics, this issue is immaterial as they consider innovation through user involvement in the early stage

of the new product development process to be limited to a progressive segment of users capable of contributing to the process, that is, lead users (von Hippel, 1986; Biemans, 1992; Olson and Bakke, 2001; Lüthje and Herstatt, 2004).

3.4.2 Timing and Frequency of Interactions with Potential Users

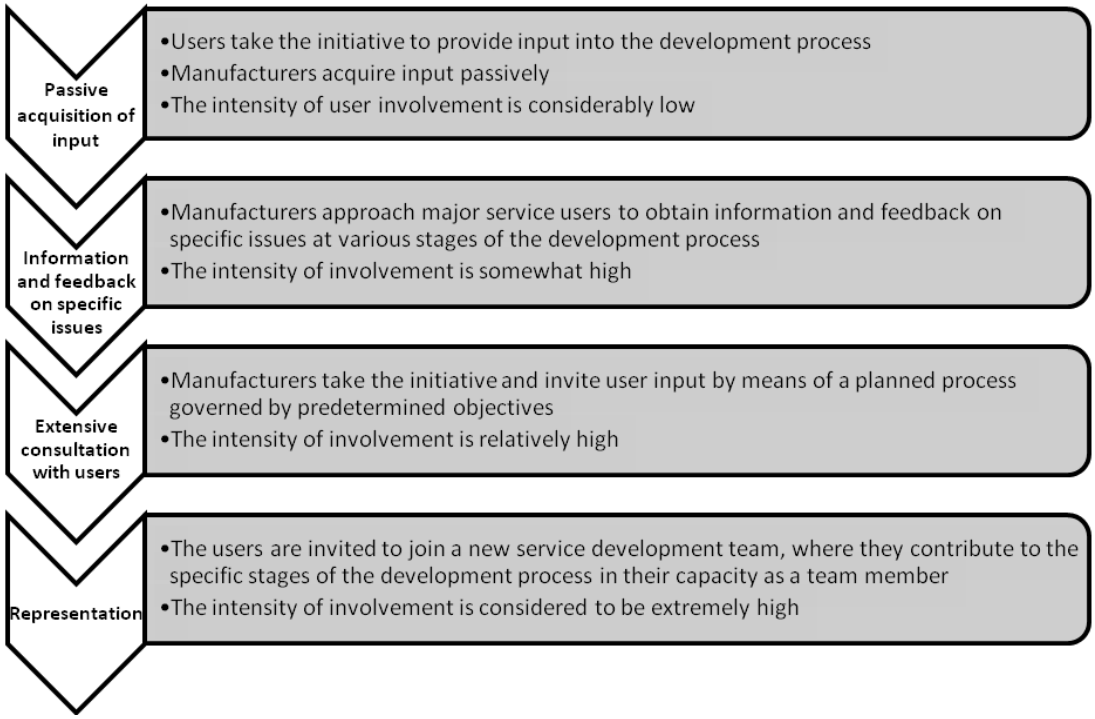
The frequency of interaction refers to the number of times that the manufacturer and user interact, whilst the timing of interaction refers to when users are actually involved in the development process (Gales and Mansour-Cole, 1995). In relation to the timing of user involvement, a recurring theme that emerges throughout the new product development literature is that for manufacturers to acquire the utmost benefits from the involvement of users in the development process, users should be involved as early as possible (Crawford, 1979; Booz-Allen and Hamilton, 1982; Shaw, 1985; Biemans, 1992; Cooper and Kleinschmidt, 2000; Kim and Wilemon, 2002; Lynch and O'Toole, 2004; Lüthje and Herstatt, 2004).

Furthermore, literature strongly suggests that frequent interaction at this stage is a pre-condition of success, as it reduces the uncertainty and ambiguity associated with the initial stages (Shaw, 1985; Cooper and Kleinschmidt, 1986; von Hippel, 1994; Alam, 2002; Dahlsten, 2004). For instance, Weick (1995) advocates that intense interaction can facilitate the development of a sense of participant's identity, which results in an increase in trust, psychological contacts, and interpersonal relationships. Additionally, frequent interaction also permits the development of shared norms, values, language, frames of reference, expectations and rich communications between the participants (Gales and Mansour-Cole, 1995). In fact, from their research on 40 products, Maidique and Zirger's (1985: 303) concluded that "as a rule, the development process for the successful products was characterised by frequent and in-depth customer interaction at all levels and throughout the development and launch process". Literature highlights the importance of this interaction being on a face-to-face basis, as this form of interaction is superior when transferring new and complex information from the user to the manufacturer (Madhavan and Grover, 1998; Lettl, 2007).

3.4.3 The Depth of User Involvement

The depth of user involvement refers to the intensity of participation the user has in the new product development process (Biemans, 1992). Alam (2002), in his study on the service industry, found that the depth of user involvement could be conceptualised along a continuum, as illustrated Figure 3-3.

Figure 3-3 The Depth of User Involvement



Source: Alam (2002)

In comparison to Maidique and Zirger's (1985) who argue that, the development process should comprise of in-depth customer interaction at all levels, Alam (2002) concluded that the intensity of user involvement in most organisations falls in the middle of the continuum or towards the representation end of the continuum. Furthermore, the involvement of users was reported to be more intense during the initial and later stages of the new product development process. This Alam argues, is because respondents considered the beginning and end of a process to be crucial.

Comparable results were evident in Gruner and Homburg's (2000) study on the intensity of user involvement in new product development in the German machine tools industry. The authors reported that the intensity of customer interaction in the

product development process is positively associated with new product success. Furthermore, their findings reveal that this result varies by process stage. That is, customer interaction during early and late stages of the new product development process can boost new product success, whereas interaction during the medium stages yields no impact (ibid). Similar results were found in Lynch and O'Toole's (2004) study when they encouraged manufacturers to involve users intensely in the screening of new ideas and in the concept development and testing stages in order to yield the most significant impact from user involvement. Furthermore, they stated that both the preliminary market and technical assessment stages yielded no significant impact from the intense involvement of users.

3.4.4 Roles of User Involvement

Numerous empirical investigations have provided evidence that users frequently participate in a diverse range of roles in the new product development process in order to create products that boast considerable market potential. Such roles include, formulating problems with existing products on the market, suggesting product improvements to such products and generating entirely new product concepts (von Hippel, 1977, 1978; Olson and Bakke, 2001; Lüthje, 2003; Carrillo-Hermosilla *et al.*, 2010). In addition to providing manufacturers with general information regarding end user requirements, extant research reveals that users are involved in preliminary assessments of technical aspects (Biemans, 1992), commenting on their formulation (Gruner and Homburg, 2000) and in some studies, it has been revealed that users even occupied the role of inventors and (co)-developers for radical innovations (Lettl, 2007). As discussed previously, in some instances it was even demonstrated that users not only initiated the process and generated ideas early in the process, but they dominated all subsequent stages of the innovation process, including prototyping and building first devices (von Hippel, 1976; 1977). However, in contrast to von Hippel's findings, Biemans (1992: 156) argues that:

> *Irrespective of the industry concerned, von Hippels reasoning should be expected severely to underestimate the necessary involvement of manufacturers in the initial stages of the process of product development. For, even when a manufacturer is approached by a user with a home-made device that has been built, tested and used in practice the manufacturer needs to carry out the critical initial stages of the product development process.*

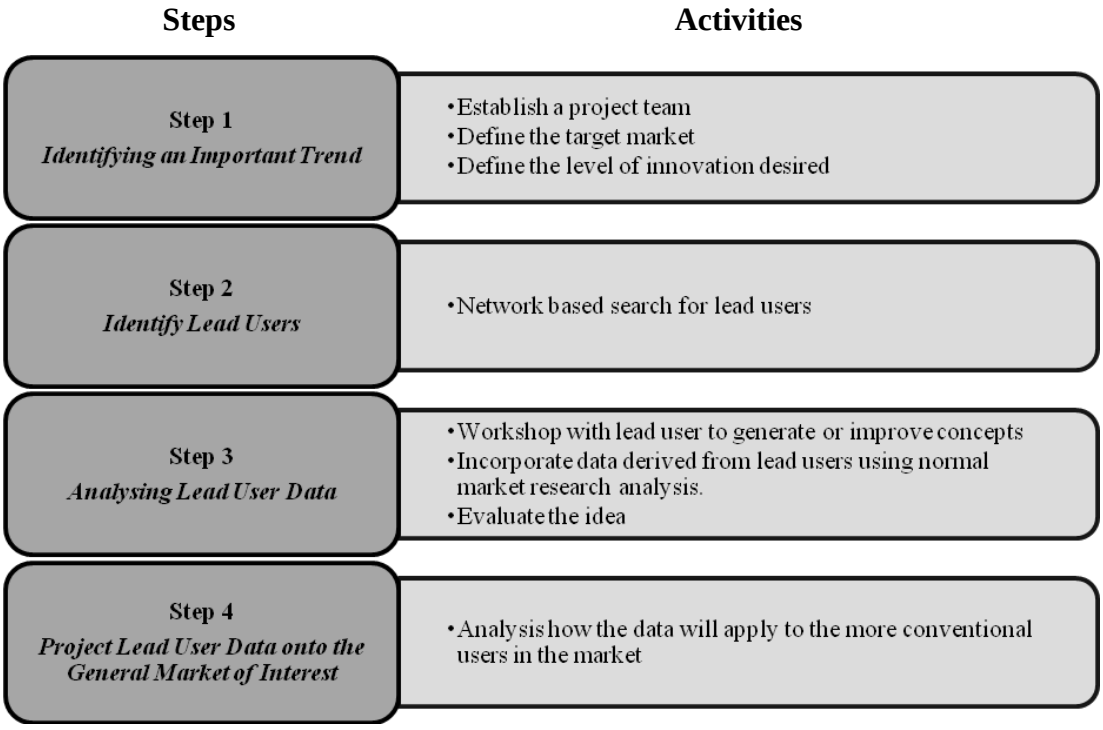
For some academics, the role of the user in the new product development process is limited or even non-existent, despite evidence that suggests users are a valuable source of new product concepts (Olson and Bakke, 2001). In fact, Lilien *et al.* (2002) suggest that manufacturers restrict the role of users, often only obtaining information regarding their needs and wants from representative users and assign employees with the task of generating innovative solutions, which leed to new products concepts.

3.5 Involving Lead User

Numerous studies have attempted to provide guidelines for involving users at the early stages of the new product development process. Influential approaches include; The Lead Users Method (von Hippel, 1986), The Consumer Idealised Design (Cicantelli and Magidson, 1993), The Quality Function Deployment (Kaulio, 1998), User toolkits (von Hippel, 2001) and ABCs of collaborative innovation management framework (Owen, 2008). The most prominent of which, is the lead user method, formulated by von Hippel in 1986. As illustrated in Figure 3-4, four generic steps operationalise this method of incorporating highly innovative users into the early stages of the development process. The development of the lead user method was followed by numerous conceptual extensions and refinements proposed by other investigators. The four-step process is now examined in more detail, incorporating enhancements to the process, proposed by other researchers.

Step 1 Identifying Trend: Lilien *et al.* (2002) argue that before identifying the general target market, manufacturers should establish a project team. This team would comprise of three to five cross-functional and experienced people, with one member serving as project champion (ibid). Subsequently, the market for which innovation concepts are to be developed must be identified (von Hippel, 1986). To achieve this, significant trends affecting the market that appear to be associated with the provision of promising new product concepts must be determined. Such an analysis should establish which of the many important market trends manufacturers are going to focus on, or alternatively they could merge several trends into an appropriate index variable (ibid). Next, the team works with relevent key company stakeholders to select the type and level of innovation desired (Lilien *et al.*, 2002).

Figure 3-4 The Lead User Method



Sources of Data*:* (von Hippel, 1986; Lilien *et al.*, 2002; Olson and Bakke, 2001; Lüthje and Herstatt, 2004)

Step 2 Identify Lead Users: Following the identification of significant trends, manufacturers can commence the search for users who possess the characteristics ascribed to lead users (von Hippel, 1986). To achieve this, von Hippel suggests that the initial task is to identify users who are at the leading edge of each of the given market trends previously identified. Secondly, manufacturers need to identify the subset of these users positioned at the forefront of the trend that will benefit from the solution to trend related needs. For Lüthje and Herstatt (2004), the quest for identifying these lead users can involve a 'screening approach' in which the project team conducts surveys on existing product user databases. Alternatively, Lilien *et al.* (2002) suggest that the project team may engage in a 'pyramid' networking exercise to identify and learn from users at the leading edge of the important trends selected for the study. The pyramid networking technique, a modified version of the 'snowballing' technique, relies on the fact that people with a strong interest in a topic or field tend to know people who are more expert than themselves. For Lilien *et al.* (2002) lead users must be indentified both in the target market and in other markets

that face similar needs in an even more extreme form and to learn from those lead users about needs and solutions they are encountering at the leading edge.

Furthermore, von Hippel (1986) forewarns three important complexities in regards to identifying lead users. Firstly, similar to Lilien *et al.* (2002), von Hippel asserts that lead users should not be limited to emerging from the manufacturer's usual customer base. For instance, one could utilise competitor's customers or customers outside the industry in which they operate. Lilien *et al.* (2002: 1044) offer an explanation for this. They advocate that "lead users found outside the target market often encounter even more extreme conditions on a trend relevant to that target market", consequently they may be forced to develop novel solutions. Secondly, von Hippel asserts that manufacturers should not limit themselves to identifying only the lead users who can illuminate the entire novel product concept. He urges manufacturers not to forget those who may only be lead users in a few of its attributes. Finally, when identifying potential lead users, manufacturers should seek to find both users who are motivated by solving a problem and users who have already established a solution.

Step 3 Analysing Lead User Date: For Lilien *et al.* (2002) data can be acquired from lead users by centring activities on a lead user workshop in which lead users are invited to work with company personnel to brainstorm around the previously identified trends. Brainstorming is a creative exercise where participants work on the trends set out in the first step of the model and using their own imagination and creativity to build on the ideas of others in the group (Trott, 1998). Typically, 10 to 15 people attend this workshop, a third of which is made up of the firm supporting the study (Lilien *et al.,* 2002). For Lilien *et al.* (2002) participants commence by working in small groups and then unite to flesh out concepts that fit the company's needs. This can be achieved by the entire group evaluating the idea in terms of technical feasibility and market appeal (ibid). Von Hippel (1986) asserts that data derived from lead users on their real life experience can be incorporated in market research analysis using standard market research methods. However, he asserts that the emphasis of the analysis differs from that of the standard market research methods. The main emphasis being on finding more user-developed product

solutions and more substantive need related statements within the data, from which manufacturers can then formulate a responsive product solution (ibid).

Step 4 Project Lead User Data onto the General Market of Interest: According to von Hippel (1986), the final step of the lead user process involves manufacturers conducting an analysis of how the lead user data will apply to the more conventional user in the market, as the needs of tomorrow's market might not necessarily correspond with that predicted by lead users. Von Hippel suggests that one approach of conducting such analysis is to create a prototype of the novel product concept and ask a sample of the general market users to evaluate it. Olson and Bakke (2001) utilised such an approach in their study, testing the ideas generated at their lead user focus group for acceptance on a sample of 15 "routine users" in each product category. These "user-evaluators" were expected to review the proposed concepts in detail, in particular noting their strengths and weaknesses.

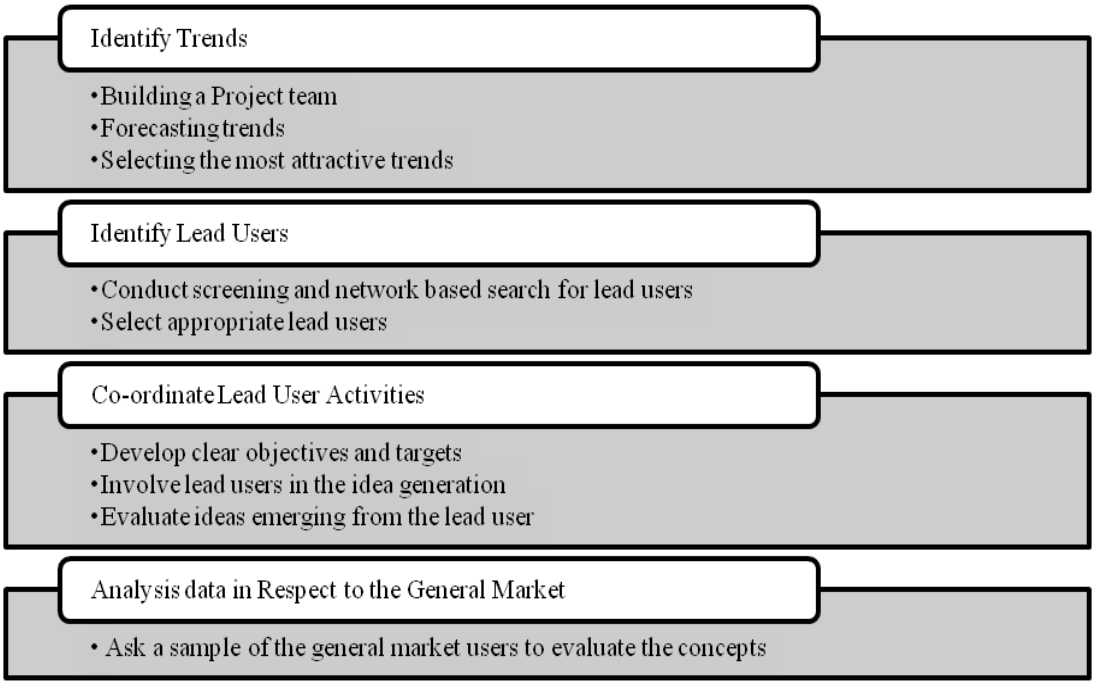
3.5.1 Suitability of the Lead User Method

The lead user method has gained considerable attention in literature as a mechanism for involving users, with numerous empirical studies revealing that its implementation has the potential to generate innovative products (Herstatt and von Hippel, 1992; Gruner and Homburg, 2000; Olson and Bakke, 2001; Lilien *et al.*, 2002). Furthermore, this method has been praised by academics for highlighting the importance of selecting users with specific attributes (Gruner and Homburg, 2000). However, notwithstanding the general value of the lead user method, the approach is not without its weaknesses. For instance, whilst the lead user method has the potential to generate innovative products, these products are believed to have low to medium degree of innovativeness and do not match the characteristics of truly radical innovations (Lettl, 2007). Additionally, adapting and acclimatising to the process may not be as easy a task as many scholars advocate. For example, Olson and Bakke (2001) deem its implementation and management requirements as extensive, resulting in many manufacturers discontinuing the process. Whilst various attempts, (see Biemans, 1992; von Hippel, 2001; von Hippel and Katz, 2002) have been made to provide some form of detail to the process of involving lead users, it remains that:

> *Little is known about critical success factors of its implementation in the context of the fuzzy front-end phase of innovation projects. Although published applications of the method provide a first insight with respect to promising actions and decisions when working with lead users, empirical findings are scarce (Lüthje and Herstatt, 2004: 567).*

In a similar vein as Lüthje and Herstatt (2004), Lynch and O'Toole, (2003) describe how the extant studies on managing user involvement merely formulate sketchy guidelines to assist manufacturers on how to collaborate successfully with their users. Despite the aforesaid, these authors nevertheless accept that von Hippel's lead user method is beneficial, as it provides a valuable insight into the determinants and structures necessary to collaborate with users. Taking the lead from the observation made by Lynch and O'Toole, (2003) and Lüthje and Herstatt (2004), Figure 3-5 utilises the insight gained from the lead user method and couples it with the previous reviewed material, to conceptualise literatures response to managing the interactions between the manufacturer and user in pre-development activities.

Figure 3-5 Extant Literatures Model of Managing Lead User Involvement



3.6 The Current State of Literature on Managing the Lead User Involvement Process

The potential benefits for manufacturers who utilised the guidelines in Figure 3-5 are abundant in new product development literature (Parkinson, 1982; Shaw, 1985; Biemans, 1991; Gruner and Homburg, 2000; Lüthje and Herstatt, 2004). Benefits such as a more accurate assessment of user requirements, thus, reducing the potential risk of miss-fitting buyers needs to an unsatisfactory product concept (Voss, 1985; Cooper and Kleinschmidt, 2000; Tidd *et al.*, 2001; von Hippel and Katz, 2002), allowing manufacturers to produce innovative products that are best suited to meet business objectives (Johne, 1994; Johnsen and Ford, 2000). Additionally, it generates an opportunity to build and sustain stronger long-term relationships with customers (Alam, 2002) and stimulating inter-functional communication (Lilien *et al.*, 2002); hence, enhancing the effectiveness of cross-functional innovation teams (Lüthje and Herstatt, 2004). Furthermore, manufacturers often do not possess the necessary knowledge or expertise to design, test, and manufacture products in-house. Collaborating with users during the product development process may provide access to these development capabilities and other resources that manufacturer's lack. As a result, these partnerships can shorten the development time and reduce development cost (Campbell and Cooper, 1999; Cooper and Kleinschmidt, 2000) making the development process more effective and efficient (Booz-Allen and Hamilton, 1982).

Furthermore, numerous theoretical and empirical studies have implied that the outcomes in terms of both innovation and economic success far outweigh that of the more traditional methods (Biemans, 1992; Cooper, 1999; Lilien *et al.*, 2002; Lüthje and Herstatt, 2004; Lettl, 2007). For instance, Lilien *et al.* (2002) reveal that lead user performances are significantly higher in the newness of innovation, expected turnover, market share and strategic importance than the traditional manufacturer-based developments. In fact, one of the most appealing attributes of involving users in pre-development activities which have been observed over the last number of years is the noticeable increase in the level of innovation that have been repeatedly achieved by organisations (von Hippel, 1986; Urban and von Hippel, 1988; Morrison *et al.*, 2000; von Hippel, 2005).

As the foregone implies, the outcomes of coordinating product development activities and resources with users in the stages prior to actual development can be a valuable means of enhancing organisational success. Indeed, development projects that build in the voice of the consumer have been reported with double the success rates and up to 70 percent higher market shares than those projects that do not involve users (Cooper, 1999). Furthermore, Morrison *et al.* (2000), in their survey of Australian users of the library information search system, the Online Public ACcess System (OPAC), found that approximately 70 percent of improvements provided by users are of least 'medium' importance from the point of view of commercial OPAC system vendors. This suggests that user involvement is certainly one way of attaining organisation objectives and provides organisations with opportunity to gain competitive advantage on their rivals.

In contrast to the manufacturer's perspective, the potential user may benefit from acquiring an advanced technology at an early stage, resulting in an improved competitive position. Moreover, they obtain a product that is better fitted to its market or production requirements. They may even benefit from a price discount or exclusive use during a specified period. Furthermore, they gain access to exclusive information and establish or maintain an innovative relationship with manufacturers (Biemans, 1992; Brockhoff, 2003).

However, it would be incorrect to assume that user involvement is not without its weaknesses. Indeed, despite the evidence suggesting that user collaboration in the development process is a valuable means of enhancing new product success, literature also suggests that user involvement in pre-development activities does not guarantee positive outcomes (Leonard-Barton, 1998). For Biemans (1992) cooperating with external parties such as lead users is not like the beneficial strategy that literature often portrays it to be. Instead, Biemans reveals that it may pose numerous unexpected dilemmas and demands serious effort and commitment from the involved parties to make it succeed. In a similar manner, O'Toole and Lynch (2004) advocate that collaborating with users is a difficult and often messy venture that tends to complicate the development process, making it more problematic to control and manage. Additionally, Olson and Bakke (2001) found that despite the

fact that many promising product concepts derived from collaborating with lead users, the case company abandoned user involvement based on high personnel turn over and lack of time. This in turn suggests that, adapting and acclimatising user involvement in the new product development process is not as simple a task as the literature portrays. Furthermore, some authors claim that user input is of limited value and may even be damaging to the new product development process (Biemans, 1991; 1992; 1995; Dolan and Matthews, 1993; Leonard-Barton 1998; Li and Calantone, 1998). Of note, Biemans (1995) has identified a series of potential disadvantages associated with collaborative product development. These comprise of increased cost of coordination, increased dependency, requirement of new management skills, changed management of personnel, access to confidential information and proprietary skills, power by the partner, lack of commitment and finally, loss of critical knowledge and skills.

According to Bennett and Cooper (1981), trying to satisfy the voiced wishes of users will result in a stalemate as innovative concepts seldom arise from customers. The authors offer three reasons to support this statement. Firstly, perception is limited to what users can currently relate to. Secondly, the user's ability to express their needs is limited, as they do not know what is technologically feasible. Finally, the needs expressed by users may have changed by the time the product is developed. In a similar vein, Leonard and Rayport (1997), offer more support for users being an inadequate source of innovation. They believe that users lack sufficient technical knowledge to produce innovations and are unable to articulate their needs. It must also be taken into consideration that users may not necessarily be willing to reveal their innovations to manufacturers and even if users are prepared to share information with them, they may not necessarily see the direct benefit of being involved in the process, hence making their application into the new product development process problematical (Lüthje and Herstatt, 2004). Campbell and Cooper (1999), for example suggest that there are no short-term commercial benefits associated with collaborating with users when compared to in house developments. However, they do state that customer partnerships can possess long-term benefits from a strategic perspective as a method of gaining access to customers or from a learning perspective. The aforementioned disadvantages reveal various reasons,

which have been proposed in literature as an explanation for why manufacturers neglect to incorporate users into their development process. However, for Lynch and O'Toole (2004), this does not imply that user involvement is not warranted. It merely emphasises the need for greater attention on how to best manage the process.

In fact, from a review of user involvement literature to date, there are indications that, how to effectively involve users in pre-development activities and manage the process remains a central dilemma (Van de Ven, 1992; Pettigrew, 1992; Biemans, 1992; Ring and Van de Ven, 1994; Dabholkar *et al.*, 1994; Doz, 1996; Holmlund and Strandvik, 1999; Holmlund, 2004; Ulwick, 2005). While this gap has undoubtedly been widely acknowledged in literature, it nevertheless remains a neglected issue. The intervention of users will generate little lasting effect, unless, a process by which manufacturers can successfully manage and support the incorporation of users in pre-development activities is formulated (Ring and Van de Ven, 1994; Spekman *et al.*, 1998; Johnsen and Ford, 2000; Magnusson *et al.*, 2003). Furthermore, Biemans (1995) suspects that a successful cooperation strategy can minimise most of the previously discussed disadvantages of user involvement.

One may possibly assign blame to the fact that as illustrated Figure 3-1, literatures response to managing the interactions between the manufacturer and user in pre-development activities follows a prescriptive set of sequential stages to be undertaken interdependently. With little or no importance placed on the relationship between participants (Van de Ven, 1992). In fact, there is a growing realisation amongst researchers in different specialisms of the need for the existing model to incorporate relational variables and adoption a more interactive approach to the process (Biemans, 1992; Van de Ven, 1992; Pettigrew, 1992; Dabholkar *et al.*, 1994; Van de Ven, 1994; Doz, 1996; Holmlund and Strandvik, 1999; Holmlund, 2004). For instance, Johnsen and Ford, (2000) suggest that the existing frameworks tend to adopt a rather isolated view of collaborations, neglecting to incorporate the dyadic relationships between the manufacturer and user, which are embedded in the process, resulting in the underlying evolutionary processes by which the interaction unfolds over time is undefined. Spekman *et al.* (1998), argue that successful collaborations are built through combining the transactional elements of the collaboration with

attention to the relational interplay between the key actors. This is analogous to the social exchange theory (Blau, 1964), where the best way to attain self-interest is by the returns available through cooperation in a relationship, indicating that exchange and cooperation have a social dimension, which has a utility that extends beyond the transactional elements of the relationship (Dwyer *et al.*, 1987). Based on the foregoing, the purpose of the next chapter is to gain an understanding of the elements necessary to advance the guidelines emitting from literature to incorporate a relationship-based approach. For Donaldson and O'Toole (2007: 198), such an approach offers "a new way to develop products and services that is more in line with customer needs and wants".

4 Managing the Relationship of User Involvement

4.1 Introduction

As evident in the final section of Chapter three, lead user involvement does not occur in a vacuum; rather relational interplay between the key actors plays a significant role in its success. The purpose of this chapter is to conceptualise the various components necessary to advance the existing model in the literature for involving users at the early stages of the new product development process, as demonstrated in Figure 3-5. To achieve this, the chapter commences by reviewing literature on relationships, highlighting the key areas for managing the relationship between the manufacturer and the user in these early stages. Finally, utilising this reviewed literature and the extant literature on managing the operational aspects of user involvement set out in Chapter three, a theory based integrated model that enables manufacturers to successfully interact, collaborate and involve their lead users in the pre-development process is conceptualised and discussed.

4.2 The Reviewed Literature

The significance of managing a relationship is evident in the magnitude of studies that have investigated the matter, as illustrated in Table 4-1. Indeed, for Carlson *et al.* (2011), managing a relationship will influence the manner in which the individuals interact in a partnership and ultimately its performance. As demonstrated in Table 4-1, literature identifies three distinct managerial tasks that require attention to successfully manage the relationship between the manufacturer and user. These include; enablers which influence the ways in which the manufacturer and user structure and manage their interactions. These enablers and can be divided into internal enablers and relational enablers. Secondly, a number of relational variables such as communication, trust, commitment and auditing the relationship need to be addressed, in order to generate a strong and healthy relationship between participants (Carlson *et al.*, 2011). Finally, the reviewed literature highlighted the importance of an individual who is capable to coordinating all aspect of the user involvement process (Markham and Griffin, 1998). These three managerial tasks will now be reviewed in more detail.

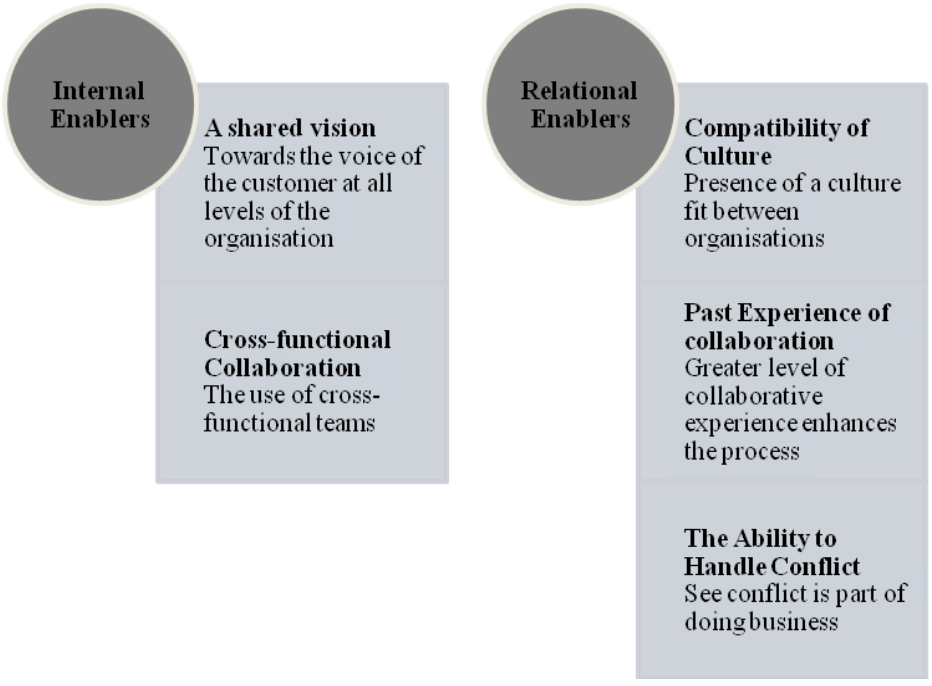
Table 4-1 Key Authors and their Contributions to Managing the Relationship between the Manufacturer and User

Key Authors	Enablers		Relational Variables				Coordinating User Involvement
	Internal Enablers	Relational Enablers	Communication	Trust	Commitment	Audit the Relationship	
Ford (1980)			✓	✓	✓	✓	
Dwyer *et al.* (1987)			✓	✓	✓	✓	
Anderson and Narus (1990)		✓	✓	✓	✓	✓	
Howell and Higgins (1990)							✓
Mohr and Nevin (1990)			✓	✓	✓		
Biemans (1992)	✓		✓	✓	✓		✓
Lei and Slocum (1992)		✓			✓		
Bleeke and Ernst (1993)			✓				
Morgan and Hunt (1994)		✓	✓	✓	✓		
Sonnenberg (1994)				✓			
Bruce *et al.* (1995)		✓				✓	
Pitta *et al.* (1996)	✓						
Johne and Storey (1998)							✓
Markham and Griffin (1998)							✓
Song *et al.* (1998)	✓						
Trott (1998)			✓	✓	✓		✓
Maron and Van Bremen (1999)		✓					
Stevens *et al.* (1999)							✓
Boddy *et al.* (2000)							✓
Brown and Duguid (2000)			✓				
Buchel (2000)		✓					
Hutt *et al.* (2000)			✓	✓		✓	
Kessler (2000)							✓
Sivadas and Dwyer (2000)							✓
Tidd *et al.* (2001)	✓	✓					✓
Kale *et al.* (2002)		✓					
Sawhney and Zabin (2002)			✓				
Lynch and O'Toole (2003)	✓	✓	✓	✓	✓	✓	
Hillebrand and Biemans (2004)	✓						
Denizea (2007)			✓				
Donaldson and O'Toole (2007)		✓	✓				
Powers and Reagan (2007)					✓		
Terawatanavong *et al.* (2007)		✓		✓	✓		
Torrent *et al.* (2007)		✓					
Parry *et al.* (2009)	✓						
De Brentani *et al.* (2010)							✓

4.2 Enablers Supporting the Process

Several of the research studies classified in Table 4-1 have identified a number of enablers that are necessary prerequisites for the successful involvement of users at the early stages of the new product development process. For Lynch and O'Toole (2003) the absence of these enablers may result in the relationship between the manufacturer and user being unsound and subsequently may collapse and fail. These enablers relate to the inter-organisational and internal characteristics processed by both the manufacturer and users, which they bring to the early stages of the new product development process. The enablers that provide the necessary antecedent conditions to successfully involving users, are reviewed under two recurring categories namely, internal enablers and relational enablers, as illustrated in Figure 4-1.

Figure 4-1 Enablers for Managing User Involvement



4.2.1 Internal Enablers

Literature revealed that successful user involvement in the early stages of the new product development process depends upon the support of the internal organisation (Biemans, 1992; Lynch and O'Toole, 2003), such as the presence of a shared vision and cross-functional collaborations and will now be discussed in turn.

4.2.1.1 Shared Vision

Whilst, the involvement of external parties such as users in the new product development process is a difficult task to achieve, it seems to be even more complex when there is an absence of a shared vision of the perceived importance of such an involvement (Tidd *et al.*, 2001). Tidd *et al.* (2001: 258) argue, that "empowering teams and providing them with autonomy and recourses will only work if they have a clear sense of direction". According to Cooper (1999) successful businesses and teams that drive winning new product projects have a slave-like dedication to the voice of the customer. However, it is essential that this shared vision exists throughout the organisation, as creating an organisational atmosphere conducive to fostering lead user involvement requires support and commitment at all levels of the organisation (Biemans, 1992). Furthermore, for Lynch and O'Toole (2003) if an organisation does not understand or appreciate the value and importance of user involvement, it is unlikely that the organisation will pursue any collaborative activities with the necessary enthusiasm (ibid).

4.2.1.2 Cross-functional Collaboration

Pitta *et al.* (1996) describe cross-functional teams as functional boundary-spanning teams that are narrowly focused and internal in nature. The authors continue to reveal that the boundaries spanned are "Marketing and Engineering, Finance and R&D, Market Research and Sales". There is widespread agreement among academics that cross-functional teams are a vital element that improves the new product development process (Pitta *et al.*, 1996; Song *et al.*, 1998; Olson and Bakke, 2001; Hillebrand and Biemans, 2004; Parry *et al.*, 2009). In fact, findings from these empirical studies have commended cross-functional teams on permitting constant mutual adjustment to the information provided by each team member. These "constant adjustments serve to keep the team's efforts in tune despite potential changes and avoid the problem of a last minute change wreaking havoc with the rest of the project" (Pitta *et al.*, 1996: 50). Additionally, literature suggest that utilising cross-functional teams may result in faster cycle times, reduces inter-functional conflict and accelerates new product development decisions (Parry *et al.*, 2009). Building on the foregoing benefits, literature suggests that the involvement of

external parties such as lead users enhances the effectiveness of cross-functional innovation teams (Lüthje and Herstatt, 2004).

4.2.2 Relational Enablers

As illustrated in Table 4-1, manufacturers must also manage a number of relational enablers because how the manufacturer and user interact at the early stages of the new product development process has an effect on the success of the collaborations. The existing literature illustrates that the cooperation of the participants may be enhanced through the establishment of a number of relationship specific factors. As illustrated in Figure 4-1, these include the presence of compatibility of culture, past experience of collaborations and ability to handle conflict. Each one will be explained in detail.

4.2.2.1 Compatibility of Culture

For Cartwright and Cooper (1993), the degree of culture fit that exists between the combining organisations, is directly correlated to the success of the collaboration. Culture is a complex concept, which comprises of patterns of shared goals, values, policies, managerial procedures and norms that shape behaviour (Cartwright and Cooper, 1993; Tidd *et al.,* 2001). From an organisations perspective, culture may be viewed as "the way we do things around here", as it serves to bind individuals, and creates organisational cohesiveness (Dransfield, 2004: 90). Culture fit is the only concept that Morgan and Hunt (1994) posit as being a direct precursor to a relationship building commitment and trust. The authors view culture fit as the extent to which partners have beliefs in common "about what behaviours, goals, and policies are important or unimportant, appropriate or inappropriate and right and wrong" (ibid: 25). Saxton (1997) offers an explanation for this, suggesting that significant differences between the partner's cultures create conflicts and barriers to cooperative methods of working and interacting together. As different cultural types "work on quite different assumptions about the basis of power and influence, about what motivates people, how they think and learn, how things can be changed. These assumptions result in quite different styles of management, structures, procedures and reward systems" (Handy, 1996: 5).

Maron and Van Bremen (1999) assert that failure to accommodate for differing organisational cultures between parties can result in the termination of a partnership, as if they are not properly identified, the underlying qualities inherent in both parties may inhibit the collaboration success. Indeed, Kanter (1994: 105) believes that "companies that are good at partnering take the time to learn about the differences early and take them into account as events unfold". Finally it must be noted that changing an organisational culture is not an easy task. It is not likely to happen quickly and is unlikely to occur as a result of a single interaction (Tidd *et al.*, 2001).

4.2.2.2 Past Experience of Collaborations

The absence of pre-collaboration experience with external parties is frequently cited as an inhibitor of the process of integration within collaborations (Lei and Slocum, 1992; Bruce *et al.,* 1995; Simonin, 1999; Kale *et al.,* 2002; Torrent *et al.,* 2007). Anand and Khanna, (2000: 298) give a reason for this, revealing that alliances are "likely to be enhanced by the trials and tribulations of past learning experiences". Similarly for Simonin (1997), firms that have greater levels of collaborative experience may result in the emergence of collaborative know-how that helps achieve greater benefits in subsequent collaborations. Moreover, organisations that have greater levels of collaborative experience are more likely to appreciate the benefits gained from such an interaction and recognise the similarities and differences between the organisations that can cause significant problems to the relationship (Simonin, 1997).

4.2.2.3 Ability to Handle Conflict

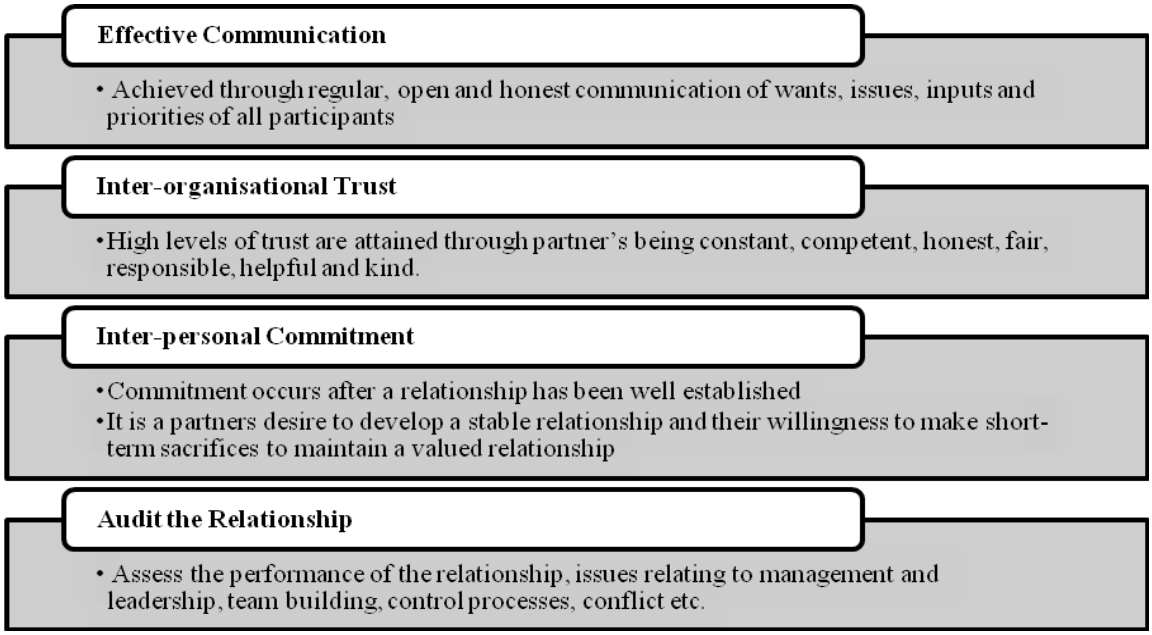
For Buchel (2000) the driving force of joint ventures does not merely depend on the stability of the relationship, but on balancing divergence with convergence. Conflict is an inherent feature of networks due to the actor's differences in interpreting events during the interaction that are determined by their priori belief structures (Rosenberg and Stern, 1970; Buchel, 2000). In fact, there is widespread agreement in the literature that conflict in relationships is unavoidable (Lynch and O'Toole, 2007**)** implying that at a strategic level, companies should view conflicting episodes as part of doing business (Anderson and Narus, 1990). Nevertheless, conflict can be manageable, through the development of a group-based understanding of the

expected and acceptable behaviour fostering convergence and by frequent personal exchange between all parties, which increase interpersonal relationships and establishes congruence (Buchel, 2000). Indeed, as the relationship evolves a shared set of norms will develop, these norms "will enable open-ended contracts and deeper trust and commitment, and facilitate the handling of power and conflict" (Donaldson and O'Toole, 2007: 48). If the attitudes and behavioural patterns of both parties are compatible, both are more likely to invest in relationship-specific assets and therefore deepen and widen the scope of exchange (Anderson and Weitz, 1992; Haugland, 1999).

4.3 Managing the Relationship between the Manufacturer and User During User Involvement

Comer and Zirger (1997: 210) investigated and tested relationship evolution and concluded "that relationship formation is an understandable process that goes through more or less predictable phases. This means that an organisation can plan and manage that process in some detail". While there are undoubtedly numerous variables that contribute to the success or failure of specific relationship, the existing literature highlights four key factors, as illustrated in Figure 4-2.

Figure 4-2 Managing the Relationship between the Manufacturer and User during User Involvement



4.3.1 Effective Communication

Communication refers to "the formal as well as informal sharing of meaningful and timely information" (Anderson and Narus, 1990: 44) and has been described “as the glue that holds together a channel of distribution” (Mohr and Nevin, 1990: 36). Indeed, the ability to exchange information and use these exchanges is a critical part of the relationships performance (Brown and Duguid, 2000), as effective communication is essential for the formation of cooperation and trust (Anderson and Narus, 1990). For Morgan and Hunt (1994) communication difficulties are the prime cause of channel problems. Similarly Bleeke and Ernst (1993: XVI) stress that even “the most carefully designed relationship will crumble without good, frequent communication”.

As the aforesaid suggests, communication and the associated information exchange are considered key drivers in the evolution of solid relationships (Mohr and Nevin, 1990; Biemans, 1992; Bleeke and Ernst, 1993; Donaldson and O’Toole, 2007; Denizea, 2007). The extant literature offers explanations for this, by linking the quality of communication to a partner’s satisfaction with the relationship, their intentions to continue the relationship and finally their willingness to provide referrals (Morgan and Hunt, 1994; Sawhney and Zabin, 2002). Moreover, the exchange of information across organisations has the ability to reduce uncertainty and ambiguity in a relationship by achieving a shared understanding of the goals and objectives of the partnership (Mohr and Nevin, 1990; Hutt *et al.*, 2000). Additionally, communication through trust indirectly influences commitment (Morgan and Hunt, 1994). For Dwyer *et al.* (1987), an atmosphere conducive to frequent and timely communication both internally and externally, can be achieved through regular, open and honest exchange of wants, issues, inputs and priorities of all participants.

4.3.2 Build and Maintain Inter-organisational Trust

As the above literature identifies, collaborative relationships rely on relational forms of exchange, however, such exchange needs to be characterised by high levels of trust (Dwyer *et al.*, 1987; Anderson and Narus, 1990). Trust is a fundamental feature of the relationship climate (Terawatanavong *et al.*, 2007). Trust is generally defined

as a belief in the integrity of another individual and has been found to promote commitment and long-term orientation (Sonnenberg, 1994; Ganesan, 1994). However, "trust is not an abstract, theoretical, idealistic" aspiration that is unattainable, trust or lack of trust is innate in every action taken and affects everything we do (Sonnenberg, 1994: 14). Literature identifies that building and maintaining trust arises from frequent communication among partners and the belief that each partner is reliable and possesses high integrity (Morgan and Hunt, 1994; Hutt *et al.,* 2000). Furthermore, higher levels of trust are associated with partner's being constant, competent, honest, fair, responsible, helpful and kind (Morgan and Hunt, 1994; Buttle, 1996). Indeed, the extent to which mutual trust successfully develops between participants, greatly influence the success of collaborations (Biemans, 1992; Morgan and Hunt 1994; Carlson *et al.* 2011).

4.3.3 Commitment

The concept of commitment received extensive investigation in the social exchange theory literature, with its contribution being described as central (Blau, 1964). Commitment occurs after a relationship has been well established (Powers and Reagan, 2007) and can be defined as a partners desire to develop a stable relationship and their willingness to make short-term sacrifices to maintain a valued relationship (Anderson and Weitz, 1992; Moorman *et al.*, 1992; Jap and Ganesan, 2000). Simply put, commitment demonstrates that the partner's ultimate goal is to make the relationship work (Terawatanavong *et al.*, 2007). Research reveals that there is a strong connection between inter-organisational commitment and the development of inter-personal relationships (Biemans, 1992). Indeed, for Spekman and Sawhney (1990), commitment that builds from trust is an essential element that is implicit in gaining agreement to long-term objectives. Furthermore, when both commitment and trust are present, outcomes that promote efficiency, productivity and effectiveness are produced (Morgan and Hunt, 1994). However, "successful alliances, like successful marriages, don't just happen; both require commitment to make them work and both can be destroyed by mistrust" (Morgan and Hunt, 1994: 25). Terawatanavong *et al.* (2007) identified ways for participants to signal their commitment, these include exchanging pledges, giving exclusive rights to the focal partner or making relationship-specific investment.

4.3.4 Auditing the Relationship

In addition to the foregone relational variables, constantly reviewing the relationship between the manufacturer and user has been identified as having a positive influence on the success of the relationship (Bruce *et al.,* 1995; Hutt *et al.,* 2000; Lynch and O'Toole, 2003). Indeed, "regular auditing allows parties to assess the performance of the relationship, while also addressing issues relating to management and leadership, team building, control processes, conflict etc" (Lynch and O'Toole, 2003). In addition auditing the relationship also provides relationship benefits in terms of "identifying loose connections, key personnel who are not part of the central flow, and relationship ties that are a major asset - as well as those that require special attention" (Hutt *et al.,* 2000: 61).

4.4 Coordinating User Involvement

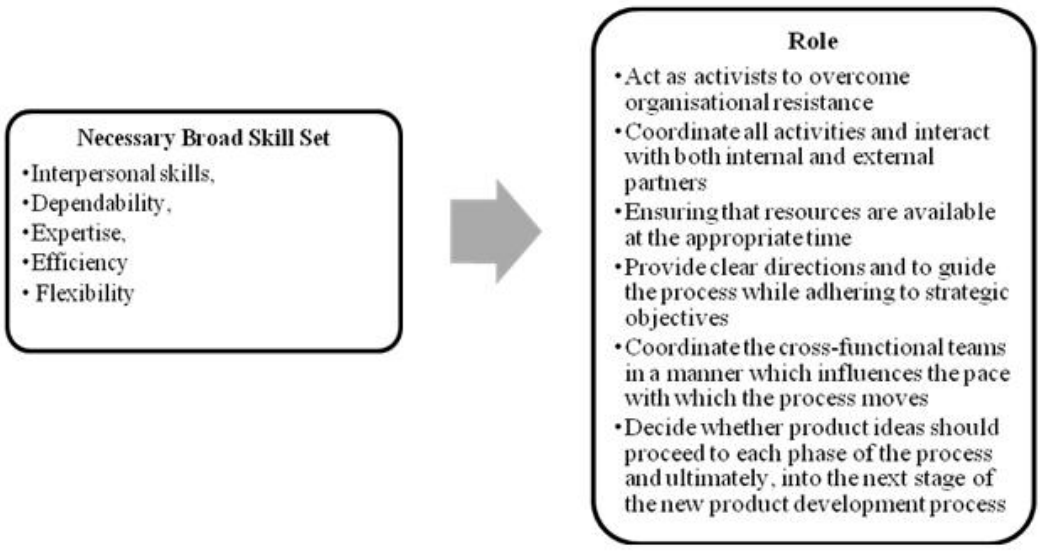
For Biemans (1992: 224), "the benefits of cooperation may only be enjoyed when the parties involved establish effective and efficient coordination of the various activities to be undertaken". Similarly Sivadas and Dwyer (2000), state that no partnership can be successful, unless the partners can coordinate their activities competently. In fact, for Markham and Griffin (1998), if an innovative new product development effort is to stand any chance for success, the project must have a champion. Furthermore, literature tends to indicate that it is critical in the early stages of the new product development that the process be managed by a single key individual acting as project champion. Stevens *et al.* (1999) gives reasoning for this, suggesting that management tend to grant such authority and responsibility to a single individual due to the vast quantity of potential projects at the early stages, resulting in it being uneconomical to have a large team of project champions involved.

The role of project champion is portrayed as having a profound impact on the new product development process (Cooper and Kleinschmidt, 1987; Howell and Higgins, 1990; Biemans, 1992; Boddy *et al.,* 2000; Kessler, 2000; Tidd *et al.,* 2001; De Brentani *et al.,* 2010). The foregoing owes to the fact their presence is predicted to lower the cost of new product development and reduce cycle time due to project champions being highly committed and persistent individuals (Howell and Higgins,

1990; Kessler, 2000). Furthermore, champions enhance new product development "program performance and operate in concert with processes and strategies", resulting in improved firm-level performance (Markham and Griffin, 1998: 451).

As illustrated in Figure 4-3, the task of the project champions incorporate numerous roles. A project champion must act as activists to overcome organisational resistance, increasing its ability to overcome dilemmas, obstacles and apathy in the new product development process, thus influencing the effectiveness of the collaboration (Souder and Chakrabarti, 1978; Johne and Storey, 1998). They must also coordinate all activities and interact with both internal and external partners (Biemans, 1992; Markham and Griffin, 1998; Trott, 1998), whilst also ensuring that resources are available at the appropriate time (Trott, 1998). They need to provide clear directions to guide the process while adhering to strategic objectives (Scheuing and Johnson, 1989). Furthermore, it is essential that they coordinate the cross-functional teams in a manner which influences the pace with which the process moves (Froehle *et al.*, 2000) and to ensure effective interaction between all participants (Boddy *et al.*, 2000).

Figure 4-3 The Role of a Project Champion in New Product Development



Finally, the project managers will make decisions on whether the product ideas should proceed to each phase of the process and ultimately, into the next stage of the new product development process (Stevens *et al.*, 1999). To accomplish the

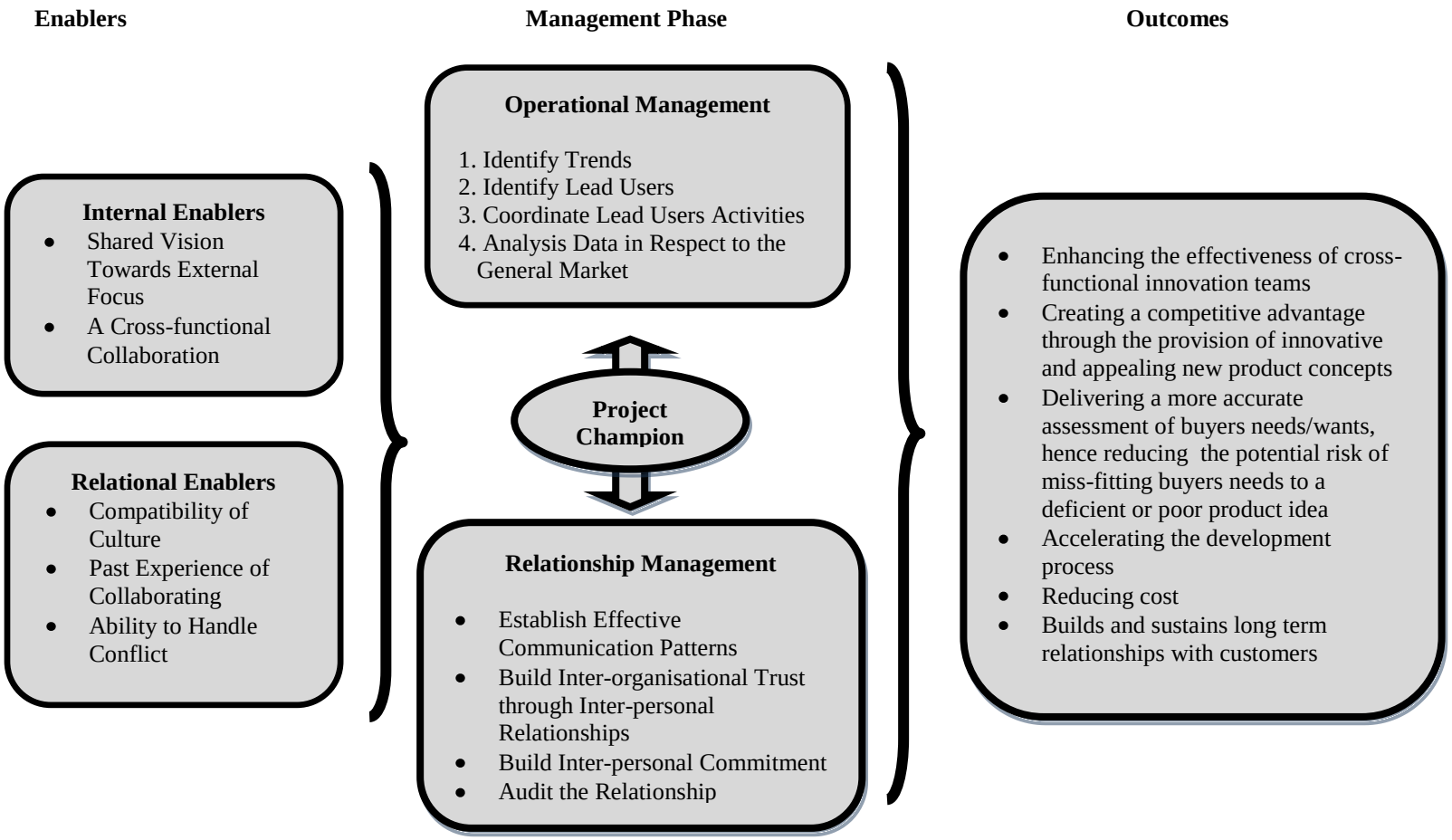
foregoing roles, the project champion requires a broad skill set, as illustrated in Figure 4-3 these include interpersonal skills, dependability, expertise, efficiency and flexibility (Tidd *et al.*, 2001).

4.5 An Integrated Model for Involving Leads Users in the Early Stages of New Product Development

Utilising the foregoing material as a foundation, a conceptual framework that enables manufacturers to successfully interact, collaborate and involve their users in the early stages of the new product development process starts to emerge. The need for this framework to imply an interaction approach to new product development is evident from the extant literature, as a managerial model, relying on normative prescriptions alone has been deemed inappropriate (Biemans, 1992; Van de Ven, 1992; Pettigrew, 1992; Doz, 1996; Holmlund and Strandvik, 1999; Holmlund, 2004). Lead user involvement is a fluid, dynamic process that involves interactions and operational attitudes. In an endeavour to achieve this, the conceptual framework is not intended to be a life-cycle model; alternatively, the model is proposed to be cyclical in nature. Additionally, heeding the warning from Olson and Bakke (2001), the model seeks to present a comparatively simple structure and anticipates its implementation and management requirements to be achievable.

Whilst the conceptual framework was developed solely from analysing the reviewed literature, it was considered fitting to briefly outline the major components of the model. The model commences with '*Enablers',* which are necessary prerequisites to successfully involving lead users in the early stages of the new product development process and are divided into (1) '*Internal Enablers'* and (2) '*Relational Enablers'.* The foregoing enablers combine to influence the way in which manufacturers and users structure and manage their interactions. As delineated in Figure 4-4 the '*Managerial Phase'* distinguishes two management areas, namely the '*Operational Management'* and '*Relational Management'* which consists of a set of specific activities, linked together by the project champion.

Figure 4-4 An Integrated Model for Involving Leads Users in the Early Stages of New Product Development



Whilst the term ‘phase’ may connote hierarchical progression, the conceptual framework is not presented as a linear model; in fact, the occurrence between operational and relational management may be simultaneous. Fundamental to the entire process is the presence of the project champion, who will provide a pivot upon which the entire process will turn, uniting all activities. The final element of the conceptual model focuses on the outcomes associated with collaborating with users in pre-development activities.

4.6 Summary

The literature review centred on the argument, that in order to understand and capture the complexity of lead user involvement, attention has to be given to both the operational and relational aspects of the cooperative relationship (Biemans, 1992; Van de Ven, 1992; Pettigrew, 1992; Dabholkar *et al.*, 1994; Ring and Van de Ven, 1994; Doz, 1996; Holmlund and Strandvik, 1999; Holmlund, 2004). Based on the existing literature, the components required for the successful management of the operational transaction and the relationship between manufacturer and users at the early stages of the new product development were presented as a conceptual framework. The next stage of this research is to design a methodology incorporating the implementation of the aforementioned conceptual framework, to establish if the theory-based assertions were in line with managerial experiences.

Chapter Five

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Methodology

5 Research Methodology

5.1 Introduction

The aim of this chapter is to provide the reader with an overview of the research philosophy and methodological issues concerning the research methods utilised in this study. Brannick and Roche (1997) states that research methodology is essentially a decision making process, whereby, through a process of inner reflection, the researcher intertwines the data derived from the literature, existing body of knowledge and the researchers ideas. Similarly, Zikmund (1997) defines business research as the systematic and objective process of accumulating, documenting and analysing data to aid the process of making business decisions. Holden and Lynch (2004: 397) contend that, "research should not be methodologically led; rather that methodological choice should be consequential to the researcher's philosophical stance and the social science phenomenon to be investigated". Taking the lead from Holden and Lynch (2004), the chapter commences with the salient issues and philosophies under debate in literature on research methodology. Drawing on this philosophical debate, a philosophical stance is selected for the current study. Next, the research objectives and research questions are stated. Thereafter, the research design and research approach adopted are established, which facilitates the answering of the research questions and allows the attainment of the research objectives. The latter part of the chapter argues for the data collection methods employed and how the data gathered was analysed and interpreted for this study. Finally, the chapter concludes with a discussion on the rigor and quality of the study.

5.2 The Philosophical Debate

A philosophical perspective relates to ones assumptions about the nature of the social world and how it can be investigated (Holden and Lynch, 2004). Developing a philosophical perspective requires the researcher to make several core assumptions concerning two dimensions: the nature of society and the nature of science (Burrell and Morgan, 1979). The nature of society dimension involves two separate views of society, specifically, regulatory or radical change. Regulatory change assumes that

society evolves rationally and is considered as being unified and cohesive. On the other hand, the radical change views perceive society as being in constant dispute, as individual struggle to free themselves from the domination of social structures (Burrell and Morgan, 1979).

The second dimension, the nature of science, involves either a subjective or objective approach to research. These philosophical assumptions are portrayed as standing on polar opposites to each other (Holden and Lynch, 2004). In essence, the key difference between these two polar opposites is that they each subscribe to different assumptions of social reality and the manner in which it may be investigated (Burrell and Morgan, 1979**)**. Both the subjective and objective approaches are defined by four key assumptions: ontology, epistemology, human nature and methodology (see Table 5-2). Despite sociological viewpoints, these assumptions are quite consequential to each other, for instance their view of ontology affects their epistemological outlook, which in turn influences their view of human nature (Burrell and Morgan, 1979). According to Burrell and Morgan (1979), incorporating these dimensions together define four philosophical paradigms, namely, radical humanistic, radical structuralist, interpretive and functionalist, as illustrated in Figure 5-1.

Figure 5-1 Four Paradigms for the Analysis of Social Theory

The Sociology of Radical Change

Subjective		Objective
Radical Humanists	**Radical Structuralist**	
Interpretive	**Functionalists**	

The Sociology of Regulation

Source: Burrell and Morgan (1979)

While a full discussion on contemporary research methodologies should consider all four paradigms, for the purpose of this research, the discussion is limited to what Burrell and Morgan describe as the imperative and functionalist paradigm. The foregoing was rationalised by the work of Morgan and Smircich (1980), where in order to simplify the presentation and make the research a more manageable length, the authors restricted their attention to the imperative and functionalist paradigms, an approach adhered to by most business researchers (see Holden and Lynch, 2004).

To facilitate a philosophical discussion, it is deemed appropriate to employ a consistent terminology. As illustrated in Table 5-1, various labels exist in the extant literature on philosophy, that have been assigned to the objective and subjective approaches. For instance, Easterby-Smith *et al.* (2002) identified them as positivism and phenomenology, alternatively Hughes and Sharrock (1997) described them as positivism and interpretive. Therefore, it is necessary to note that for this section, the use of the subjectivist versus objectivist terminology will be utilised.

Table 5-1 Alternative Philosophical Paradigm Names

Subjectivist	⟷	**Objectivist**
Qualitative		**Quantitative**
Anti-positivist		**Positivist**
Phenomenological		**Scientific**
Humanist		**Experimentalist**
Interpretivist		**Traditionalist**
Social Constructionist		**Functionalist**

Source: Hussey and Hussey (1997)

From Table 5-2 the two primary philosophical traditions, their respective assumptions, and the terminology associated with them can clearly be seen. The research assumptions; ontology, epistemology, human nature and methodology are subsequently discussed.

Table 5-2 Research Method Assumptions – The Subjective/Objective Dimension

The Subjectivist Approach to Social Science				The Objectivist Approach to Social Science
Nominalism	←	**Ontology**	→	Realism
Anti-positivism	←	**Epistemology**	→	Positivism
Voluntarism	←	**Human Nature**	→	Determinism
Ideographic	←	**Methodology**	→	Nomothetic

Source: Burrell and Morgan (1979)

5.2.1 Ontology Debate

The first assumption relates to the nature of reality, that is "whether 'reality' is of an objective nature or the product of an individual's mind" (Burrell and Morgan, 1979: 1). For Holden and Lynch (2004), the researcher's view of ontology is the cornerstone to all the other assumptions. The ontological debate is divided into two contrasting categories, namely nominalism and realism (see Table 5-2). Nominalists assume that social reality is relative, and that the social world is primarily names, concepts, and labels that assist an individual to structure reality. They believe these labels are artificial creations (Burrell and Morgan, 1979). In contrast, realists assume that the real world as hard, intangible structures that exist irrespective of our labels. They believe that the social world exists separate from the individuals' perception of it (Burrell and Morgan, 1979; Gill and Johnson, 1997; Carson *et al.*, 2001). Therefore, realists believe that the world exists independently of humanity (Burrell and Morgan, 1979).

5.2.2 Epistemology Debate

The second assumption, epistemology concerns the study of nature, validity and limits of knowledge and how it can be obtained and communicated to the world (Burrell and Morgan, 1979; Hughes and Sharrock, 1997). The epistemological debate has two extreme positions specifically; anti-positivism and positivism (see Table 5-2). One the one hand, positivism believes that one can seek to explain and predict what happens in the social world by searching for patterns and relationships between people (Burrell and Morgan, 1979). The main feature of positivism is that

they believe one can develop hypotheses and test them, and that knowledge is a cumulative process (Burrell and Morgan, 1979) and the researcher is independent of the research phenomenon and so neither influences nor is influenced by the subject of the research (Remenyi *et al.*, 1998). In contrast to positivism, an anti-positivism position rejects that observing behaviour can help one understand it. Alternatively it claims that the world can only be understood from the point of view of individuals who are directly involved in the experience which are to be studied. Anti-positivists reject that social science can create true objective knowledge of any kind; instead they view social science as being subjective (Burrell and Morgan, 1979).

5.2.3 The Human Nature Debate

The third assumption, human nature is concerned with the issue of how humans interact with their environment. That is, does their environment determine human behaviour, or do humans have 'free will' (Burrell and Morgan, 1979). These two diverse views are known as determinism and voluntarism (see Table 5-2). At one end of the spectrum, determinism believes that the relationship between humans and society is deterministic and that human activities are not free, instead they are completely determined by their external forces, that is, their environment (Burrell and Morgan, 1979). On the other hand, voluntarism view that humans simply responds to the circumstances encountered and that they are completely self-directed and free-willed (Burrell and Morgan, 1979).

5.2.4 Methodology Debate

The fourth and final assumption, methodology is described as the researcher's tool-kit and represents all the methods available to social scientists (Burrell and Morgan, 1979; Holden and Lynch, 2004). As previously identified, the different views on ontology, epistemology and human nature, have direct implications on the route chosen to investigate and obtain knowledge about the social world, therefore directing social scientists towards a choice of methodologies. Similar to the previous assumptions, the methodological debate is divided into two separate approaches; the ideographic approach and nomothetic approach (see Table 5-2). The ideographic approach focuses on "getting inside" situations and allowing one's subject to unfold during the process of investigation. This approach utilises diaries, biographies and

observation therefore gaining first-hand knowledge of the subject under investigation (Burrell and Morgan, 1979; Lee, 1999). Alternatively, the nomothetic approach relies more on the scientific method and hypothesis testing. They employ quantitative tests such as surveys, personality tests, and standardised research tools (Burrell and Morgan, 1979).

However, as indicated by Table 5-3, some research methods that one may consider to belonging to either an objective or subjective philosophical approach may have a dual utilisation (Holden and Lynch, 2004). In essence, researchers do not have to choose one approach over the other, instead they can combine both methodologies in order to give individual methods a more credible weighting (Easterby-Smith *et al.*, 2002). Additionally, Lee (1999: 11) advocates, "the main focus of a researcher should be to ensure that the most appropriate method has been applied to the study rather than focusing on whether or not qualitative or quantitative designs are used"

Table 5-3 Research Tactics and their Philosophical Bases

Research Approaches	Objectivism	Subjectivism
Action research		Strictly interpretivist
Case studies	Have scope to be either	Have scope to be either
Ethnographic		Strictly interpretivist
Field experiments	Have scope to be either	Have scope to be either
Focus groups		Mostly interpretivist
Forecasting research	Strictly positivistic with some room for interpretation	
Futures research	Have scope to be either	
Game or role playing		Strictly interpretivist
In-depth surveys		Mostly interpretivist
Laboratory experiments	Strictly positivistic with some room for interpretation	
Large-scale surveys	Strictly positivistic with some room for interpretation	
Participant-observer		Strictly interpretivist
Scenario research	Strictly positivistic with some room for interpretivist	Mostly interpretivist
Simulation and stochastic Modelling		

Source: Remenyi *et al.*, (1998)

5.3 Philosophical Position Adopted

Drawing from the foregoing philosophical debates, a philosophical stance can be selected for the current study. By applying Burrell and Morgan (1979) subjective-objective debate regarding social science research approaches, it is evident, that the nature of this study is more subjective than objective. This study focuses on content, context, processes and outcomes of user involvement in the early stages of new product development, hence, the need for a methodology that allows a more detailed and richer analysis than objective research offers. The exploratory nature of the research is evident in its research objectives and would be less amenable to meaningful quantification. There is little research investigating the management of user involvement in the early stages and so the research methods have to be flexible, unstructured, and qualitative, as the researcher will begin without a firm preconception as to what shall be found (Malhorta, 2002).

In terms of the first assumption, ontology, the current study shares the view of social world information, that is, reality is embedded in a social world, subjective to meanings of actions, re-actions and appropriate adjustments that translate into appropriate behaviour. Human nature is considered voluntaristic. That is to say, humans are completely independent. Regarding epistemology, it is considered necessary to distinguish natural sciences from social sciences, while simultaneously recognising the importance of human subjectivity in the quest to understand human action and behaviour. Finally, in terms of methodology, this study outlines anti-positivist assumptions on ontology, epistemology and models of human nature, has guided the realisation that for certain research problems, subjectivist inquiry enhances depth and insight far beyond the scope of objectivist techniques. The following section will discuss the research problem, objectives and questions, justifying and reinforcing the philosophical stance of the study.

5.4 Research Problem and Objectives

Frishammar (2002: 148) considers the research objective as a "statement in as precise terminology as possible, of what information is needed". The research problem emanating from the literature was that managerial guidelines that enables

manufacturers to successfully interact, collaborate and involve their users in the pre-development process is absent in the user involvement and innovation literature (Van de Ven 1992; Pettigrew, 1992; Biemans, 1992; Ring and Van de Ven 1994; Dabholkar *et al.* 1994; Doz, 1996; Holmlund and Strandvik, 1999; Holmlund, 2004). Based on the aforementioned, the overarching objective of this research is:

- To develop a managerial model that will maximise user involvement in the early stages of the new product development process to deliver innovative and appealing new product concepts.

To achieve this, the following sub-objectives emitted:

- To identify enabling factors which allow for the involvement of lead users at the early stages of the new product development process;
- To identify the operational process for involving lead users;
- To identify the critical relational variables needed for lead user involvement;
- To examine the performance impact of interaction with lead users in early stages of the new product development process.

5.5 Research Design

It is essential that an approach be adhered to, which provides details of each step in the research process and ensures that the study will be relevant to the problem at hand (Gill and Johnson, 2002). The research design is a plan that guides the research study towards its objectives (Gill and Johnson, 2002; Sarantakos, 2005). For Yin (2009) a research design is the logical sequence which links the empirical data ultimately, to its conclusions. Similarly to Yin (2009), Easterby-Smith *et al.*, (2002: 43) claim that "research designs are about organising research activity, including the collection of data, in ways that are most likely to achieve the research aims". Indeed, the literature conveys that a pivotal part of research activity, is to develop an effective research design or strategy, which both serves to answer the overall research questions and assist in the attainment of the research objectives (Yin, 2009;

Chisnall, 2001; Easterby-Smith *et al.*, 2002; Gill and Johnson, 2002; Sarantakos, 2005). Prior to adopting a research design, consideration must be given to choosing the most appropriate design to the study and to accept that no single design can be deemed as inferior or superior to another, instead one needs to decide which is best suited to the particular study (Hakim, 2000; Domegan and Fleming, 2007).

Table 5-4 Considerations in Choosing a Research Design

	Exploratory Research	**Descriptive Research**	**Casual Research**
Data type	Qualitative	Qualitative or quantitative	Quantitative
Aims	To explore, chart, identify, define	To describe, quantify	To establish cause and effect
Nature of variables	Unknown Undocumented	Known associations and documented	Known exactly, Clearly supported
Degree of Formality	Relatively little	Some to extensive	High mathematical content
Data	Literature review Expert surveys Focus groups In-depth interviews	Literature review Surveys Observation Panels	Literature review Expert surveys Experiments (Surveys) (Observation)
Sample Size	Small	Small to large	Large
Question Types	Probing Response-driven	Some probing Interviewer driven	No probing
Hypothesis	Generates, Develops	Tests and/or Generates, Develops	Tests

Source: Domegan and Fleming, (2007)

For Domegan and Fleming (2007), the nature of the actual research and the extent to which this encompasses an exploratory, descriptive or causal design are principal dictators of the research approach adopted. The principle features of each approach are outlined in Table 5-4. The categorisation, additionally serves to highlight some of the key features of different research approaches. As illustrated in Table 5-4 exploratory research can be used to investigate people's attitudes and opinions, motivation and behaviours. Descriptive research, on the other hand, is used to answer questions such as: who, what, where, how, why and how often. This method

of research is based on the facts and figures and usually consists of quantitative techniques. The final research method is causal research. This is an experimental research technique where independent variables are manipulated in order to determine the effects they may have on dependent variables (ibid).

Considering the subjective nature of this research, the research question and objectives, it is apparent that 'understanding' is the underlying objective of this research. Therefore, from Domegan and Fleming, (2007) categorisation it can be assumed that this research is of an exploratory nature. In research of an exploratory nature, it is accepted that little is known about the central issues and that the research will to some extent uncover and reveal patterns, trends, attitudes and behaviours that were previously unknown and lacked understanding (Domegan and Fleming, 2007). As outlined in Table 5-4, studies of this nature are likely to rely on subjective data generated from small samples.

5.6 Research Approach

Operating within the qualitative paradigm offers the researcher numerous types of interpretive methods and approaches. Such strategies include ethnography, grounded theory, action research and interpretive case. Each will now be discussed in turn. According to Saunders *et al.* (2009), the classification of the particular strategies is not what matters, rather, it is whether or not it is appropriate for the research questions and objectives. Moreover, they emphasise that these strategies "should not be thought of as being mutually exclusive" (ibid: 141).

5.6.1 Ethnography

Ethnography is associated with the description of social patterns (Carson *et al.*, 2001; Saunders *et al.,* 2009). To collect data, ethnography typically involves the researcher participating in people's everyday lives for an extensive period of time, in both an overtly and covertly manner, "watching what happens, listening to what is said, and/or asking questions through informal and formal interviews, collecting documents and artefacts" (Hammersley and Atkinson, 2009: 3). The approach was deemed an inappropriate choice for the current study due to the time constraints

associated with the approach and its limited use in business research (Carson *et al.*, 2001; Saunders *et al.*, 2009).

5.6.2 Grounded theory

The outcome of grounded theory approach is not findings or themes, "rather it is an integrated theoretical formulation that gives understanding about how persons or organisations or communities experience and responds to events that occur" (Somekh and Lewin, 2005: 49). Grounded theory is achieved through, data generated by a serious of observations (Saunders *et al.*, 2009). The researcher considered the grounded theory method in the context of the research objectives and found that this research strategy would not facilitate the description of the phenomenon under research and in conjunction with the time constraints associated with the approach (Carson *et al.*, 2001), it was deemed not the optimum approach to utilise in the current study.

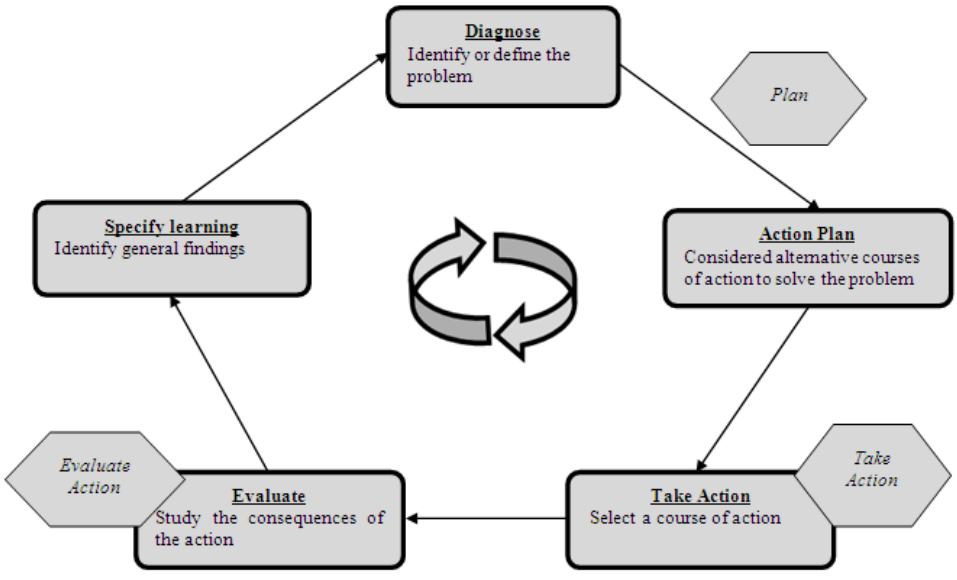
5.6.3 Action Research

For Mumford (2001), action research is a process, which involves gaining an understanding of a problem, generating ideas to improve the problem and then applying those ideas into real world situations. In addition to this, action research also contributes to the development of theory, through taking actions that are guided by theory and which can be supported or revised through evaluation (Susman and Evered, 1978). Consideration was given to the research objectives for the current study and action research was deemed an appropriate method. The justification for adopting this research approach was twofold. Firstly, this approach allows the researcher to become actively involved with the situation or phenomenon under research (Remenyi *et al.*, 1998), hence, the approach will facilitate the implementation of a managerial model to maximise user involvement to deliver innovative and appealing new product concepts. Secondly, Spekman *et al.* (1998) contend that successful collaborations are built through combining the transactional elements of the collaboration, with attention to the relational interplay between the key actors. Therefore, it is essential that a method be employed which allows for the aforementioned to occur between manufacturer and user. Action research permits the

facilitation and improvement of the relationship between the case company and their user (Zuber-Skerritt and Perry, 2002).

Robson (2002) asserts that as a research method, action research is distinguishable in terms of its purpose, that is, to influence change in the phenomenon under investigation. Carr and Kemmis, (1986) distinguish between three types of action research. Firstly, technical action research, which aims to improve effectiveness of educational or managerial practice. The practitioners are co-opted and depend greatly on the researcher as a facilitator. Secondly, practical action research, in addition to improving effectiveness, aims at the practitioner's understanding and professional development. The researcher's role is to encourage practical deliberation and self-reflection on the part of the practitioners. Finally, emancipating action research which aims not only at technical and practical improvements and the participant's better understanding, along with transformation and change within the existing boundaries and conditions, but also at changing the system itself of those conditions which impede desired improvement in the system/organisation. It was deemed appropriate that the current study utilised the participatory action research to conduct this longitudinal study involving users at the early stages of new product development.

Figure 5-2 The Cyclical Process of Action Research



Adapted from: Susman and Evered, (1978)

Literature on action research identified the research as a process with a sequence of steps (Susman and Evered, 1978; Zikmund, 1997; Denscombe, 1998; Sekaran, 2003; Saunders *et al.*, 2009). Which typically incorporates five phases as illustrated in Figure 5-2. The action research process commences with diagnosing the problem to which change must intervene. Action is then proposed and taken. Changes resulting from the action are monitored, achieved by means of data collection and analysis. Reflecting on this change leads to modification or introduction of additional changes to improve the process. This fundamental assumption of action research involves observation, reflection, planning and change, leading to continuous improvements. In addition to the foregoing, self-reflection is portrayed as pivotal to the action research process. Herr and Anderson, (2005) highlighted the importance of stepping back from the "puzzle" to gain perspective. In fact, the maintenance of a research diary is a recommended action research technique (Carson *et al.*, 2001; Reason and Bradbury, 2001; Saunders *et al.*, 2009). According to Zuber-Skerritt and Perry (2002), a single interaction is appropriate at Master level, whereas multiple interactions are required for Doctorates.

5.6.4 Interpretive case

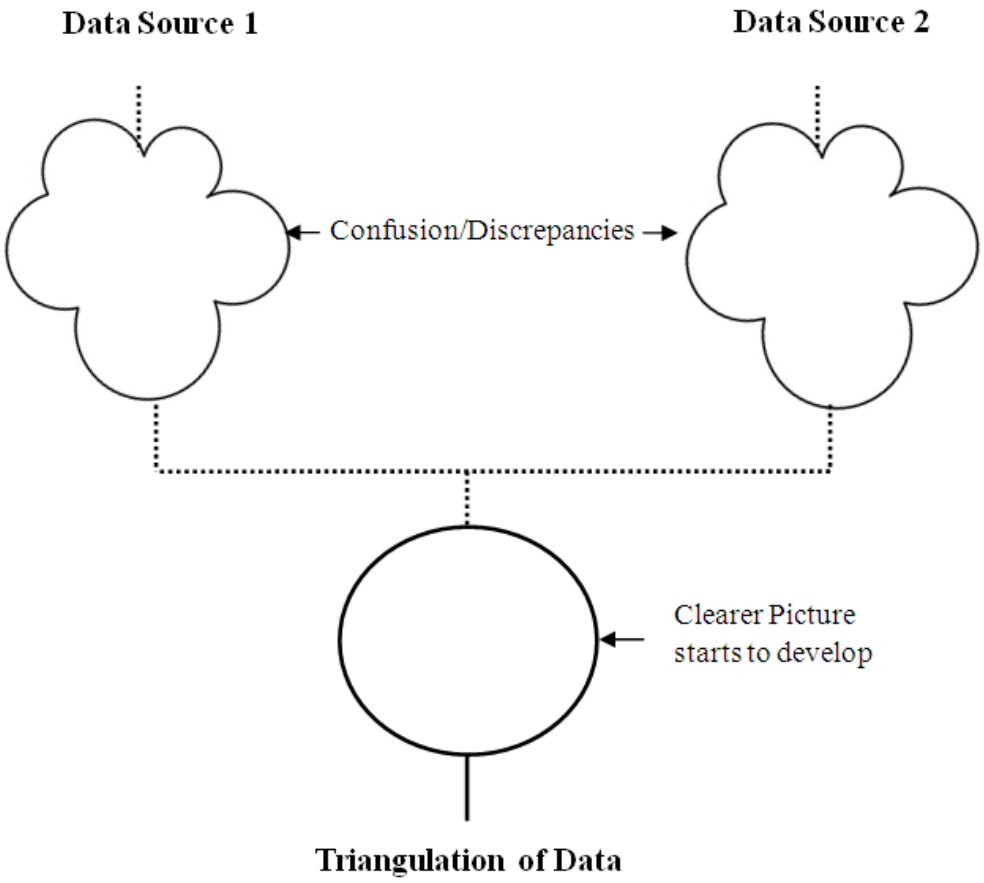
Taking the advice of Saunders *et al.* (2009) it was deemed appropriate not to take the foregoing research approach as mutually exclusive. Hence, in order to understand the processes that enabled the manufacturer to successfully interact and involve their users in their pre-development process, an interpretive case study methodology was deemed appropriate to assist the aforementioned action research approach. The justification for adopting this research approach was grounded in a number of interrelated factors. Firstly, the case study approach was utilised due to the nature of the research question. That is, the need to understand a real-life phenomenon in depth, as well as the fact that relatively little knowledge is available on the research topic (Yin, 2009). Secondly, the research problem posed is exploratory and thus requires a methodological approach that will allow the researcher to reveal social context, such as, the complex set of factors and their inter-relationships in order to understand the possible drivers and inhibitors involving users in pre-development activities (ibid). Finally, this approach was preferred over other approaches when

examining contemporary events over which the investigator has no control as it allows multiple sources of evidence to be employed (ibid).

Yin (1994: 13) in defining a case study, highlights the contextual superiority of this approach asserting that, "a case study is an empirical inquiry that investigates a contemporary phenomenon within a real-life context, especially when the boundaries between phenomenon and context are not clearly evident". A variety of data collection methods are employed in this approach (Gummesson, 1991). They include; individual interviews with key players, group interviews, observation and critical incident analysis (Somekh and Lewin, 2005). Furthermore, exploiting a single case site was deemed more appropriate than multiple sites due to the complexity of the phenomenon being researched and the need for time to delve and gather rich, meaningful data. For Creswell (1998), single case studies result in a mapping of the interrelationships between content, contextual setting, and process, based on the interpretation of meanings made by both the social actors and the researcher, than if multiple sites were utilised. Additionally, a single case was employed in an endeavour to heed the warning from Olson and Bakke (2001) on the need for a longitudinal case. Yin (2003b: 42) refers to longitudinal cases as one of the five rationales for using a single case study approach and defining a longitudinal case as "studying the same single case at two or more different points in time". Adding to this "the theory of interest would most likely specify how certain conditions change over time, and the desired time intervals to be selected would reflect the presumed stages at which the changes should reveal themselves" (ibid).

However, the researcher's decision to utilise a single case study was largely influenced by the writing of Yin (1994) and his persuading concept of triangulation. Indeed, the general consensus in literature is that findings emanating from a case study should be based on several different sources of information (Rossman and Wilson, 1991). Yin (1994) describes triangulations as the combination of methodologies in the study of the same phenomenon based on the premise that the limitations of each single method will be compensated by the compensating strengths of another as illustrated in Figure 5-3.

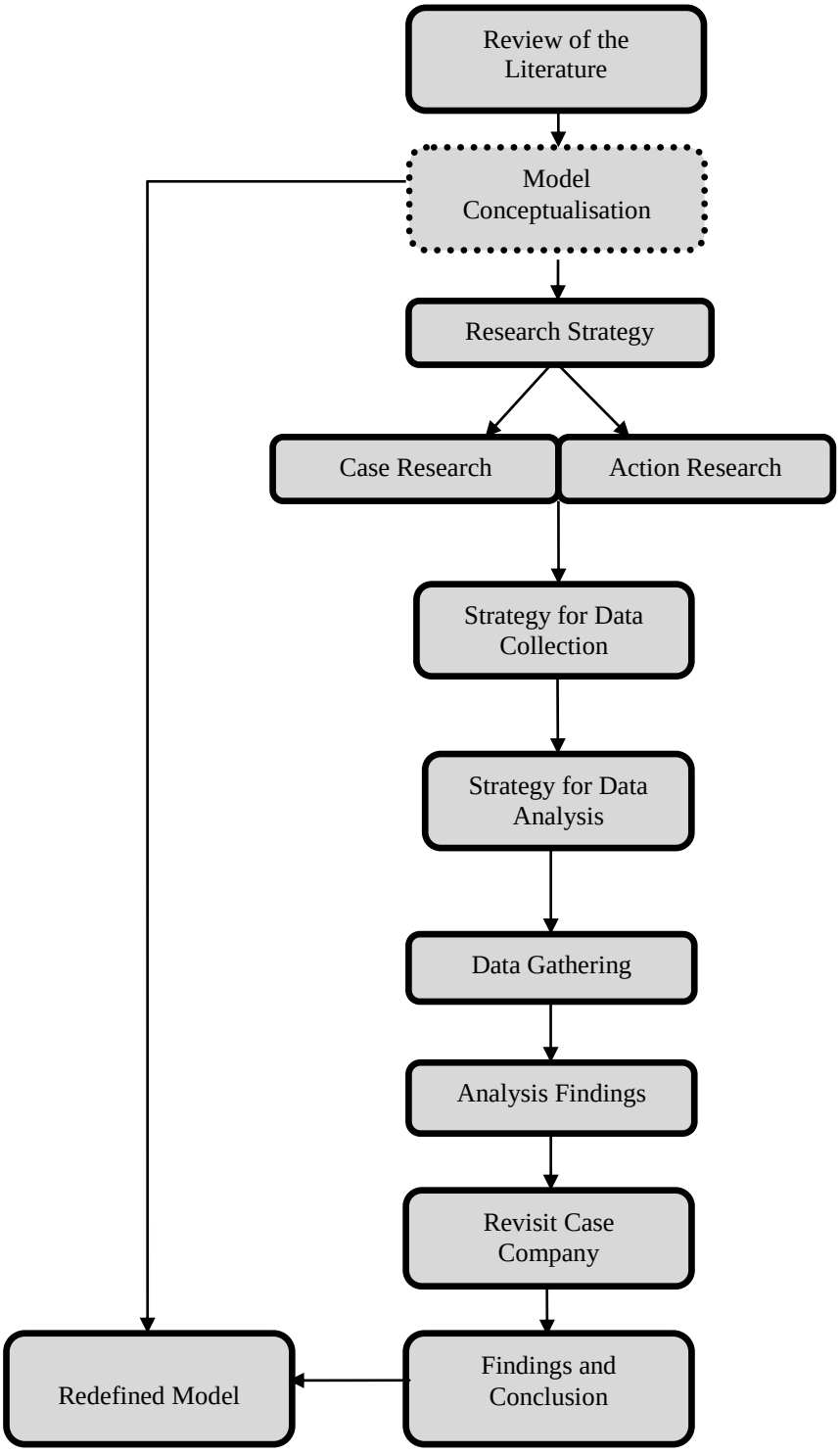
Figure 5-3 Illustration of Triangulation



Source: Author

In a similar vein to Yin (1994), Rossman and Wilson (1991) contribute the reasons as to why researchers should combine various forms of data. They argue that a combination of different forms of data, firstly enables confirmation or corroboration of each other via triangulation, secondly it elaborates or develops analysis providing richer detail and finally, initiates new lines of thinking through attention to surprises of paradoxes and providing fresh insight. For Lincoln and Cuba (1985), no single item of information should be given serious consideration unless it has been triangulated, with the exception of information, which comes from an elite and unimpeachable source. The research approach employed to achieve this study is outlined in Figure 5-4.

Figure 5-4 A Pictorial Representation of the Research Process Undertaken for this Study



5.7 Defining the Unit of Analysis

A recurring theme that emerges throughout the case study literature is the necessity for case study research to define the unit of analysis (Miles and Huberman, 1994; Palys, 1997; Carson *et al.*, 2001; Yin, 2009). The unit of analysis is portrayed as a critical factor in a case study approach. According to Yin (2009), defining the unit of analysis will determine the scope of the data collected and how to distinguish data about the phenomenon under investigation from context data. He continues that a weak description of the primary research question may lead to confusion and incorrectly defining the unit of analysis. Yin argues that if a researcher finds defining the unit of analysis confusing, it means that their research questions are possibly too vague or numerous (Yin, 2003b). According to Patton (1990: 168), "the key issue in selecting and making decisions about the appropriate unit of analysis is to decide what it is you want to be able to say about something at the end of the study".

For this project, the primary research question to be addressed concerns understanding the processes that occur in the interactions between manufacturers and users with the overall intention of developing a managerial model that will maximise user involvement to deliver innovative and appealing new product concepts. Thus, the current study can be defined in terms of the processes and events that occur in those interactions.

5.8 Sampling Strategy

Once the unit of analysis had been defined, the issue of sampling strategy needed to be addressed. For Patton (2001), nothing better portrays the discrepancy between quantitative and qualitative research than the different logics that underpin sampling approaches. Typically quantitative research focuses on a large sample selected randomly whereas qualitative methods normally focus on small sample selected purposefully. Hence, this interpretive case study demands the logic of purposeful sampling as opposed to random sampling. For Patton (2001: 203):

> *the logic and power of purposeful sampling lie in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry, thus the term purposeful sampling. Studying information-rich cases yields in-sights and in-depth understanding rather than empirical generalisations.*

Whilst there are several different strategies for purposefully selecting information rich cases, the sampling strategy that best fits the purpose of the current study, the resources available, the questions being posed, and the constraints being faced, is criterion sampling. For Patton (2001: 236) "criterion cases are those that can make a point quite dramatically or are, for some reason, particularly important in the scheme of things". The justification for adopting such a sampling approach for this research is rooted in numerous interrelated rationales. Firstly, to be sure that case harvests information-rich data, it was critical that case company engaged in new product development, and more significantly that industrial lead users had not previously been involved in the early stages of product development efforts. Secondly, for Patton (2001) the focus of criterion case is on understanding what happens in a central case. Indeed, understanding the processes that enabled the manufacturer to successfully interact and involve their users in their pre-development process is central to achieving the objective of this research. In particular, it is critical that how the company manages these complex inter-organisational relationships is understood.

Thirdly, as already specified, this research has adopted a single case study approach and while studies of one or even a few cases does not theoretically allow broad generalisations to all possible cases, logical generalisations can often be achieved from the weight of evidence produced from a single, critical case (Patton, 2001). The decision to adopt a single case study approach in lieu of multiple-site was based on the ability to be able to delve and explore more deeply into complex processes and issues. This will result in a mapping of the interrelationships between content, contextual setting and process based on the interpretation of meanings made by both the social actors and the researcher, than he/she would if multiple sites were used (Creswell, 1998). As a result, it was essential that the case company would grant unlimited access.

The case company identified as possessing the foregoing components was Allsop Europe an electronic accessories manufacturer based in County Waterford. Allsop Europe represents the dominant characteristics of small to medium Irish

organisations. Once the case company was identified appropriate methods of data collection had to be chosen.

5.8.1 A Protocol for implementing Lead User involvement in the early stages of the New Product Development Process

Knowing what you want to discover, inevitably leads to how you are going to obtain that information. To facilitate the development and implementation of a best practice model for user involvement in the early stages of new product development a process, it was deemed fitting that the methodology would be influenced by previous investigation on a similar phenomenon. After much consideration, the research perceived most suitable was, Olson and Bakke (2001), which explores the implementation of the lead user involvement in the assembling of new product ideas from leading edge customers in an Information Technology firm that previously had executed limited customer research during their new product development efforts. This research formed a cornerstone upon which the protocol for the current study was devised. That is, a three phase procedure that developed over time as illustrated in Table 5-5.

Table 5-5 A Summary of the Longitudinal Approach Utilised

Phase	Description	Data Collection Method
Phase One: Diagnosis Phase	This phase primary concerned, gaining the support and expertise of key participants in the lead user process, in tandem with investigating the current state of the new product development process.	• Interviews • Observation of the new product development process • Documentation
Phase Two: Intervention Phase	Phase two consisted of a series of interventions, primarily to provide the members of the organisation who are most likely to deal with the lead users with the skill set necessary to successfully foster innovative ideas in forthcoming inter-company cooperation, in addition to generating ideas, which were monitored, as they filtered down through their new product development process.	• Workshop • Interviews • Round table discussions • Observation of the new product development process • Documentation
Phase Three: Evaluation	The third and final phase, involved an on-going evaluation of the entire action research process, in particular evaluating the relevancy of the lead user method in future product development in the case company.	• Interviews • Round table discussions • Observation of the new product development process • Documentation

The evolution of the approaches was attributable to the nature of action research and to the fact that each phase incorporated the expertise of the main implementers at the case company in facilitating the implementation of lead user involvement at the early stages of their new product development process. Each stage will now be discussed in detail.

5.8.2 Diagnosis Phase

The first phase of the research began in September 2008 and ended in March 2010. Three main sources were used to collect data from the research site: interviews, observation of the new product development process and documentation. A total of 5 interviews were conducted with the senior members of the organisation. The purpose of these interviews where fourfold. Firstly, to gain the support and expertise of the main implementers and users of the lead user method. Secondly, to gain critical insights into the existing new product development process in the organisation. Thirdly, to ascertain the interviewees roles in the organisations new product development process and finally, informing participants about the lead user method. As previously indicated, observations of their new product development process was conducted, which enabled the researchers to gain a clearer understanding of the internal culture and processes of the organisation. In addition, the regular interactions greatly assisted with building close working relationships with the organisation. Finally, analysing documentation provided an insight into what couldn't be directly observable. Based on the data gather from the diagnostics, a series of interventions were designed in order to implement the involvement of users in the early stages of the organisations new product development process.

5.8.3 Intervention Phase

Heeding the warning from Olson and Bakke (2001) that for successful lead user involvement, it is a necessary activity to train all participants involved. Hence, the second phase of the research, involved a series of interventions bases on the needs identified in the diagnosis phase of the research. This aimed at providing participants with both the theory and practical skills to involve lead users at the early stage of their new product development process. The following section unfolds each step of the intervention phase.

Step One – Workshop: Involving Lead User: This training commenced through conducting interviews and a round-table discussion aimed at identifying the skills required by management at Allsop Europe to successfully involve lead users at the early stages of their new product development process. Based on their company requirements, the workshop was focused at providing Allsop Europe with the skill set necessary, to successfully foster innovative ideas from external sources such as lead users. To achieve this, the workshop commenced with a balanced interpretation of the concept of lead user involvement in the early stages of the new product development process, presenting methods for implementing user involvement, in addition to the benefits and detriment of doing so. This was followed by examining ways of building and strengthening their relationships with other organisations during collaborations, for instance, methods of building trust and commitment. Finally, a discussion was held on the suitability of such methods in Allsop Europe new product development process, during which necessary adaptations were suggested by participants from Allsop Europe. This workshop was held offsite in a neutral environment on the 8th of October 2008 and was attended by employees from all levels of the case company.

Step Two – Identify Trends: This step commenced through conducting interviews and a round-table discussion with the main implementers of the process. The purpose of this step was threefold. Firstly, to identify a project team, this team comprised of seven cross-functional and experienced people, with one member serving as project champion. Secondly, to identify methods of identifying trends affecting the Allsop Europe's market that appeared to be associated with the provision of promising new product concepts and finally to identify such trends. As illustrated in Table 5-6, this analysis identified four thematic issues. These forecasted trends are essential for the subsequent identification of lead users.

Table 5-6 Themes utilised at the lead user brainstorming session

Portable computer screen cleaning solutions
Computer bag accessories
Watching videos online
Portable ergonomic solutions for using ones laptop while travelling

Step Three – Identify Lead Users: As per the previous step, identifying the lead user was completed through conducting interviews and a round-table discussion with the project team. However, the emphasis was now on determining criteria that would allow for the correct identification of the case companies lead users. These indicators centred around von Hippel's lead user characteristics: (1) Lead users face needs that will be general in a marketplace, but they face them months or years before the bulk of that marketplace encounters them; (2) Lead users are poised to benefit significantly by obtaining a solution to those needs (von Hippel, 1986: 776). The lead user identified was an Irish distributing company, whom the case company has a long-term working relationship with.

Step Four A – Coordinate Lead User Activities: Based on the foregoing, a brainstorming session was prepared for the 11th of May 2010. This workshop was primarily aimed at providing the members of the organisation who were most likely to deal with the lead users with the skill set necessary, to successfully foster innovative ideas in forthcoming inter-company cooperation, in addition to generating ideas that would feed into Allsop Europe's new product development process. Primarily to inform the lead user, the workshop commenced with an outline of the current research and a brief introduction of the concept of lead user involvement. That is, the ethos behind the concept and the expected benefits. Thereafter, as per all brainstorming sessions, Allsop Europe's ground rules were established and a chair and a scribe were appointed. The chair's role was to keep the discussion from getting off-track and maintain order in the group, whilst the scribes job was to record all ideas that are generated. Once the aforesaid was completed, the brainstorming commenced.

The brainstorming session was structured around the previously identified trends that appear to be associated with the provision of promising new product concepts. The discussions were very much a collection process with everybody involved. Each topic was introduced separately and discussed until the issue was exhausted. In order to get everyone thinking about this issue, questions regarding problems with the current versions from the case companies range were put to attendees and in particularly to the lead users. Since the process of brainstorming was the group's

generation of ideas, their evaluation was postponed and became the main agenda of another separate meeting.

Step Four B – Monitoring the Ideas Progressing Through the New Product Development Process: This step, initially involved a round-table discussion on the 1st of June 2010 with the main implementers aimed at filtering the ideas generated from the brainstorming session. Table 5-7 details the four categorises utilised for filtering the ideas and specifies the next step for each category going forth.

Table 5-7 Categorises for Filtering Ideas Generated at the Lead User Workshop

Theme	Description	The Next Step
Product Innovations for Product Formulation	Products deemed ready to progress to Product Formulation	The ideas were assigned a Product Champion and entered first stage screening.
Product Themes for Internal Brainstorming	Recurring themes omitted from the lead user brainstorming session	The following three themes were utilised as theme to brainstorm around at the internal brainstorming session on the 2nd of June 2010. 1. TV Maintenance Kit 2. Items on desk which could hold or double up as a computer cleaning product
Adaptation	Improvements to existing products	Deemed as *"marketing innovation as opposed to New Product Development"*, therefore were to be followed up by the Sales and Marketing Manager and his team.
	Improvements to the sale of existing products through targeting them differently	
	Changes on packaging format /information on some existing products, that is, an existing product that will fulfil some additional functions that is not focused on at the moment.	
Rejected Ideas	These were rejected on the basis that the case company haven already tried the idea in their new product development process or for issues with practicality.	

Once filtering was completed ideas were monitored as they progressed through the new product development process facilitated the development of a clear understanding of the outcomes of each product idea at each stage in the process, hence, aiding the ongoing evaluation of the involvement of lead users at the early stages of Allsop Europe's new product development process. To facilitate monitoring of the successful ideas, regular contact was made with the project

champion so as to enquire about the status of their idea, in addition**,** interviews, round table discussions, observation of the new product development process and documentation.

Step Five – Analysis Data in Respect to the General Market: Concepts progressing through Allsop Europe's new product development process were tested for acceptance on a sample of end users. This step, initially involved a round-table discussion on the 21st of September and 27th of September 2010, aimed at utilising the expertise of the main implementers to identify a means of testing the ideas generated from the brainstorming session at the lead user workshop, for acceptance on end users. A focus group was conducted on the 30th of September, with eight individuals ranging from the age of 24 to 30 who use Information Communication Technology (ICT) devices on regular bases and three representatives from the case company. The process commenced with a creative thinking/team building exercise. Thereafter, feedback was accomplished by asking the end users to review the proposed concepts in detail, noting in particular the strengths and weaknesses of the concepts. Data gathered from testing concepts on end users were recorded and were utilised to modify the relative products concepts.

5.8.4 Evaluation

The final phase of the research began in September 2008 and ended in October 2010. This phase consisted of an on-going evaluation throughout the entire action research process, in particular evaluating the relevancy of the lead user method in future product development at the case company. Three sources were utilised to collect data from the research site, that is, interviews, documentation and observation of their new product development efforts.

5.9 The Strategy for Data Collection

Keeping the notion of triangulation in mind, to extract the needed information, a number of data collection techniques namely, interviews, participation observation, documents, reflective diary and literature review were employed to gather the needed

information. Each data collection method utilised in this study will now be examined in turn.

5.9.1 Interviews

Interviews can be described as a "conversation directed to a definite purpose other than satisfaction in the conversation itself" (Chisnall, 2001: 173). Van der Zouwen (2001) asserts that interviews are the most frequently used method of data collection in the social sciences and are often irreplaceable. The author argues that the interview is an invaluable method, in which, information is collected from the respondent, and transferred to the researcher via a communication processes between both parties. Darlington and Scott (2002) contribute that the interview takes seriously the notion that people are effectively experts on their own experiences and so best able to report on how they experienced a particular event, which is an essential element of the particular study. In addition, the use of in-depth interviews were deemed necessary, particularly when one considers the benefits offered by in-depth interviews, perhaps the most significant of which is the wealth of detailed information that in-depth interviews have the scope to provide (Weintraub Austin and Pinkleton, 2006). Thus, in-depth interviews should provide the current study with the depth, richness and insight required to obtain the objectives of the current research (Saunders *et al.,* 2009).

Nevertheless, there are a number of factors which one must consider carefully when conducting personal interviews. As interviews involve personal interaction, cooperation is essential. Interviewees may be unwilling or may be uncomfortable sharing information which the interviewer hopes to explore. In addition, the respondents in personal interviews are not anonymous and may sometimes be reluctant to give out confidential information. Perhaps the greatest disadvantage of an interview is the fact that information obtained during its course may be biased. Sekaran (2003) states bias refers to errors or inaccuracies in the data collection, and the interviewer, interviewee or the situation, can introduce bias. Such bias can occur when: 1. Trust and rapport are not established with the interviewer. 2. When responses are misinterpreted or distorted. 3. When non-verbal behaviour encourages/

discourages certain responses. Likewise, interviewees who are subject to the social desirability effect can distort their aims in order to provide the interviewee with the response he/she wishes to hear.

The interview itself was guided by the recommendations of King (1994). He suggests that researchers should have "a low degree of structure imposed on the interviewer, a preponderance of open questions, a focus on situations and action sequences situations in the world of the interviewee rather than abstraction and general opinions" (ibid: 14). The interviews conducted, can therefore be described as semi-structured. Apart from starting with the initial list of primary questions for the interview, it was generally unstructured and further questions were generated from the responses provided by the respondents. This is the main advantage of a semi-structured type interview. The primary questions were altered to suit each of the respondents. The technique described by van der Zouwen, (2001) was also incorporated into the interview so as to encourage further information from some of the respondent's. Van der Zouwen, (2001) encourages the use of a leading question, for example, leading a follow up question with something like *"So, you mean..."*. This, he argues, may give the respondent the idea that he or she is understood by the interviewer and that the interviewer is really interested in what the respondent has to contribute. Table 5-8 documents the interviews conducted in the current study.

Table 5-8 Interview Schedule for Current Study

Position in Organisation	Date	Duration
The Sales and Marketing Manager	19th of November 2008	90 minutes
The Purchasing and Materials Manager	23rd of March 2010	15 minutes
The Chief Executive Officer (CEO)	23rd of March 2010	30 minutes
The Sales and Marketing Manager	23rd of March 2010	60 minutes
The Operations Manager	30th of March 2010	40 minutes
The Sales and Marketing Manager	15th of July 2010	50 minutes
Total		285 minutes

5.9.2 Participant Observation

Interviews as observed by Darlington and Scott (2002), allow access to what participant verbalise, but may not fully dictate verbally what occurs in practice. They advocate that the only method of finding out what actually happens in any given

situation is observation. This is an unfortunate but valid frailty of interviews. According to Rowley (2004), participant observation is when the researcher engages in the information environment and requires skill, knowledge and understanding (Vinten, 1994). Frankfort-Nachmias and Nachmias (2007) suggest that participant observation is an intimate part of the very core of the organisation being researched. Rowley (2004) believes that the benefits of participant observation are, that the researcher undergoes the integrated experience of those in the situation being observed, hence, gaining a more honest appraisal of the phenomenon under investigation. Another appealing aspect of this qualitative technique is discussed by Frankfort-Nachmias and Nachmias (2007) who maintain, that the main advantages of observation is its directness and that it makes it possible to study participant behaviour as it occurs. This enables the collection of first hand data that is not contaminated by factors standing between the investigator and the object of the research. To achieve the objectives of the research, numerous observations were utilised to provide an additional source of data. Table 5.6 lists the observations conducted in the study.

Table 5-9 Overview of the Number of Observation Hours Obtained

Observational Obtained		
Date	**Observation**	**Duration**
8th October 2008	Lead User Workshop	300 minutes
10th March 2008	Brainstorming Session	120 minutes
17th December 2008	Brainstorming Session	120 minutes
30th March 2010	Brainstorming Session	120 minutes
11th May 2010	Lead user Brainstorming Session	240 minutes
1st June 2010	Filtering ideas from the Lead User workshop	90 minutes
2nd June 2010	Brainstorming Session	120 minutes
13th July 2010	Brainstorming Session	120 minutes
14th September 2010	Lead User Brainstorming Session	120 minutes
30th September 2010	End User Focus Group	200 minutes
Total		1550 minutes

5.9.3 Documentation

According to Patton (2001) and Creswell (2003), document analysis provides a behind-the-scenes insight that might not be directly observable and about which the interviewer may not ask appropriate questions without the leads provided through documents. “Documents can be examined for immediate content, changing content over time and the values that such changing content manifests” (Somekh and Lewin,

2005: 35). Indeed, the use of documentation has numerous advantages, most significantly the fact that it enables researchers to study past events and issues. To achieve the objectives of this research, documents of various types both printed and electronic were utilised to provide another data source. These documents are recorded in Table 5-10.

Table 5-10 Overview of Documents used as Sources of Empirical Data

Documents acquired from the company	Other Documents
Allsop Hierarchy 19/11/2008 Electro World presentation 19/11/2008 Screening Stage One Screening Stage Two Brainstorming Digital Camera 30/03/10 New Product concept progress chart 30/03/10 Brainstorming meeting (Lead User) 02/06/10 New Product concept progress chart 02/06/10 Brainstorming Clingo2 13/07/10 Brainstorming Clingo3 13/07/10 New Product concept progress chart 15/07/10 Concept Formulation Roll on cleaning solution 15/07/10 Concept Formulation Key ring cloth 15/07/10 Brainstorming Clingo 29/07/2010 Email from the Sales and Marketing Manager regarding product development progress update 17/08/2010 Emails from the Sales and Marketing Manager regarding product development progress update 17/09/2010 Brainstorming 3D TV 20/09//2010	Web Allsop Europe's home pages http://www.allsop.eu/

5.9.4 Reflective Diary

Existing literature advocates an extensive reflective diary as a rigorous documentary tool (Stake, 1995). However, its advantages overshadow its demands. Saunders *et al.* (2009) highlighted that the use of a diary is a valuable mechanism to record the development of ideas, reflections and research methodology. In addition, the diary provides the researcher with a means of recording choices and their consequences (Reason and Bradbury, 2001). A reflective diary was maintained for the duration of the primary research, which was utilised as a record keeping device, facilitating documentation and interpretation of observations, ideas, motivations and the development of planned interventions and outcomes.

5.9.5 Literature Review

An extensive literature review, compiled from a wide range of sources, provided the researcher with an invaluable insight into the phenomenon under research and allowed various viewpoints to be considered and analysed (see Chapter Three and Four). It is hoped, that this dissertation incorporates as many of these views as possible, in order to give an unbiased overview for the primary research and the areas which warranted further investigation**.**

5.10 Strategy for Data Analysis

The analysis of qualitative data involves:

> *Getting the information (collecting), boiling it down (reducing), organising it in various ways to help you see the patterns and relationships (displaying), deciding what you have got (drawing conclusions), and satisfying yourself and others that you have found what you think you have (verifying)(Kane and O'Reilly-De Brun, 2001: 365).*

However, in contrast to quantitative data analysis, precise rules on how qualitative data analysis ought to be carried out is absent from the literature (Bryman and Bell, 2003). Nevertheless, one of the most notable developments in qualitative research literature over the past two decades, was the development of computer software that facilitates the analysis of qualitative data (Bryman and Bell, 2007). All gathered data from interviews, recorded observations and documentations were recorded, transcribed and inputted into the computer-aided qualitative data analysis software (CAQDAS) - NVivo 8 (see Appendix A). This enabled the researcher to manage, shape and make sense of large volumes of information quickly and easily while also having the advantage of a data audit trial to track changes. However, NVivo 8 is merely a tool, and it was up to the researcher to "reduce the volume of the information, identify significant patterns and construct a framework for communicating the essence of what the data reveals" (Patton, 1990: 371-372). Whilst using NVivo 8 was an essential tool in managing the collected data, it was no substitute for the interpretive skills of the researcher when analysing the data (Easterby-Smith *et al.*, 2001). Table 5-11 details where NVivo 8 was utilised in the present study. Throughout the process of analysing and interpreting the data with the aid of Nvivo 8, the researcher verified the accuracy of the findings with the interviewees to ensure the legitimisation.

Table 5-11 Overview of Where NVivo 8 was used in the Current Study

How NVivo 8 was applied in current study
To manage large volumes of qualitative data
To assist in analysing the open-ended qualitative data
To code the data collected
To compare patterns across nodes
To keep an audit trail of the analysis process

5.11 Legitimisation

To ensure data legitimisation and quality control standards, Morgan (1983) and Lincoln and Guba (1985), proposed four evaluative criteria for qualitative based research: *credibility; transferability; dependability; and conformability*. As illustrated in Table 5-12, these four concepts are parallel to that of the quantitative concepts of *internal validly, external validly, reliability and objectivity*, respectively (Bryman and Bell, 2003). The four qualitative evaluative criteria are now examined in relation to the current study.

Table 5-12 Evaluative Criteria Qualitative versus Quantitative Data

Qualitative		Quantitative
Credibility	⟷	Internal Validity
Transferability	⟷	External Validity
Dependability	⟷	Reliability
Conformability	⟷	Objectivity

Adapted from: Bryman and Bell, (2003)

5.11.1 Credibility

Credibility is concerned with the integrity of the interpretations that were generated from the research (Bryman, 2004). For Lincoln and Cuba (1985), a researcher must do everything necessary to ensure that their interpretation of collected research data is credible. To achieve credibility of the research findings and interpretations, good practices suggested by Lincoln and Cuba (1985) and Yin (1994) were adhered to. Firstly, credibility was achieved by ensuring sufficient time was spent in the field in order to detect any distortions that might occur in the data over time. Additionally, whenever possible, data was collected from multiple sources, allowing for triangulation of evidence on convergent meanings (Yin, 1994), ensuring credible explanations of the interpretations of the data. Finally, all interpretations and conclusions were returned to the interviewees for their deliberation. This allowed the

interviewees to identify any discrepancies in the data and incorporate any details they felt were omitted.

5.11.2 Transferability

> *As qualitative research typically entails the intensive study of a small group, or of individuals sharing certain characteristics (that is, depth rather than the breadth that is a pre-occupation in quantitative research), qualitative findings tend to be orientated to the contextual uniqueness and significance of the aspect of the social world being studied (Bryman and Bell, 2007: 413).*

To achieve transferability in qualitative research, the research context is viewed as essential (Mackey and Grass, 2005). Indeed, for Guba and Luncoln (1989: 241) transferability "depends entirely on the degree to which salient conditions overlap and match". Although qualitative research findings are rarely directly transferable from one context to another, the extent to which findings may be transferred depends on the similarity of the context (Mackey and Grass, 2005). To achieve this, reseachers are encouraged to utilise a method of reporting known as "thick description", which refers to "rich amounts of the details of a culture" (Bryman and Bell, 2007). Lincoln and Guba (1985) argue that a "thick description" will provide others with what they refer to as a database for making judgements about the possible transferability of findings to other environments. However, the question as to whether one case will hold or is transferable to another case depends on the similarity between contexts (Hillebrand *et al.*, 2001). Hence, to determine the transferability of an interpretation one must distinguish the specifics of the context in which the interpretation was generated and the specifics of the context to which the interpretation is to be applied. "However to comprehend the specifics of the second context, one must first construct an interpretation of it" (Hirschman, 1986: 245). Therefore, transferability from one context to another is only achievable when interpretations from both contexts are compared and deemed suitable for comparison (Lincoln and Guba, 1985).

5.11.3 Dependability

Dependability is concerned with "the stability of the data over time" (Guba and Lincoln, 1989: 242). Guba and Lincoln (1989) maintain that, to establish a merit of trustworthiness, researchers should adopt an 'auditing' approach. "This entails ensuring that complete records are kept of all phases of the research process –

problem formulation, selection of the research participants, fieldwork notes, interview transcripts and data analysis decision", all in an accessible manner (Bryman and Bell, 2007: 414). Bryman and Bell also advocate that peers may then act as authors to oversee the dependability of the researcher's work. For this study, three strategies were incorporated to ensure dependability. Firstly, the reliability of findings was addressed in the case method by requiring multiple sources of evidence to triangulate on the same finding. Secondly, the data gathered from interviews, recorded observations, reports, documents, and reflective practices were transcribed or scanned into an NVivo 8 computer file, where it was analysed to increase the dependability of the findings. Finally, the research project was presented to peers and academics at the Postgraduate Review Board in the Business School at Waterford Institute of Technology and the Irish Academy of Management Conference to gain constructive feedback on the matter being covered and the methodological approach employed.

5.11.4 Conformability

''Conformability is concerned with assuring that data, interpretations, and outcomes of inquiries are rooted in contexts and persons apart from the evaluator and are not simply figments of the evaluator's imagination" (Guba and Lincoln, 1989-243). Hence, it should be evident that the researcher has not overtly allowed "personal values or theoretical inclinations manifestly to sway the conduct of the research and findings deriving from it" (Bryman and Bell, 2007: 414). To ensure conformability of this research, an audit trail from philosophical and theoretical background to methodology, to raw data, interview notes, document entries, to analytical procedures, to interpretations and conclusions will be presented for review.

5.12 Summary

This chapter describes in detail the researcher's philosophical stance to the study, which consequently lead to the research approach used to guide the research. Justification for this research approach was presented at the start of the chapter along with the research objectives and research questions. Following this, the research design and the research approach adopted which facilitates the answering of the research questions and allow the attainment of the research objectives was outlined.

The latter part of the chapter justify's the data collection methods employed and how the data gathered was analysed and interpreted for this study. Finally, the chapter concluded with a discussion on the credibility, dependability, transferability and conformability of how the data was gathered, analysed and interpreted.

Chapter six

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Research Findings

6 Research Findings

6.1 Introduction

The purpose of this chapter is to present the findings arising from the primary research on the chosen company. Following good practice presented by Madhavan and Grover (1998), when analysing the gathered information, data that supported current thinking, conflicted with current thinking and data that presented new insights were examined. The chapter is presented in three sections essentially as a means of organising and presenting a host of complex and interrelated issues in a more accessible manner. The chapter commences by detailing the findings arising from the diagnosis phase of the research and includes a case context detailing the company's profile and the current state of practice of their new product development process. Following this, the findings resulting from the intervention stage of the research is discussed. That is, the process of involving lead users at the early stages of the case company's new product development and the outcomes of the collaboration. Finally, the entire action research process is evaluated, primarily examining the relevancy of the lead user method in future product development in the case company.

6.2 Case Site Context

An industrial leader in innovation, the family owned business Allsop was originally established in the United Sates in 1965 by Ivor 'Buss' Allsop when he invented the Ski-Boot In. This was followed by a range of products for the skiing market, producing such commodities as the ski holders and ski shoe holders, which subsequently evolved into a sub-brand of Allsop, called Softride, primarily producing outdoor-based products. In the 1970s Allsop expanded into the electronics market, with the introduction of the mechanised cassette deck cleaner. The Sales and Marketing Manager describes how it was the success of this *"genesis"* product that led the company to expand into a global market:

> *It was phenomenally successful, phenomenally successful, I'm sure the guys made tens of millions of dollars out of it…and all from just spying a gap in the market and then using their creative side...when they began to export into Europe they realised that they were selling so many that it made sense to have a manufacturing unit somewhere in Europe.*

In 1979, the European subsidiary, Allsop Europe[3] was setup in County Waterford, Ireland, in a modern production facility, incorporating Research and Development, Quality Control, Sales and Marketing as well as General Administration. Allsop Europe employs 30 employees and is an ISO 9001 accredited Quality Manufacturer[4]. The subsidiary was set up as a gateway into the European market, whilst taking advantage of Ireland's low cost manufacturing at the time, in addition to its proximity to the continent. Originally, Allsop Europe focused on manufacturing products designed in its American Headquarters, by simply incorporating them as part of their product portfolio. This arrangement led to the continuous expansion of Allsop Europe.

Ultimately, Allsop Europe's organisational strategy was set to change. Due to global economic changes and increasing production costs, Ireland became an unsuitable location for manufacturing, driving Allsop Europe to outsource its manufacturing to cheaper economies further east. Additionally, Allsop Europe became increasingly aware that Europe was an independent market and products that were successful in the United States market did not necessarily work in the European market. Consequently many products introduced into the European market failed. The following comment from the Sales and Marketing Manager reflects this statement:

> *We're not a United States of Europe...we have to be sensitive to the different languages….to the different cultures within the different markets in which we operate. So, if you take our ergonomic products, our mouse pads…within certain countries, certain images are popular but they are not popular in other countries. That's nothing to do with the quality of the image. It's all to do with the taste of the market.*

It was clear that Allsop Europe needed to become a stand-alone entity and not be consistently relying on Allsop Inc. to come up with new product concepts for the European market. Hence a decision was made; Allsop Europe would evolve from a

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[3] Allsop Europe has effectively two businesses operating within its premises; the first is computer accessory/audio visual care and the second is a high spec trade moulding service specialising in leading edge, technology driven products to both local independent businesses as well as major international corporations. For the purpose of this research, only the first business was investigated.

[4] ISO 9001 certification represents a formal acknowledgment by an accreditation organisation that a company meets the intent of quality management standards issued by the International Organisation for Standardisation. A company only receives this award after successfully passing an audit examining how well the standards were implemented and verifying the compliance of the company's employees to the guidelines.

manufacturing company to independently developing its own innovative products for the European Market. Today, Allsop Europe's new product development process operates in conjunction with Allsop Inc.'s new product development efforts and each party can acquire products from the others system if required. The Sales and Marketing Manager describes this process:

> *We do our own new product development in tandem and then at different points of the year, we meet up and we take what we want from their range and they take what they want from our range. In the meantime we try to communicate to the point that we're not working on exactly the same types of products.*

He continues to give an example of how Allsop Europe has recently acquired an entire product range from Allsop Inc. called the 'Clingo' range:

> *We will literally take those products as ours if we get the right level of feedback. It's almost completely left field of our own internal product development process, but it just makes sense for us to do it in that way, because we have the products, they are ready to go and if we push the button we can have them on the market in a matter of months. In this particular scenario, the range of products was launched at two trade shows at the start of the year and the response to it was very very favourable in the northern European market.*

Whilst the ability to acquire completed products from Allsop Inc.'s range is undoubtedly beneficial to Allsop Europe, it has nevertheless restricted Allsop Europe from becoming a stand-alone entity as they are still quite reliant on Allsop Inc. to come up with new product ideas.

Nevertheless, the aforementioned transformation in the organisations strategy led Allsop Europe to evolve into a master distributor of products, trading in 29 countries in Europe and the Middle East. Furthermore, they have established a highly efficient network of distributors, which works in tandem with their sales and marketing efforts in achieving their goal of consolidating the European markets in which they operate. Personnel at Allsop Europe take pride in having strong relationships with large and well-respected organisations. The importance of their distribution channel to Allsop Europe is evident in the following comment from the Sales and Marketing Manager:

> *Our distribution channel is one of our key assets as a company...its intangible, but it's very very important.*

Whilst the audiovisual care remained the fundamental element of the business for many years, today, Allsop Europe primarily operates in the computer accessories area.

> *The computer side of our business has evolved and now about 75 percent of our turnover would be computer products, and 25 percent would be in audio visual products....we have a heritage in audio visual products, so we're always drawn to those particular product categories*. (The Sales and Marketing Manager)

Their drive to develop innovative products has been acknowledged by the Consumer Electronics Association (CEA), who honoured Allsop Europe with an Innovations 2008 Design and Engineering Award, for their Cool Channel Platform[5]. Today Allsop Global consists of the headquarters Allsop Inc. based in Bellingham, Washington, Allsop Asia based in Shanghai, China and finally Allsop Europe based in Waterford City, Ireland. In addition to the technology division and Softride brand, the company has also developed a new Home and Garden division, serving the solar, gardening and lighting market. All divisions operate as independent businesses but combined they possess over 500 different patents registered in 55 different countries all over the world, with this number increases annually. As the Sales and Marketing Manager explains:

> *We are three.....We're part of the same group but we would be quite independent of each other. At the .end of the day, like any organisation…once you're profitable, once you're making money and once you're repatriating your profits - you're very much left to your own devices.*

6.3 Diagnosis: Allsop Europe's New Product Development Process

As succinctly put by the Purchasing and Materials Manager:

> *We should pre-empt things by saying that obviously the three-day a week is after effecting everything...It's after making a mess of it, to be quite honest and the time available to us.*

Similar to the majority of organisations, Allsop Europe has been affected by the current economic climate and their new product development efforts have suffered as a result. In addition to the foregoing issue, the dynamic retail environment in which Allsop Europe operates demands their new product development efforts to be

[5] The Cool Channel Platform uses a non-slip woven surface with engineered channels for passive air circulation to help keep your notebook computer cool. Besides the benefit of less heat on your lap, this will also help your battery last longer and your computer operate faster.

"fresh and innovative". Comments from the Sales and Marketing Manager succinctly illustrate the aforesaid:

> *The retail environment in which we work is very strong. If you're not innovative it just becomes a price argument and then you're racing to the bottom.*

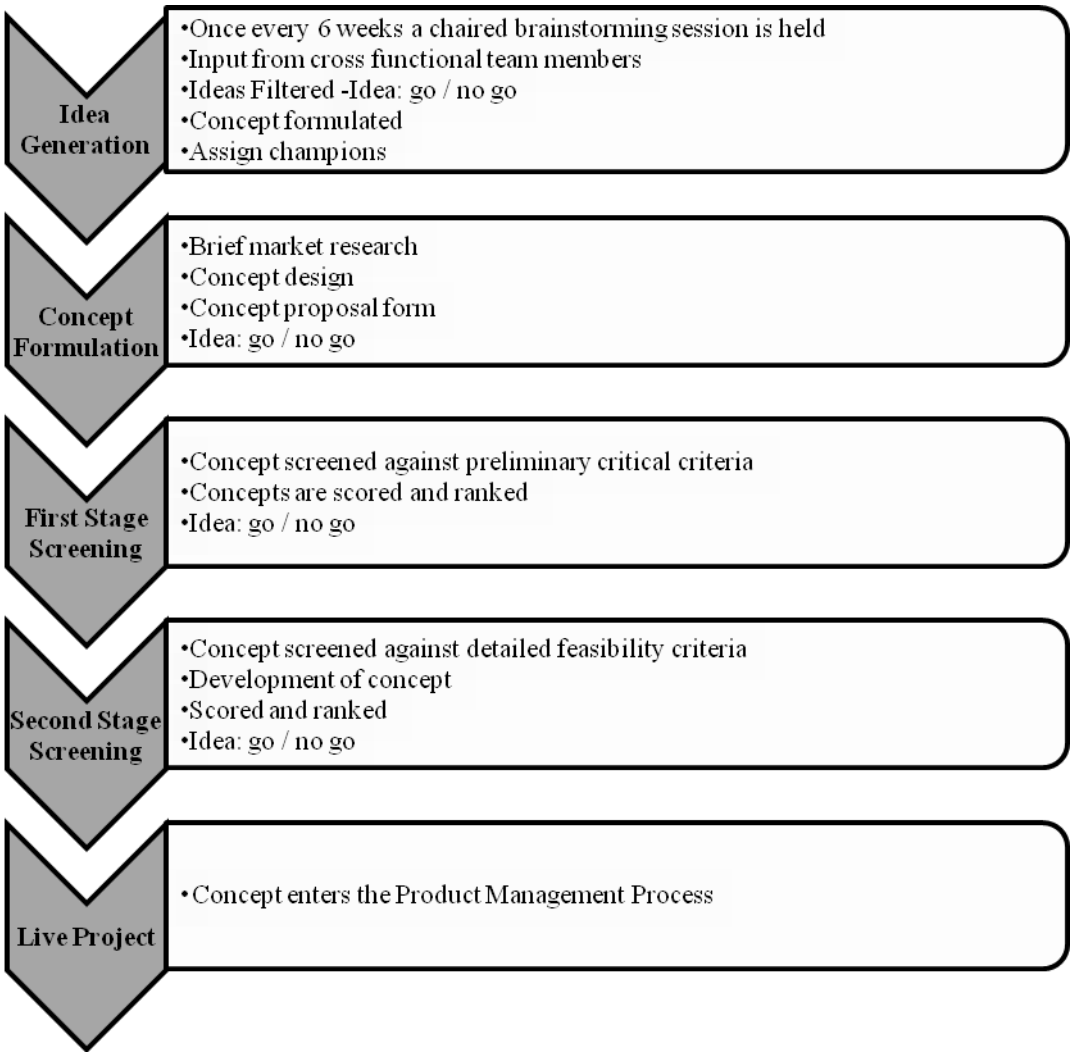
In conjunction with the need for Allsop Europe to be innovative, the dynamics of their environment are rapidly changing, with products possessing rather short life cycles, resulting in the need for a short new product development process being essential for their success in the market. The Sales and Marketing Manager describes this as another *"challenge"* for Allsop Europe:

> *We're continuously having to refresh our range...where products would have had a product lifecycle of 10 or 15 years, we're developing products now, like for the iPod, that have a product life cycle of a year if you're lucky...Again, for us, that's a challenge...within our product development process to get things to market quicker because the market moves on quicker.*

Figure 6-1 illustrates the new product development process at Allsop Europe. From the offset, it is important to note that Allsop Europe's new product development is not assigned to a specific department, rather it is the function of employees from all departments. As depicted in Figure 6-1 the early stages of their new product development process follows a stage-gate framework with clear differentiation between stages, stage procedures and has specific stage outcomes. The process commences with the idea generation stage. In this stage, a brainstorming team is established which primarily consists of the Sales and Marketing Manager, the Regional Sales Manager (UK and Ireland), the Production Manager, the Purchasing and Materials Manager, the C.E.O., the Moulding Manager and the Graphic Designer. In addition to the foregoing *"constant members",* two alternating people from within Allsop Europe are invited to participate in the process in order to enhance diverse thinking within the group. The Regional Sales Manager (Western Europe) has been pre-appointed as a chair. Her role involves organising the idea generation sessions, keeping the discussion from getting off-track and maintaining order in the group. The C.E.O. describes the chair as being:

> *Very capable in the brainstorming arrangement...she's got a great teachers way about her in bringing us all together and controlling us.*

Figure 6-1 The Early stages of Allsop Europe's New Product Development Process



Prior to each session commencing, an individual within the group is appointed as a scribe. Their role is to keep note of all the different ideas generated during the session, which will later be documented on the company's server. The session centres on brainstorming thematic issues. This is achieved by brainstorming around different aspects of the thematic issue. Examples include, the tasks involved, applications used, problems associated with the issue and finally, the solutions to the problems. Each member receives coloured post-its[6] to jot down their ideas. Once all the ideas have been generated for a particular aspect, the post-its are moved to the board and are categorised under relative headings in order to keep control of the

[6] Coloured sticky notepaper is utilised as colours simulate thinking of ideas.

volume of ideas generated. Once product ideas have been generated for each thematic issue, the team sets out to filter the ideas. To accomplish this, members of the brainstorming team are invited up to the board to review the product ideas and choose their top five. Subsequently, each member is asked to identify their top choices, every vote a product gets represents one point. The top scoring product ideas are considered viable to progress into the next stage of the new product development process and are allocated to a Product Champion, who is responsible for keeping the momentum of the idea through the new product development process. The Sales and Marketing Manager explains how the ideas are allocated:

> *I suppose it's just collective responsibility. The idea is that everyone should have an even amount of projects to do...generally speaking people step up saying "I'll take that on", "I'll do it"....generally speaking, we have been proactive in doing that...The idea is that when we are screening more things out, we should be able to go around the room at the brainstorming session...and say "ok well how many live projects have you?" "I've three", "how many have you?" "I've one", "how many have you?" "I've two", "how many have you?" "I've one", "Ok one of the two of you guys will take it because I've three live and you have two live".*

Alternatively, ideas which did not make the list of top scoring product ideas are documented by the scribe and reviewed at a future date.

As illustrated in Figure 6-1, successful ideas coming from the idea generation stage progress into the concept formulation stage, which is completed by the appropriate Product Champion. This stage involves developing the idea, conducting preliminary market research and finally completing a concept proposal form (see Appendix B). The Operations Manager describes his experience in completing this stage:

> *I have done a number of these, and basically, what I do is, I write down what I perceive as the function of it, that is, the idea that was put across at the brainstorming meeting...then I look it up on the internet and see if there is any comparable products...I'd look at different areas on the internet...first, I'd see was it actually out there, is it available as a retail product. If it is, I wouldn't go any further. On the other hand, if there are products like it but are not the same as it...I would go for it and say, "Right, these are our options with this thing, we can go this way, this way and this way" and I just say it's worth passing or it's not.*

Product concepts that are successful at the concept formulation stage enter a preliminary screening process, collectively referred to as first stage screening. During this stage, an idea is uploaded onto a product information system, where members of the organisation appraise the idea under a set of critical pre-developed criteria (see Appendix C). The Purchasing and Materials Manager has been

appointed to act as a New Concept Coordinator. His role involves liaising between the different departments and organising innovation meetings. He tells of his experience with the process:

> *The idea is given around to the different people and they are asked to score the idea based on the first stage screening...based on the results of that, we either pass or fail. I do a lot of the tabulating...following up and trying to get them done to the set dates. Once it has gone through the first stage and obviously either it passes or fails, if it passes it goes back to the Product Champion, to bring it through second stage screening.*

Product concepts that are successful at meeting the criteria set out in first stage screening proceed into second stage screening which consists of a detailed feasibility screening process (see Appendix D). The Product Champion is required to liaise with the different departments within the organisation to get their views on different aspects of the concept. The Sales and Marketing Manager describes how this process works:

> *When a product goes into second stage screening...the process is more drilled down than the first stage screen process, where each separate area within the company has to give their input into it. So, I'll give a sales and marketing input into it, I might speak to the Quality Manager about compliance in relation to the production, if there are any barriers to making a particular product for compliance reasons...There are a number of different criteria, which we set a tolerance level to, that the product has to pass to get through second stage screening.*

The Purchasing and Materials Manager expands on how he provides input on the idea in second stage screening from a purchasing perspective:

> *At present, I have two or three of them out with some of the suppliers, where we are looking at trying to refine it and see what's not possible and what's possible from their side. Like, we might have an idea that is great but they might not be able to make it, so what we do is evolve it to a certain extent and refine it as we are going through the second stage screening process...we take a high level idea and we file it down a bit, now it's not finished, it's not final but it's getting more of an idea of what a supplier can do and the other side of that is we can see what the cost is.*

Upon successfully meeting the criteria set out in second stage screening, the new product concepts are deemed as *"a live product"* and will proceed into the full Product Management Process under the control of the Product Champion.

6.3.1 Problems Occurring in their New Product Development Process

Despite following a strong stage-gate process, Allsop Europe's new product development efforts exhibited serious difficulty. In fact their process was repeatedly miss fitting buyer's needs to deficient or poor product concepts. Occasionally they

had even experienced product failure. The Operations Manager and the C.E.O. respectively provide proof of this issue:

> *What we tend to do is, bringing on products thinking they are great and then they don't fly in the market.*
>
> *We have developed so many products through the years, even if you just take the last two years, which went out into the market and then went nowhere...not just we here at Allsop Europe but Allsop Inc. in the United States as well...like there's the home port which is a product for holding the phone and your coil of cable inside it...it's a nice idea, a good idea but nobody buys it.*

As a result Allsop Europe's still relied heavily on Allsop Inc.'s new product development process. A recurring factor affecting their new product development efforts was identified as the lack of demographics in the brainstorming team, affecting the success of their brainstorming sessions, which in turn, was affecting their new product development process. The following comments from the Operations Manager and the Sales and Marketing Manager respectfully are indicative of this:

> *In the whole new product development process...the demographics are a problem…in general it's older people trying to come up with ideas. The question is, are they valid ideas for the people who are buying the products?...We are trying to be objective, we have to be objective in what we are trying to do…but we are in a kind of an encoded environment and we think what we are doing is right.*
>
> *We would have been seen very much as an industry leader, so we would have given a product and the retailer would have sold the product. Now the area that we have evolved into is much more competitive, there are lots of companies that are very competitive within our area and for us to be as innovative as everybody else or more innovative, we need to find other ways of coming up with ideas other than just ourselves internally brainstorming because it's a bit myopic if we are doing it ourselves the whole time.*

Despite efforts to be objective, the demographics of the group such as the age profile of the "*constant members*", the fact that the group is predominantly male and the longevity and familiarity between the members was seriously affecting Allsop Europe new product development process. The foregoing difficulties resulted in an organisation wide awareness of the need for input from external sources, such as users during the early stages of their new product development efforts. This would ensure that the content that enters new product development is correct for the market. The following comment from the Operations Manager illustrates the foregoing:

We were going out with our best shout, but it's without any feedback...We might find, if we had three or four products, users might like one of them and think the other two are terrible, and they would never buy them. Whereas, we would have convinced ourselves in here, based on the various criteria, that this is the best thing since sliced pan...we are in a kind of an encoded environment and we think its right but...there is no point in a product going out there and not selling.

6.4 The Intervention: Changing the Mindset of Allsop Europe to Believe they Could Involve Users in Their New Product Development Process

As the diagnosis phase suggests, Allsop Europe acknowledged the importance of incorporating external input in their new product development efforts. Nevertheless, they assumed a passive role in doing so. The Sales and Marketing Manager provides explanation for this submissive role:

It comes probably... from having been the market leader for so long in the product categories which we were in...Generally speaking we brought products to the market, and on the basis of us bringing the products to the market, the market took the product because we would have been the market leader.

We're in a situation where we obviously manufacture, then we sell to a distributor, who sells to a retailer, who sells to the customer, so we're those steps away from the end consumer ourselves, and we're those steps away from buyer interaction.

Adding to this, Allsop Europe expressed some hesitation towards the concept of activity going out in search of external input for their new product development process. For instance, the idea of user's willingly disclosing information on potential product concepts, instead of bringing the idea to the market themselves, stunned management at Allsop Europe. The following comments are indications of this statement:

There is a thing with distributors and the agents...if they have a good idea, they are not going to want to share it with you because they can turn it into a product themselves...it's very rare that you actually get the customer to get involved with you, it depends on how you get on with them, your history with them...What I have come across is, if you are really in with a customer they might say to you "look I'm selling that thing and selling lots of it, could you make it?" and then "could you make it better?" that's the type of thing you get but as far as him getting involved in doesn't happen. (The Operations Manager)

Sometimes we go and try and get feedback from the customer, to say "we want to involve you in the product development process" and you get a certain level of; "look you're a leader in this category you should be innovating not me"...it's just to try and manage that relationship without losing face and that's just a certain perception of how we have done business in the past, that I should come to them with a finished product rather than with a concept for discussion. You would want

> *to have a very good relationship with the lead user because there can be all kinds of different interests that users, in terms of the distributors or even the end customers at the shop could have, they might have more of a vested interest in getting a product off or it might compete with a product they already have.* (The Sales and Marketing Manager)

However, even with this hesitance and their passive role, input from users such as distributors and customers, have occasionally proven to lead Allsop Europe to develop innovative new products. The C.E.O. provides confirmation of this by providing an example of such products:

> *This mouse pad was a customers idea...it was our German distributors Project Manager who suggested that, because all computers*[7] *eventually scuff the screen because the keys are sticking to it...if you look at any computer you'll find that there is a small space where it shouldn't be able to scuff and brush against it, but what happens is, we all do it. We put more and more stuff in our computer bag and the result is, the computer is squashing the keys against the screen...we didn't even have a product like that or an idea about a product, but that sold well and that actually emigrated across the Atlantic as well and Allsop do numbers, really good numbers with that.*

It is imperative to note that the foregoing collaboration resulted from the user approaching Allsop Europe, rather than Allsop Europe proactively trying to involve their users in their new product development efforts. Indeed, the following comment from the Sales and Marketing Manager reveals the passive role Allsop Europe played in organising the collaboration:

> *But it was them [users] coming to us proactively...in the course of a meeting saying...can you produce a product like this for me.*

Nevertheless, these ventures provided Allsop Europe with an insight into the benefits of incorporating external input into their new product development process, and were eager to *"tap into market knowledge"* again. In particular, they felt that external input would make their new product development efforts more *"fresh and innovative"*, perhaps give them a quicker time to market and a more accurate assessment of consumer needs thus, reducing the potential risk of miss-fitting buyers needs to an unsatisfactory product concept as they have repeatedly done in the past. Additionally, they felt it would enhance the diverse thinking within their cross-functional brainstorming group and build and sustain stronger long-term relationships with their users. Indeed, they longed for an impartial insight into the

[7] The computer, which the C.E.O. is referring to, is a laptop.

strengths and weaknesses of their product concepts. The following comments from the C.E.O. and the Sales and Marketing Manager respectively reflects this statement:

> *I think there should be a means by which we could get true consumers opinions because we are all bias in favour of our products ourselves, our distributors will also have different bias in how they view products, but none of us are really consumers. We're consumers in other ways, but, we're not proper consumers in a sense that...if we're looking at our own products we're already bias in one way or another about them, but I believe what we should have, is access to some form of reference group that wouldn't have pre-conceived ideas...It shouldn't be too difficult to get, somebody who is not directly associated with what we're doing and what we are and what we have been doing. I think that would help with final product selection.*

> *Given the longevity of our business, our demographic profile is older rather than younger, so at 38...I think I am the youngest person working in the office environment. When it comes to a lot of the products (even from the sales team perspective that we are actually selling), the profile of our customers is our profile but also younger…I think there is a benefit for us in mixing up our demographic profile in getting input, even on stuff within a Waterford environment, which is again given the economic reality...it's a very cost effective way for us to maybe get some consumer input for a demographic profile that is 30 years or under which we can't get at the moment.*

As the latter suggests, despite Allsop Europe hesitance towards the concept of involving users at the early stages of the new product development process, management at Allsop Europe were interested in the process. Comments such as the following comment from the Sales and Marketing Manager illustrates their eagerness for the concept:

> *We have always been on the front foot bringing products in, but now our market is more competitive and our innovation hasn't been as good, so the skill set required by us internally to extract that information from the customers is different to the skill set that was required when we just had to present and the product would literally sell itself...I think we have a bit of a knowledge gap there that we are trying to improve so I hope you can help me with that.*

To narrow this *"knowledge gap"* management at Allsop Europe were anxious to learn how to implement user involvement through a defined process. The following comment from the Sales and Marketing Manager is indicative of this:

> *It's easy for us to say "do you have any new product ideas?"...have you any observations on our products that you are selling?"...but it's going to have to be a bit more scientific and a bit more structural than that.*

Allsop Europe hoped a defined process would encourage users to be more enthusiastic about getting involved in their new product development process. Furthermore, as the previous comment from the Operations Manager revealed,

Allsop Europe was eager that this process would also incorporate "*relationship management aspects of dealing with customers*".

Narrowing this *"knowledge gap"* became the main focus for a workshop where participants learned both the theory and practical skill set necessary to successfully foster innovative ideas in forthcoming inter-organisation cooperation. To achieve this, the workshop commenced with a balanced interpretation of the concept of lead user involvement in the early stages of the new product development process, presenting methods for implementing user involvement, in addition to the benefits and detriment of doing so. This was followed by examining ways of building and strengthening their relationships with other organisations during collaborations. For instance, methods of building trust and commitment. Finally, a discussion was held on the suitability of such methods in Allsop Europe new product development process, during which necessary adaptations were suggested by participants from Allsop Europe.

6.5 Implementing Lead User Involvement

As discussed in the methodology the foregoing stages became the basis for a series of interventions designed in order to implement lead users involvement in the early stages of Allsop Europe's new product development process. Each intervention is discussed in turn.

6.5.1 Identify Trends

To commence the process of involving users in the early stages of Allsop Europe's new product development process, Allsop Europe firstly decided to use their cross-functional new product development idea generation team during the collaboration. This team then set out to identify trends affecting their market that appeared to be associated with the provision of promising new product concepts needed to be established. Three methods were identified by Allsop Europe that were capable of identifying such trends, as illustrated in Table 6-1 these included, industry interaction, show participation and general media.

Table 6-1 Methods Utilised by Allsop Europe to Identify Upcoming Trends in the Market

Key Methods	Description
Industry Interaction	Associations with other corporations within their industry, such as their distributors
Show Participation	Consumer Technology Tradeshows, such as CeBIT and Consumer Electrics Show
General Media	Industry wide publications such as email circular, newsletter

Allsop Europe discovered that other corporations within their industry such as, a number of their distributors had good market knowledge and were capable of forecasting future trends. Based on this, they began to incorporate discussion on upcoming trends into customer visits. This is evident in the following comment from the Sales and Marketing Manager:

> *When we talked to our customers...it depends on the customers but some of them are extremely good at forward looking - industry progression. Some of the customers we work with, also manufacture their own products, so they sell Allsop Products but they also manufacture a range of products for themselves...those type of customers we would discuss trends with because we both need to be looking ahead together.*

Coupled with the identifying trends through their industry interaction, Allsop Europe participated in trade show provided them with significant insight into their market. In fact the C.E.O. describes their attendance at shows such as, CeBIT and Consumer Electrics Show as having an invaluable and innovative insight into *"what direction the industry is going",* in addition to providing them with excellent networking opportunities. Indeed, the following comment from the C.E.O. is indicative of this:

> *[The Purchasing and Materials Manager] for example has attended the recent CeBIT show in Hannover, we sent him out as our scavenger to see what he could find in the worlds product development. As generally speaking you have exhibitor's coming in from South East Asia, China, Taiwan and Ceria. So we might get products from there, well and good if we do, but if we don't we will get ideas.*

The C.E.O. continues to reveal his experience at the recent Consumer Electronics Show in Las Vegas:

> *I brought over whatever products that we had brought to the concluding stage and put those on exhibit...we met a couple of our regular distributors which was good and then there were other people that we wouldn't have known before… I got to see a few halls and see that 3D television is the big thing that's coming down the tubes.*

Finally, Allsop Europe found through monitoring vast amounts of industry publications, they identified upcoming trends. This is evident in the following comment from the Sales and Marketing Manager:

> *Because we are involved in the electric industry, there is a huge amount of email circulars…newsletter…that gives us industry wide publications; we probably would be an industry that has more email based publications than most industries…by scanning and reading those we found for example...that current static's show that 96 percent of men in their 30's have recently watched online videos.*

Equipped with the in-depth knowledge of trends and figures gained through the foregoing methods, Allsop Europe were able to identify four thematic issues as illustrated in Table 6-2. These thematic issues were essential for the remainder of the user involvement process, as they formed a basis upon which the rest of the process was built.

Table 6-2 Themes to be used at the Lead User Brainstorming Session

Thematic Issues
Portable Computer Screen Cleaning Solutions
Computer Bag Accessories
Watching Videos Online
Portable Ergonomic Solutions for Using Ones Laptop While Travelling

6.5.2 Identify Lead Users

In order to ascertain who their lead users were Allsop Europe first determined the criteria that allowed for their correct identification. Firstly, Allsop Europe felt that the issue of linguistic skills needs to be taken into consideration. This is owing to the fact that, Allsop Europe believed that the richness of communication between them and the lead user would be reduced if they collaborated with a lead user who was not fluent in English. Furthermore, Allsop Europe also identified the current economic climate as a factor that would affect their choice of lead user. As similar to the majority of organisations, the current economic climate has resulted in a restriction on Allsop Europe expenditure and as a consequence limited money is available, thus the collaboration had to be inexpensive. The following comment from the Sales and Marketing Manger is indicative of this:

> *There is a certain practicality in bringing everybody to us to do it. In an ideal world it would be great to be able to bring our customers here...but you can spend quite a lot of money on it and time and preparation. It's well worth it but there is a certain economic realty to not being able to do it at the moment.*

Hence, Allsop Europe decided to collaborate *"with either an Irish or UK based lead user".*

It was crucial for Allsop Europe that their choice of a lead user would be guided by the characteristics ascribed to lead user. That is to say, the user would be at the leading edge and knowledgeable in the chosen trends identified in Table 6-2 and the user will benefit significantly from obtaining a solution to their needs. Taking into account the first characteristic, Allsop Europe was keen that their lead user would be one of their distributors as a number of them have excellent market knowledge. The following comment from the Sales and Marketing Manager is indicative of this:

> *The distributors we work with have great industry knowledge because they are in the store on an ongoing basis. They are seeing what's happening, they have an input but particularly the buyers have a great input because they are the ones in theory who should be really watching the trade, looking at what's new, looking at what the changes are, what the trends are and responding to the trends.*

Moreover, their choice of lead user had to be largely influenced by the forecasted trends. Keeping the forgoing in mind Allsop Europe search through their data base and identified a potential lead user as an Irish distributing company. The following comment from the Sales and Marketing Manager is indicative of this:

> *We took a look at his range of products and the areas that we knew they were stronger in...like computer bag accessories, we know they are very strong in that particular category.*

Considering the second characteristic, it was evident that their distributors, including the Irish distributing company would undoubtedly benefit significantly from obtaining a solution to their needs, that is, a finished product currently missing from their product range that they could offers to retailers.

The final factor to influence Allsop Europe's choice in lead user was the need for a strong pre-existing relationship between participants. In fact, Allsop Europe considered this to be a critical success factor of the collaboration as it would ensure a compatible culture existed between Allsop Europe and the potential lead users. In relation to the Irish distributing company, the Sales and Marketing Manager tells how they have:

> *A long association with the Irish Lead Users and we have a good working relationship, where they are quite frank and they have always always always been forthright with us with regard to opinions on the products we develop, on the style of our packaging…so we know that they have the ability to give us that feedback.*

Furthermore the Sales and Marketing Manager describes how their past experiences would influence the Irish distributing company's willingness to partake in the collaboration. The foregoing comment from the Sales and Marketing Manager is indicative of this:

> *I think it would make them more enthusiastic to get involved, simply because we have always entertained their criticism and their feedback. For example, in the past we have gotten feedback on how we physically name our products. Particularly, whilst how we name our products is clever, they feel that they are somewhat obtuse...Now when we bring out new products, the products are much more direct in name. So they have made an observation that when they tell us something we do distil it, we take it on board and we make a change.*

Moreover, the Sales and Marketing Manager felt that the Irish distributing company would be enthusiastic about the products generated as a result of his involvement in their development, which in turn, would benefit Allsop Europe sales. The Sales and Marketing Manager reveals the justification for the foregoing:

> *If they are involved in the development of a product or a product category, then when it is developed we have effectively sold them the product and they should be more enthusiastic to sell that product…I see that as a benefit for Allsop Europe working with them.*

Based on the foregoing it was determined that the Irish distributing company was the most suitable lead user for the current collaboration.

6.5.3 Coordinating Lead User Activities

The successful involvement of a lead user in the early stages of Allsop Europe's new product development process could not have been achieved without the presence of a Champion. This role was acquired by the Sales and Marketing Manager. His first task was to invite the Irish Lead Users to participate in Allsop Europe's new product development process. In doing this, he communicated the goals and objectives of the partnership, which reduced any uncertainty and ambiguity that the Irish Lead Users may possess towards the collaboration. Thereafter, a date for the lead user involvement was mutually agreed upon. The next duty of the Sales and Marketing

Manager performed was coordinating the lead user brainstorming session, which was based on the thematic issues identified in Table 6-2.

A relaxed and friendly environment immediately emerged between participants from Allsop Europe and the Irish Lead Users, as they engaged in casual conversation prior to commencing the collaboration. The exchange of personal information during these conversations indicated the high level of trust that existed between both parties. Furthermore, the open, honest and somewhat informal manner of these conversations set a tone which continued throughout the brainstorming session with the exchange of information carried out in a conversational rather than business manor.

As soon as the brainstorming commenced, the discussions were very much a collective process with everybody involved. The knowledge and expertise of the Irish Lead Users was evident throughout the session, which they were keen to share with Allsop Europe. In fact, the Irish Lead Users were the first to contribute an idea to the brainstorming session, as they revealed that they find the Clearview Maxi[8] to be excellent screen cleaner. They continued to disclose that they have a Clearview Maxi in all the cars at home, which they use to clean the windscreen, despite the function of the Clearview Maxi actually being to clean digital screens. From this, they suggested that the Clearview Maxi could be aimed at cleaning windscreens or perhaps Allsop Europe could incorporate this function in the packaging. The Irish Lead Users enthusiasm and commitment to the process continued throughout the session, as they continuously contributed their opinions and advice on existing products. For instance, they suggested how Allsop Europe could improve their sales by targeting existing products differently, as well as proposing packaging format/information changes, for example changing the name of the Cool Channel Platform[9] as the Irish Lead Users felt the name was not self-explanatory. As well as providing input on existing products, the Irish Lead Users generated new products ideas throughout the brainstorming session, which they did in a benevolent manner.

[8] Non-streak, anti-static cleaning solution suitable for LCD, plasma screens, digital cameras, PDA's, MP3 players and GPS systems.
[9] It must be noted that Allsop Europe had recently changed this products name from Cool Channel to Cool Channel Platform

In addition to contributing ideas of their own, attendees including the Irish Lead Users regularly suggested how the ideas of others could be altered to enhance the design. These suggestions were not viewed as confliction, rather as an essential part of brainstorming; comments about ideas were seen as a means of improving the idea rather than criticism. This is particularly evident in the following example; one attendee generated the idea of an iPhone holder with a microfibre cloth attached to its base, suggesting that the microfibre cloth could be used to clean the screen of a computer. Another attendee then piggybacked this idea, transforming the idea to incorporate an area that would hold a kit for cleaning the screen. Subsequently, yet another attendee expanded this idea, by combining it with a previous idea of a cleaner that would work like the shoe polish cleaner and added that the cleaner could change colour to red when it is running out, similar to the razor Gillette Fusion.

It is interesting to note that the level of trust and commitment among participant increased as the brainstorming session unfolded and were particularly intense during it's the final stages. This was especially evident, when the idea of a laptop starter kit was generated and the Irish Lead Users instantly went to fetch a folder from their car. The folder contained a list of best selling items at their main Irish retail consumers and suggests that the kit could incorporate some of these items, hence, increasing Allsop Europe's chances of generating sales. Participants from Allsop Europe were keen to obtain this input and instantly took notes. This act of sharing confidential information and Allsop Europe eagerness to document the Irish Lead Users input was a clear indication of the high level of trust and commitment between the parties.

Furthermore, it is interesting to note that throughout the brainstorming session attendees consistently referred to the ideas generated collectively. The repetitive use of the word "*we"* was commonplace throughout the discussion, such as "*the idea we came up with"* and "*we ended up"*. Indeed, participants were completely comfortable about referring to their ideas in this manner. Indication that they consider the work that they did together, as a team effort, reinforcing the intense level of commitment and trust between participants. As the latter suggests both parties interacted and cooperated very effectively and efficiently, resulting in the

brainstorming session generation of 42 product ideas, as illustrated in Table 6-3. From the number of ideas generated it is evident that attendees were extremely comfortable contributing their ideas and suggestions.

Table 6-3 Ideas Generated at the Lead User Brainstorming Session

Portable Computer Screen Cleaning Solutions	
Idea	**Description**
Clearview Maxi for cars windscreens	Make a larger Clearview Maxi that could be used to clean the windscreen
Dental floss for computer	String that would clean between keys
Mouse pad with microfibres cloth on one side	A mouse pad that has a microfibres cloth underneath, so that you can pick it up and clean the screen
Cleaner that works like the shoe polish cleaners	With a refillable section for the cleaning solution
Refillable cartridges for the previous product	Refill that can be used when cleaning solution runs out
Peel off screens	Like on racing goggles so when it gets dirty you can peel off the screen
A pen/pencil holder with built in section to hold cleaning equipment	The idea being that because the penholder would always be on your desk, it would increase the likelihood of using the cleaning equipment.
A cable manager with cleaners attached	A cable manager that has a built in section to hold cleaning equipment
Lip-gloss for your computer	One side to put on the solution and with microfibre cloth to wipe it off
Disposable screen cleaner which is liquid free	Individually packed wipes
A key ring cleaner bag	That you can fold up the microfibre cloth and put inside it
USB holder	Microfibre cloth on the inside of the holder.
Mouse pad made of the microfibre cloth	A mouse pad that is complete made of microfibre cloth so that you can just pick it up and clean your screen and when it gets dirty you can put it in the washing machine.
Toy screen clearer	Teddy with microfibre cloth on its belly
Tethered device (for sticking phone to PC) with microfibre cloth	Have cloth attached to the outside of the box
A bag made of the microfibre cloth which will hold the tethered device	The bag could turn inside out and have the microfibre cloth on the inside – so you can put your fingers in the bag and clear the screen
Spray and walk away	Something that you can spray on your screen that will clean it and you don't have to wipe it off after (like some household cleaning products)
Cloth for oil resistant screens	A cloth that can clean oil resistant screens such as Apple computers
iPhone holder with microfibre attached	The base of the iPhone holder has a microfibre Cloth attached that can be used to clean the screen
iPhone holder that has an area to store the solution and micro cloth	The idea is that because the iPhone holder would always be on your desk it would increase the likelihood of using the cleaning equipment.

iPhone holder with built in cleaner	This cleaner could work like the shoe polish cleaner and will change colour to red when it is running out (like Gillette Fusion) and would be flashed with the cost per week
Refillable cartridges for the previous product	Refill that can be used when cleaning solution runs out
A bag to hold your mouse that is made of microfibre cloth	The bag can be used to clean the computer screen
A bag for holding the cables that is made of microfibre cloth	The bag can be used to clean the computer screen
Something that will hold together the cables that can double up as a cleaner	Something that will keep the cables tidy but can also work as a cleaner.
A cleaning kit	Kit for cleaning computers
Computer Bag Accessories	
Idea	**Description**
Retractable bag strap	You can make the length you want the strap at and when you are not using the strap it will just retract out of the way
Laptop starter kit	a) USB b) Notebook bag c) Mouse d) Headset e) Clear view maxi f) Card reader } Identified as the top selling products
Overnight laptop bag	Big enough to fit in your laptop and whatever you require to stay overnight, so you only have one bag on plane
Overnight laptop bag	That has an extendable apartment that you can unzip to hold whatever you require to stay overnight
Clip on wheels for laptop bag	So you can roll it behind you at airports etc
Clip on straps to carry laptop on back	So that when you can't carry the laptop over your shoulder you can clip on the straps and carry it on your back, leaving your hands free
A bag designed to help you organise your stuff	A bag with loads of different compartment to organise your belongings effortlessly
Watching Video Online	
Idea	**Description**
Wireless head set	Using bluetooth so that you have no wires in your way
Wireless head set	For one ear so that you can hear what is going on around you with the other ear
Security strap for your laptop	A strap that connects either side of your laptop so it doesn't fall off your lap
iPhone kit	Containing: • 2 USB connections • 1 Car charger
Glasses that work as a reverse periscope	The glass allow you to see things lower instead of higher like normal periscope so that you put the laptop on the ground and watch the video, allowing you to sit more comfortably
Screen protector to fit iPhone	Something that would stop the screen of the iPhone getting scratched

Portable Ergonomic Solutions for Using Ones Laptop while Travelling	
Idea	**Description**
Change the name of the Cool Channel Platform	Something more descriptive, so that it's obvious what the product is
Have document holder on the other side of the Cool Channel Platform	Have a slip instead of the current string
A holder for the laptop	Something that would attach to your chair that would hold your laptop
Telescopic arm for holding the laptop	Similar to the previous idea but that contracts and expands like a telescopic

As discussed in the methodology, progressing these ideas through Allsop Europe's new product development process incorporated a number of steps. That is, internally filtering the ideas generated during the lead user interaction and progressing the ideas through the process. Each step will be discussed in detail.

*Internally Filtering the Ideas Generated During the Lead Users Interaction***:** The Sales and Marketing Manager and his team utilised three categorises to filter the ideas generated at the lead user interaction. As illustrated in Table 6-4, these were product ideas, product adoptions and rejected ideas. Each category will now be discussed in detail

Table 6-4 Results of Filtering the Ideas Generated at the Lead User Brainstorming Session

Portable Computer Screen Cleaning Solutions			
Idea	**New Product Ideas**	**Product Improvements**	**Rejected Ideas**
Clearview Maxi for cars windscreens		✓	
Dental floss for computer keyboard			✓
Mouse pad with microfibres on one side			✓
Cleaner that works like the shoe polish cleaners			✓
Refillable cartridges for the previous product			✓
Peel off screens			✓
A pen/pencil holder with built in section to hold cleaning equipment	✓		
A cable manager with cleaners attached			✓

Lip-gloss for your computer	✓		
Disposable screen cleaner which is liquid free			✓
A key ring cleaner bag	✓		
USB holder			✓
Mouse Pad made of the microfibre cloth		✓	
Toy Screen clearer			✓
Tethered device (for sticking phone to PC) with microfibre cloth			✓
A bag made of the microfibre cloth which will hold the tethered device			✓
Spray and walk away			✓
Cloth for oil resistant screens			
iPhone holder with microfibre attached			✓
iPhone holder that has an area to store the solution and micro cloth			✓
iPhone holder with built in cleaner			✓
Refillable cartridges for the previous product			✓
A bag to hold your travel mouse that is made of microfibre cloth			✓
A bag for holding the cables that is made of microfibre cloth			✓
Something that will hold together the cables that can double up as a cleaner			✓
Cleaning kit	✓		

Computer Bag Accessories			
Idea	**New Product Ideas**	**Product Improvements**	**Rejected Ideas**
Retractable bag strap			✓
Pro laptop starter kit		✓	
Overnight laptop bag			✓
Overnight laptop bag			✓
Clip on wheels for laptop bag			✓
Clip on straps to carry laptop on back			✓
A bag designed to help you organise your stuff			✓

Watching Video Online			
Idea	**New Product Ideas**	**Product Improvements**	**Rejected Ideas**
Wireless head set			✓
Wireless head set			✓
Security strap for your laptop			✓
iPhone kit			✓

Glasses that work as a Reverse periscope			✓
Screen protector to fit iPhone			✓
Portable Ergonomic Solution for Using Ones Laptop while Travelling			
Idea	**New Product Ideas**	**Product Improvements**	**Rejected Ideas**
Change the name of the Cool Channel Platform			✓
Have document holder on the other side of the Cool Channel Platform		✓	
A holder for the laptop			✓
Telescopic arm for holding the laptop			✓

After much consideration and deliberation four of the ideas were deemed new products and entered Allsop Europe's new product development process, as illustrated in Table 6-4. Another four ideas were deemed product improvements, which consisted of improvements to existing products, improvements to the sale of existing products through targeting them differently and changes on packaging format or information on some existing products. As improvements were deemed *"marketing innovation as opposed to new product development"*, they were to be followed up by the Sales and Marketing Manager and his team. Finally, as demonstrated in Table 6-4, 33 ideas were rejected for various reasons such as; Allsop Europe had previously evaluated the idea in their new product development efforts, practicality or financial reasons. Taking into consideration the quantity of ideas generated at the brainstorming session, which were rejected, the Sales and Marketing Manager felt that the Irish Lead User is:

> *Pragmatic enough to know that we will come out with lots of ideas but not all of them are going to be practical for a range of different reasons. But I think they know that we do listen.*

Progressing the Idea's through the Process: As the eight successful ideas began to evolve through the Allsop Europe's new product development process, so did the importance of a champion. Indeed, the Sales and Marketing Manager role as project champion, now incorporated numerous responsibilities. Firstly the Sales and Marketing Manager had to act as an activist to overcome dilemmas, obstacles and

apathy in the progress of the eight product ideas (Souder and Chakrabarti, 1978; Johne and Storey, 1998). For example, the Sales and Marketing Manager had to try resolve circumstances affecting the rate that the product concepts progressing through Allsop Europe's new product development process, such as, the current economic climate, time constraints, in addition to the fact that much of their new product development efforts are currently aimed at the Clingo range. In fact, the Sales and Marketing Manager engaged in numerous efforts to try and rectify the foregoing problem. The following comment for the Sales and Marketing Manager describes some of his efforts:

> *I have sent out an email to each person in the group…when they click on the link it opens up an excel sheet, which they literally fill in. The process to complete this literally takes 15 minutes, but it is not done. In addition, I have set a reminder to come up each week on outlook for everybody on the project management team, to say please check your screening. So no one forgets it. The fact that it is not done is an internal prioritisation thing.*

> *We decided to widen the input on first stage screening process to include the full sales team. This will allow eight people to input at this stage. As long as six out of eight people participate in the first stage screening it will be valid. The reason behind this is twofold:*
> *1) The sales team is client facing and very aware of what is trending within the market.*
> *2) It will allow projects to progress more freely as our previous system was a bit rigid when it came to getting everybody's input and one or two failing to give the input was delaying the whole thing.*

Coupled with these operational activities, the Sales and Marketing Manager continued to coordinate the "*relationship management aspects of dealing with customers*". To achieve this, the Sales and Marketing Manager establishes effective communication patterns between Allsop Europe and the Irish Lead Users, with emails and telephone calls being used to continually update the Irish Lead Users on the status of the ideas generated at the lead user brainstorming session. This also created an opportunity for the Irish Lead Users to continue to give input on the product ideas as they progress through the early stages of Allsop Europe's new product development process. The Sales and Marketing Manager also had to constantly review the relationship between Allsop Europe and the Irish Lead Users throughout the collaboration. The following comment from the Sales and Marketing Manager is an audit of their relationship during the dilemma with ideas progressing slowly through their new product development process:

If they had rang us and said "what progress have you made with regards to what we have discussed in the last few weeks?". We probably made no progress but I will qualify by saying I spent two of those weeks on holidays but in so saying it would only take 15 minutes to progress it anyway. Something needs to be done as they can't feel like this information has gone down a black hole.

6.5.4 Analysis Data in Respect to the General Market

The final stage of the process was to analysis the data generated at the lead user brainstorming session of end users. A step Allsop Europe were very enthusiastic about, as they felt this involvement would complete the lead user *"loop",* guaranteeing that the ideas generated at the lead user intervention were relevant to their target market. The following comment from the Operations Manager is indicative of this:

At the minute our feedback is from the distributors, people in marketing themselves...that's kind of...an open ended loop, it doesn't take in the consumer and that's a problem that should be addressed.

Similar to identifying lead users, in order to ascertain who their end users were Allsop Europe first determined the criteria that will allow for their correct identification. Allsop Europe felt these end users should be aged 30 years or under, who use Information Communication Technology devices on a regular basis. Furthermore, due to reductions in expenditure, Allsop Europe was keen to test that the concepts generated at the brainstorming session would be conducted locally. The following comment from the Sales and Marketing Manager is indicative of this:

Getting input even on stuff within a Waterford environment which, given the current economic reality...it's a very cost effective way for use to get some consumer input for a demographic profile that is 30 years or under.

Hereafter, eight individuals who meet the forgoing criterias, were invited to a focus group centred on the ideas generated at the lead user brainstorming session. The end users ability to provide impartial and objective input into Allsop Europe's new product development process was evident throughout the session. Indeed, participants openly provided Allsop Europe with their input on numerous concepts features such as, design, colour, function and likes/dislikes, in addition to indicating a price point. Based on this input the general consensus among participants from Allsop Europe was that the end user focus group was advantageous. Indeed the Regional Sales Manager (UK and Ireland), described the exercise as "*hugely*

beneficial" as the end users input ensured that the product concepts were in line with customer needs.

6.6 Intervention Outcomes

Allsop Europe gained numerous benefits for the involvement of the Irish Lead Users at the early stages of their new product development process. As illustrated in Table 6-5 two product concepts have successfully progressed through their new product development process, coupled with numerous products improvements. It is interesting to note that one of the product improvements, that is the "laptop starter kit" successful evolved and has been added to Allsop Europe's product range. The Sales and Marketing Manager describes how Allsop Europe offers the product:

> *We have gone to one of our main vendors and gotten a catalogue listing all potential inclusions in a kit like this that they can source. This catalogue has been distributed to all team members so it can be a "constant offer" if required. This is a change in our format of previous product development as its allowing the sales team to discuss with customers a 'me too' product that is not 'officially available'.*

The format that they offer this product to their distributors is a new, cost effective and innovative method for Allsop Europe. Indeed, because the kit is offered to distributors based on a price point and a longer lead time, Allsop Europe does not have the cost associated with having a physical product in Allsop Europe's warehouse.

In addition to the generation of new products and product improvements, Allsop felt that the exercise offered them confirmation that they were '*barking up the right tree'* when it came to generating new ideas as many of the ideas generated at the lead user brainstorming session were currently or had previously been looked at by Allsop Europe. For instance, the name of the Cool Channel Platform had just recently been changed from Cool Channel. The foregoing is evident from the Sales and Marketing Manager evaluation of the process:

> *A very worthwhile exercise, as we ended up focused on not only brand new ideas but ways of presenting existing product concepts to maximise their revenue potential. We hope to undertake similar exercises with more customers.*

Table 6-5 Product Concepts Generated at the Irish Lead User Brainstorming Session Progressing Through

Allsop Europe New Product Development Process			
Assigned Product Champion			
Idea		**Product Champion**	
Roll on cleaning solution		The Sales and Marketing Manager	
Key ring cloth		The Sales and Marketing Manager	
Cleaning kit: screen cleaner, microfibre cloth, laser lens cleaner, scratch repair kit and an air duster		The C.E.O.	
Pen holder with screen and surface wipes		The Operations Manager	
Product Formulation			
Idea	**Status**	**Expected Completion Date**	**Completion Date**
Roll on cleaning solution	Go	16th June 2010	16th June 2010
Key ring cloth	Go	16th June 2010	16th June 2010
Pen holder with screen and surface wipes	Go	9th June 2010	3rd October 2010
Cleaning kit	Go	9th June 2010	21st July 2010
First Stage Screening			
Idea	**Status**	**Expected Completion Date**	**Completion Date**
Roll on cleaning solution	No Go	16th August 2010	-
Key ring cloth	Go	16th August 2010	18th August 2010
Cleaning kit	No Go	16th June 2010	-
Pen holder with screen and surface wipes	Go	10th October 2010	28th January 2011
Second Stage Screening			
Idea	**Status**	**Expected Completion Date**	**Completion Date**
Key ring cloth	Complete	29th October 2010	24th November 2010
Pen holder with screen and surface wipes	In progress	20th April 2011	-
Product Improvement via Sales and Marketing Meetings			
Idea		**Status**	
Document holder on the other side of the Cool Channel Platform		Product adaptation	
Clearview Maxi for cars windscreens		Product adaptation	
Mouse pad made of the microfibre cloth		Product adaptation	
Laptop starter kit		Live product	

Attendees at the lead user brainstorming session were quick to highlight other advantages of the collaboration with the Irish Lead User, such as how their presence was capable of reducing the *"myopic nature*" of Allsop Europe's idea generation

process, hence enhancing the diverse thinking within their cross-functional brainstorming group. In fact, both the Sales and Marketing Manager and the Regional Sales Manager (Western Europe/Chair of the Brainstorming session) commented on the processes ability to *'oxygenate the idea generation stage'* of their new product development process. Additionally, Allsop Europe expected that the collaboration between them and the Irish Lead User would have had a positive impact on their relationship. In particular, the relationship between the Irish Lead User and the Regional Sales Manager (UK and Ireland) who is the Irish Lead Users main point of contact in the case company. Allsop Europe believes that such collaborations have the ability to *"hugely"* strengthen relationships with potential lead users. Furthermore, Allsop Europe was certain that their new product development efforts were now more in line with their consumers needs.

Whilst Allsop Europe were undoubtedly happy with the foregoing advantages, they were however aware that the collaboration did not generate '*a silver bullet'.* Nevertheless, the lack of the aforesaid did not prevent Allsop Europe discussing ways of collaborating with lead users in the future. As evident in the following statement from the Sales and Marketing Manager:

> *We have another two Irish based distribution partners, which I hope we will be able to do the exercise with as well. Not only because we want to get the information and because we think it is an interesting way to brainstorm but also it makes sense for us, say over the next six months, to focus on Irish based distributors as it is easier for us to do it with them.*

6.6.1 Sustainability

Allsop Europe's constant struggle with their new product development process, in addition to their involvement in the current study, have been the major driving factors in their efforts to involve users in their new product development process. As the business world moves faster than the academic world, Allsop Europe had begun to actively go forth in search of user input at the early stages of the new product development process prior to the intervention stage of this research. Proactively utilising their highly efficient network of distributors to obtain consumer feedback to expose problems with current products and new concepts, and trying to identify gaps in their market for new products. The Sales and Marketing Manager and the Operations Manager respectfully describe some of these efforts:

> *The second last bullet point on the agenda is; are there any products that you see a need for that you can't get, that you think fits into the category of products that we work in...Everybody has to ask that question…of course, I mean that's a pretty basic piece of feedback to be getting and to be asking but we haven't been doing it on an ongoing basis. We're doing it now, so not every suggestion they give you is going to work, and sometimes they're trying to get you to produce something they think is going to work. Ultimately, we have to be the arbitrator of it but from an idea generation process it's a pretty good starting point because you'll find most of these people, are involved one step closer to the market than we are.*

> *We give [the Sales and Marketing Manager] drawings of ideas we have and he'll bring them around with him and get one to one feedback from the buyer, "Do you like this?" "Do you think you could sell it?" "Are you selling anything like it at the minute?" that type of stuff, but as well your being proactive, your going with ideas to a buyer…the emphases is on marketing at that point to say look this is something I can sell or no it's not.*

Additionally Allsop Europe have utilised the online survey software SurveyMonkey, where the Sales and Marketing Manager constructed a survey, examining a range of image based mouse pads, that Allsop Europe were currently updating, which he circulated to potential customers on his mailing list. As an incentive, participants were entered into a draw for a gift pack containing Allsop Europe products. Considering the foregoing, the involvement of lead users at the early stages of their new product development process was merely the next step of progression for Allsop Europe.

It was interesting to note that after coordinating the lead user method with the Irish Lead User, Allsop Europe considered the method to be more beneficial than the approach they had previously utilised as a mean of incorporating market knowledge. Whilst the Sales and Marketing Manager did describe the exercises as comparable, he highlights the benefits derived from the depth of the interaction between Allsop Europe and the Irish Lead User at the idea generation session as evident from the following comment:

> *What we did with him was a similar idea but just expanded to almost a whole morning, so the amount of information from it was just much more significant*. (The Sales and Marketing Manager)

As the foregoing comment suggests Allsop Europe were satisfied with the outcomes derived from the collaboration. This satisfaction was emphasised when prior to analysing the ideas derived from the Irish Lead Users activities in respects to the general market, Allsop Europe had proactively began implementing the lead user

method for a second time, based on the trend identified by the C.E.O. at the Consumer Electronics Show in Las Vegas. That is, "*3D television is the big thing that's coming down the tubes".* Allsop Europe invited a Swedish Lead User to the idea generation stage of the new product development process on the 14th of September 2010, an exercise that again proved to be very successful, with the generation of 65 product ideas, four of which progressed into the next stage of the new product development process. Comparable benefits were derived from both collaborations; however it is interesting to note that, on their journey back to Sweden, the Swedish Lead Users were still thinking of ways to help Allsop Europe's new product development process. In fact, based on observations that they made on people waiting in the airport, the Swedish Lead Users constructed an email to Allsop Europe, with product ideas which would make the experience of waiting in the airport a more enjoyable experience. The relevance of this is twofold: firstly, it reveals the level of trust and commitment that now exists between the parties and secondly, it demonstrates the interest that the Swedish Lead User now has in being involved in Allsop Europe's new product development process.

Finally, the Sales and Marketing manager has divisived a strategy for future collaborations with lead users. The following comment is illustrative of this strategy:

> *I think for ourselves, if we can get a number of core groups...that we know we can communicate with, we know they are, when I say geographically accessible I'm saying they are within an easy flight of Ireland, you know like one direct flight, that financially makes sense for us to work together. That we can at least on a bi-annual basis have all of their people on site with us...I think in that environment it can work but with some of our other customers the principal would work but the reality is they are too distant from us to try and form that kind of relationship with them...The further they are away, the less often I see them and so when I see them...we end up having to cover the nuts and bolts of contractual stuff and information on products and that, we are always going to have that constraint distance wise.*

It is interesting to note that this involvement is not limited to the involvement of lead user in this process; alternatively they regularly involved members of their highly efficient network of distributors, obtaining feedback during consumer visit (both on and off site), e-mails and telephone calls. Furthermore, the Sales and Marketing Manager does not envisage this strategy changing the current face-to-face format of brainstorming to another method, such as teleconferencing. The following comment provides reasoning for this:

If the broadband connection was better in Ireland we might...we do that for internal meetings and it works well in that environment but when we try to do customer interactions and customer presentations, generally speaking communication is difficult…we have tried to do it a few times, showing products and that, but it doesn't work at the moment. I think that technology will improve to the point that we can do it so it is not something that we will rule out.

Based on the fact that Allsop Europe repeated the process of their own accord and have created a strategy for future lead user involvement is indicative that the process has become part of Allsop Europe new product development routines and that they will continue to involve users in the future.

6.7 Summary

This chapter presented the findings, resulting from the in-depth case study, which examined the interactions between a manufacturer and their users during the early stages of their new product development process. The adopted research approach afforded the researcher a much greater insight into lead user involvement in the early stages of the new product development process and allowed for the identification of aspects of lead user involvement that may have otherwise gone unnoticed. The findings clearly demonstrate a number of essential steps undertaken by Allsop Europe in involving the Irish Lead Users in the early stages of their new product development process.

Table 6.7 How Allsop Europe Involved the Irish Lead Users in the Early Stages of New Product Development Process

Enablers
A Shared Vision Towards External Focus
Cross-functional Collaboration
Compatibility of Culture
Past Experience of Collaborations
Operation Management
Identify Trends
Identify Lead Users
Coordinate Lead User Activates
Analysis Data in Respect to the General Market
Relationship Management
Effective Communication
Inter-organisation Trust
Inter-personal Commitment
Auditing the Relationship

Table 6.7 summarises these steps, however based on this evaluation it is evident that the success of this process could not have been achieved without the presence of a project champion. These results will provide a platform for the subsequent chapter.

Chapter Seven

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Discussion of Results

7 Discussion

7.2 Introduction

The purpose of this chapter is to discuss any resemblance or variances between the primary and secondary research in implementing lead user involvement in the early stages of the new product development process. To facilitate a logical and straight forward approach, this chapter follows the interaction evolution illustrated in Table 7-1. That is, commencing with a discussion of the initial state of the case site, thereafter it will follow the implementation of the lead user process in pre-development activities at Allsop Europe. Finally, the chapter concludes with a discussion of the evolved state of the case site.

Table 7-1 Interaction Evolution

Initial State	Evolved State
New Product Development	***New Product Development***
➢ Lack of demographics in the brainstorming team ➢ Elongated development time ➢ Frequently miss-fitting buyer's needs to an unsatisfactory product ➢ Occasionally experiencing product failure ➢ Heavily dependent on Allsop Inc.'s new product development process ➢ Little interaction with external sources – any such interaction is narrow and unstructured	➢ Effective process for incorporating external input their new product development efforts ➢ High intensity of interaction ➢ Diverse thinking within their cross-functional brainstorming group ➢ New product development efforts more in line with their consumers needs ➢ New innovate way of offering products to distributors
Relationship	***Relationship***
➢ Highly efficient network of distributors	➢ Stronger relationships with distributors ➢ Higher levels of trust, communication and commitment between Allsop Europe and their distributors
The project	***The project***
➢ Some ambiguity ➢ Eagerness to achieve the benefits of lead user involvement	➢ Recognise the need for user involvement in their new product development process ➢ Clear understanding of the benefits derived from the process ➢ Conformation of the benefits of user involvement

Adapted from: Doz (1996)

7.3 Initial State of Allsop Europe

It is clear from the diagnostic phase of this research that despite Allsop Europe's new product development efforts following a clearly defined process with specific stages, procedures and stage outcomes, the process exhibited serious difficulty. For instance, their idea generation efforts were "*myopic"*, which Allsop Europe felt was rooted in the lack of demographics in their cross-functional brainstorming team. Additionally, their development activities took longer than expected and they had frequently miss-fitted buyer's needs to unsatisfactory products and occasionally they even experienced product failure. These problems are similar to the list commonly cited in literature as the results of having no external input in the new product development process (Biemans, 1992; Campbell and Cooper, 1999; Cooper, 1999; Cooper and Kleinschmidt, 2000). Hence as expected, utilising Alam's (2002), continuum for measuring the depth of user involvement, it can be established, that Allsop Europe acquired a position of *passive acquisition of input*. Where input from users such as distributors and customers, had occasionally led Allsop Europe to develop innovative new products such as, the mouse pad. However, it is imperative to note that these collaborations resulted from the users approaching Allsop Europe, rather than Allsop Europe proactively trying to involve users in their new product development efforts. The following comment from the Sales and Marketing Manager succinctly demonstrates this:

> *But it was them [users] coming to us proactively...in the course of a meeting saying...can you produce a product like this for me.*

Nevertheless, these ventures provided Allsop Europe with an insight into the benefits of incorporating external input into their new product development process. Users and in particular, lead users are an important source of innovation for Irish manufacturers, such as Allsop Europe (Forfás, 2004c). These collaborations must be encouraged and facilitated, particularly in pre-development stages, that is, those stages prior to any actual development of a product, as developing a product that delivers superior benefits presupposes an understanding of user needs and wants (Biemans, 1992; Cooper and Kleinschmidt, 2000; Kim and Wilemon, 2002; Lynch and O'Toole, 2004; Lüthje and Herstatt, 2004). A conceptualisation that Allsop Europe sincerely agreed with, yet did not practice as they felt that such an input was

unattainable. The Sales and Marketing Manager provides explanation for this passive role:

> *It comes probably... from having been the market leader for so long in the product categories which we were in...Generally speaking we brought products to the market, and on the basis of us bringing the products to the market, the market took the product because we would have been the market leader.*
>
> *We're in a situation where we obviously manufacture, then we sell to a distributor, who sells to a retailer, who sells to the customer, so we're those steps away from the end consumer ourselves, and we're those steps away from buyer interaction.*

Despite Allsop Europe's clearly seeing the value for user involvement, they expressed some hesitation towards the concept. This was similar to the warning proposed by Lüthje and Herstatt (2004), that is, to consider that users may not necessary be willing to reveal their innovations to manufacturers and even if users are prepared to share information with them, they may not necessarily see the direct benefit of being involved in the process. The idea of a user willingly disclosing information on potential product concepts, instead of bringing the idea to the market themselves stunned the management at Allsop Europe. They also had some concerns about how the process of involving users would be managed[10]. However, despite these uncertainties, it is important to note that Allsop Europe was enthusiastic about the benefits that the involvement might bring to their new product development process. Hence, participants entered the process with open-minds. Comments such as the following from the Sales and Marketing Manager respectively illustrate their eagerness for the concept:

> *We have always been on the front foot bringing products in, but now our market is more competitive and our innovation hasn't been as good, so the skill set required by us internally to extract that information from the customers is different to the skill set that was required when we just had to present and the product would literally sell itself...I think we have a bit of a knowledge gap there that we are trying to improve so I hope you can help me with that.*

7.4 Management User Involvement in the Early Stages of the New Product Development Process

There is widespread agreement in literature that user involvement is heavily dependent on how the involvement process is managed (Ring and Van de Ven, 1994; Biemans, 1995; Spekman *et al.,* 1998; Johnsen and Ford, 2000; Magnusson *et al.,*

[10] These concerns will be discussed in detail in the following section

2003). Similarly the need for a defined process is evident in the primary research, with management at Allsop Europe anxious that the involvement of users would follow a clear process. The following comment from the Sales and Marketing Manager is indicative of this:

> *It's easy for us to say "do you have any new product ideas?"..."have you any observations on our products that you are selling?"...but it's going to have to be a bit more scientific and a bit more structural than that.*

After much deliberation the process utilised by Allsop Europe to manage the operational aspect of involving lead users at the early stages of their new product development process was comparable to the lead user method illustrated in Figure 3-1. However, in comparison to the lead user method, Allsop Europe was eager that their process would also incorporate the "*relationship management aspects of dealing with customers*". As evident in the following comment from the Operations Manager:

> *You would want to have a very good relationship with the lead user because there can be all kinds of different interests that users, in terms of the distributors or even the end customers at the shop could have, they might have more of a vested interest in getting a product off or it might compete with a product they already have.*

Allsop Europe's requirement to manage the relational aspect of dealing with users is comparable with numerous authors who feel that there is a need for the process of involving users should incorporate relational variables and adapt a more interactive approach to the process (Biemans, 1992; Van de Ven, 1992; Pettigrew, 1992; Dabholkar *et al.*, 1994; Van de Ven, 1994; Doz, 1996; Holmlund and Strandvik, 1999; Holmlund, 2004). Whilst the occurrence of Allsop Europe managing the operational and relational aspects of lead user involvement was simultaneous, in order to discuss these findings in a more accessible manner it was deemed appropriate that each managerial aspect will be discussed independently. Commencing with Allsop Europe four-step process for managing the operational aspect of involving lead users;

7.4.1 Managing the Operational aspect of Lead User Involvement

Step 1 Identifying Trends: Comparable to Lilien *et al.* (2002) who argue that before identifying a target market, manufacturers should establish a project team, Allsop

Europe's first discussion upon commencing the process was to utilise their cross-functional new product development idea generation team during the collaboration. Thereafter, similar to von Hippel (1986) Allsop Europe commenced the process of identifying trends affecting their market that appears to be associated with the provision of promising new product concepts. To achieve this, three methods capable of identifying trends were identified by management at Allsop Europe. That is *"Industry interaction, show participation and general media"* (The Sales and Marketing Manager). Equipped with the in-depth knowledge of trends and figures gained through these three mediums Allsop Europe was able to identify four trends. These trends were essential for the subsequent identification of the lead users.

Step 2 Identify Lead Users: In order to ascertain who their lead users were, Allsop Europe first determined criteria that will allow for their correct identification. These included, the characteristic ascribed to lead users, linguistics skills, economic feasibility and finally a strong pre-existing relationship. Like Gruner and Homburg (2000), Allsop Europe believed that the characteristics of the lead users would have an impact on the success of the collaboration. The quest for identifying lead users involved the 'screening approach' in which Allsop Europe screened their database, for potential lead users that fulfilled the foregone required characteristics. This approach was similar to that used by Lüthje and Herstatt (2004). Whilst literature portrays this task as varied and complicated with numerous complexities (von Hippel, 1986; Lilien *et al.*, 2002; Lüthje and Hersttat, 2004), it was apparent from the offset that management at Allsop Europe could instantly identify users, who fulfilled their criteria. The ease of this process is attributable to the fact that Allsop Europe is a small to medium enterprise and as illustrated in Table 7-1 possesses strong relationships with their distributors.

It is interesting to note that prior to contacting the lead users, it was clear that since the study had commenced Allsop Europe's status on Alam's (2002) continuum for measuring the depth of user involvement had begun to shift. Utilising Alam's (2002) continuum once more, it was clear that Allsop Europe had moved down the continuum towards the position of *Information and feedback on specific issues* where Allsop Europe was actively going forth in search of user input at different

stages of the new product development process. Proactively utilising their highly efficient network of distributors to obtain consumer feedback, expose problems with current products and concepts, and identifying gaps in their market for new products. Considering this shift in involvement of external input, involving the Irish Lead Users was merely the next step for natural progression for Allsop Europe.

Step 3 Coordinate Lead Users Activities: Similar to Lilien *et al.* (2002), data was acquired from the Irish Lead Users by centring activities on a lead user brainstorming session, where the Irish Lead Users was invited to brainstorm with company personnel. This method proved to be very effective with the generation of 42 product ideas. Similar to the existing literature, Allsop Europe highlighted the significance of intense interaction during this stage. The following comments from the Sales and Marketing Manager are indicative of the foregoing:

> *Previously...at a customer meeting as a point of an agenda said to the customers "have you any area of product development that you want us to focus on?" What we did with [the Irish Lead Users] was that idea but just expanded to almost a whole morning, so the amount of information fold out of that was just much more significant.*

Furthermore similar to von Hippel (1986) data derived from the Irish Lead User was incorporated into Allsop Europe's new product development process utilising standard marketing research methods.

Step 4 Analysis Data in Respect to the General Market: Comparable with von Hippel's (1986) lead user method, Allsop Europe felt that the current level of interaction with users was not complete. The following comment from the Operations Manager is indicative of this:

> *At the minute our feedback is from the distributors agents, people in marketing themselves...that's kind of...an open ended loop, it doesn't take in the consumer and that's a problem that should be addressed.*

To complete this *"loop"* Allsop Europe desired to test the product concepts derived from the Irish Lead Users involvement on the general markets. Comparable to the extant literature, Allsop Europe felt that this feedback would provide them with an accurate assessment of the general market needs, as the needs of the general market might not necessarily correspond with that predicted by lead users or by their

internal brainstorming team (von Hippel, 1986). Similar to von Hippel (1986) and Olson and Bakke (2001), this was achieved through conducting a focus group, with a sample of end users identified as part of Allsop Europe's target market. These users were invited to test the ideas generated at the Irish Lead User brainstorming session. The end users ability to provide impartial and objective input into Allsop Europe's new product development process was evident throughout the session. Consistent with Olson and Bakke (2001), participants openly provided Allsop Europe with input on the concepts features such as, design, colour, function and likes/dislikes, in addition to indicating a price point.

7.4.2 Managing the Relationship with the Lead User

Coupled with the four-steps utilised to manage the operation aspect of the lead user involvement at the early stages of their new product development process, Allsop Europe was constantly aware of the *"relationship management"* aspect of the collaboration. Indeed, consistent with literature, Allsop Europe managed the relationship, by managing relational variables (Ford, 1980; Biemans, 1992; Dwyer *et al.*, 1987; Morgan and Hunt, 1994; Comer and Zirger, 1997; Sivadas and Dwyer, 2000; Donaldson and O'Toole, 2007).

Allsop Europe considered communication and the associated information exchange to be key drivers in the evolution of a solid relationship between them and the Irish Lead Users (Mohr and Nevin, 1990; Biemans, 1992; Bleeke and Ernst, 1993; Denizea, 2007; O'Toole and Donaldson, 2007). They managed communication through insuring that there was regular, opened and honest communication of wants, issues, inputs and priorities between of all participants. Furthermore, effective communication patterns were established from the offset of collaboration. For instance, when Allsop Europe invited the Irish Lead Users to participate in their new product development process, they clearly communicated the goals and objectives of the partnership. This reduced any uncertainty and ambiguity that the Irish Lead Users may possess towards the collaboration. Management of communication was essential to Allsop Europe during the brainstorming session, as it enhanced the

cooperation, trust and commitment between participants (Anderson and Narus, 1990).

The results of their efforts to manage communication were unmistakable in the actions of the Irish Lead Users. This was particularly evident when the Irish Lead User fetched a folder from their car, containing a list of the best selling items at their main Irish retail consumers and suggested that the kit could incorporate some of these items, hence, increasing Allsop Europes chances of generating sales. This act of sharing the confidential information is a clear indication of the level of trust and commitment between the parties, reinforcing that effective communication can result in both trust and commitment. Furthermore, the fact that the Irish Lead Users had to get this folder from the car, rather than having brought the folder to the brainstorming session might imply that the levels of trust and commitment increased during the collaboration.

As the foregoing suggests, an essential managerial aspect for Allsop Europe was to build inter-organisation trust and in line with literature, this was achieved through insuring that participants were constant, competent, honest, fair, responsible, helpful and kind throughout the interaction (Morgan and Hunt, 1994; Buttle, 1996). These actions were effortless for Allsop Europe and the Irish Lead Users, due to the fact that trust already existed in their pre-existing relationship. This was evident in the relaxed and friendly environment that immediately emerged at the brainstorming session. As previously stated, the result of trust being present was evident in the Irish Lead Users showing the confidential list of best selling items. However, Allsop Europe's keenness to obtain this input and the fact they incorporated the Irish Lead Users information in the design of the kit, confirmed that they also trusted and valued the Irish Lead Users.

The concept of commitment received extensive investigation in the social exchange theory literature, with its contribution being described as central (Blau, 1964). Literature revealed that there is a strong connection between inter-organisational commitment and the development of inter-personal relationships (Spekman and Sawhney, 1990; Biemans, 1992; Morgan and Hunt, 1994). The level of commitment

between Allsop Europe and the Irish Lead Users was evident throughout the collaboration. For instance, during the brainstorming session attendees consistently referred to the ideas generated collectively. The repetitive use of the word "*we"* was commonplace throughout the discussion, such as "*the idea we came up with"* and "*we ended up"*. Indeed, participants were completely comfortable referring to their ideas in this manner, which was a clear indication that they consider the work that they did together, as a team effort, reinforcing the intense level of commitment and trust between participants.

Alternatively, the Irish Lead Users commitment to Allsop Europe and the process was evident in their enthusiasm to share their knowledge and expertise. In fact, the Irish Lead Users were the first to contribute an idea to the brainstorming session, reinforcing the statement made by Morgan and Hunt (1994: 25) that "successful alliances, like successful marriages, don't just happen; both require commitment to make them work and both can be destroyed by mistrust". It is interesting to note that the level of commitment from the Irish Lead Users was enhanced by the agreement that as a result of their participation they could acquire a product which was currently missing in their product portfolio. This occurrence of reciprocity is consistent with von Hippel's (1986) characteristics for identifying lead users.

In addition to these relational variables, Allsop Europe constantly reviewed the relationship between the Irish Lead Users and participants at Allsop Europe, which has been identified as having a positive influence on the success of the relationship (Bruce *et al.,* 1995; Hutt *et al.,* 2000; Lynch and O'Toole, 2003). As "regular auditing allows parties to assess the performance of the relationship, while also addressing issues relating to management and leadership, team building, control processes, conflict etc" (Lynch and O'Toole, 2003). The following comment from the Sales and Marketing Manager details one of the audits conducted by Allsop Europe. During the dilemma with ideas progressing slowly through their new product development process:

> *If they had rang us and said "what progress have you made with regards to what we have discussed in the last few weeks?". We probably made no progress but I will qualify by saying I spent two of those weeks on holidays but in so saying it would*

only take 15 minutes to progress it anyway. Something needs to be done as they can't feel like this information has gone down a black hole.

This audit of the relationship was a driving factor in trying to resolve the problems encountered in their new product development efforts, hence highlighting the impotence of auditing the relationship.

7.4.3 The Role of Project Champion in Managing the Process

Throughout the primary research, it was evident that if Allsop Europe efforts to involve external input into their new product development process were to stand any chance of success, the project must have a champion (Markham and Griffin, 1998). Stevens *et al.* (1999) advocated that management tend to grant such authority and responsibility to a single individual. This is comparable in the case of Allsop Europe, where they nominated the Sales and Marketing Manager as the project champion. It was evident from the findings that his role had a profound impact on the success of implementing the lead user process in the early stages of Allsop Europe's new product development process. The overarching responsibility of the Sales and Marketing Manger was to coordinate the operational and relational activities required to implement the lead user involvement process at Allsop Europe.

However, completion of the overarching task incorporated a number of roles. First, the Sales and Marketing Manager had to insure that there was an organisation wide understanding of the importance of incorporating external knowledge into their new product development effort. Without their support and enthusiasm to change their new product development routine, the process would fail. He achieved this through involving his colleagues in the process and/or keeping them informed about the outcomes of the process via meetings and e-mails. Furthermore, the Sales and Marketing Manager was also responsible for coordinating all activities and interacting with Allsop Europe and the external parties such as the Irish Lead Users and the end users, while ensuring that resources are available at the appropriate time, for example during the lead user brainstorming session and the end user focus group (Biemans, 1992; Markham and Griffin, 1998; Trott, 1998). The Sales and Marketing Manager also had to provide clear directions and guide the process in a manner

which influences the pace of their new product development process, while adhering to the strategic objectives (Scheuing and Johnson, 1989).

As observed in the literature, the Sales and Marketing Manager also had to act as an activist to overcome dilemmas, obstacles and apathy in their new product development process (Souder and Chakrabarti, 1978; Johne and Storey, 1998). For example, he had to resolve the circumstances affecting the rate that the product concepts was progressing through Allsop Europe's new product development process, that is, the current economic climate, time constraints, in addition to the fact that much of their new product development efforts are currently aimed at the Clingo range. Interestingly, in comparison to Stevens *et al.,* (1999), who stated that the project champion decides whether product ideas should proceed into the next stage of the new product development process, Allsop Europe's cross-functional team collectively make this decision.

7.5 Enablers Supporting the Process

It is essential to note that the above mentioned process did not occur in vacuum. In fact, the presence of numerous enablers were a critical part of the successful involvement of the lead users in the early stages of Allsop Europe's new product development process. These initial enablers relate to the internal and relational characteristics possessed by both the Irish Lead Users and Allsop Europe, which they brought to the early stages of the new product development process. In line with Lynch and O'Toole (2003), Allsop Europe envisioned that the absences of these enablers may have resulted in the collaboration failing.

One such internal enabler was the presence of a shared vision. Whilst literature describes the involvement of external parties such as users in the new product development process as a difficult task to achieve, they portrayed the process to be more complex when there is an absence of a shared vision of the perceived importance of such an involvement (Tidd *et al.,* 2001). Allsop Europe struggles with their new product development process had amplified the need to acquire new stimuli from outside knowledge, such as lead users. This resulted in a shared vision throughout the organisation. However, the importance of Allsop Europe having a

shared vision was evident in the Sales and Marketing Manager's constant efforts to reinforce the need and importance of the involvement. His efforts produced a level of support and commitment comparable to the prerequisite discussed by Biemans (1992) and Tidd *et al.* (2001).

In addition, literature demonstrates that the presence of cross-functional integration enhances new product development performances (Pitta *et al.*, 1996; Song *et al.*, 1998; Olson and Bakke, 2001; Hillebrand and Biemans, 2004; Parry *et al.*, 2009). One could only describe Allsop Europe's internal brainstorming team as cross-functional, with the team primarily consisting of representatives from the Sales and Marketing, Operations and Quality Control department and an Executive Personal, in addition to two alternating people from within the organisation who had been invited to sit in on the process. This cross-functional input permitted the constant mutual adjustment to the information provided by each team member, which has been described in literature as a precursor for success, as it keeps the team's efforts in tune, avoids problems of last minute changes causing havoc to the rest of the project, resulting in faster cycle times, reduces inter-functional conflict and accelerates new product development decisions (Pitta *et al.*, 1996; Parry *et al.*, 2009). What is more, it was evident that the involvement of the Irish Lead Users enhanced the effectiveness of Allsop Europe's cross-functional innovation team via reducing the longevity and familiarity between the team members. This is similar to suggestions put forward by Lüthje and Herstatt, (2004).

The importance of relational enablers such as compatible cultures during the collaboration was also evident in the primary research. In fact, one of the determining criteria utilised to identify the Irish Lead Users, was the existence of a strong pre-existing relationship between participants from Allsop Europe and the potential lead user. The Sales and Marketing Manager gives reasons for this, revealing that their past experiences with the Irish Lead User would ensure that there was a compatible culture. He continues to tell how they have:

> *A long association with the Irish Lead Users and we have a good working relationship, where they are quite frank and they have always always always been forthright to us with regard to opinions on the products we develop, on the style of*

> *our packaging…so we know that the lead user has the ability to give us that feedback.*

The degree of 'culture fit' that exists between the Allsop Europe and the Irish Lead Users was evident at the brainstorming session where the opened culture of both organisations resulted in a relaxed and friendly environment emerging, with participants instantly engaging in casual conversation with each other. This is comparable to the extant literature on inter-organisational relationships and alliances which have indicated that failure to accommodate for differing organisational cultures can result in the demise of a partnership (Cartwright and Cooper, 1993; Kanter, 1994; Morgan and Hunt, 1994; Handy, 1996; Maron and VanBremen, 1999). As the foregoing section suggests, Allsop Europe deemed the presence of past experiences of collaborating with the potential lead user as an essential element for the success of the collaboration. The Sales and Marketing Manager reveals that their past experiences with the Irish Lead Users would also influence their willingness to partake in the collaboration. As evident in the following comment from the Sales and Marketing Manager:

> *I think it would make them more enthusiastic to get involved, simply because we have always entertained their criticism and their feedback. For example, in the past we have gotten feedback on how we physically name our products. Particularly, whilst how we name our products is clever, they feel that they are somewhat obtuse...Now when we bring out new products, the products are much more direct in name. So they have made an observation that when they tell us something we do distil it, we take it on board and we make a change.*

This is in line with literature where the absence of pre-collaboration experience is frequently cited as an inhibitor of the process of collaborations (Lei and Slocum, 1992; Bruce *et al.,* 1995; Simonin, 1999; Kale *et al.,* 2002; Torrent *et al.,* 2007). Furthermore, Simonin (1997) argues that firms that have greater levels of collaborative experience may result in the emergence of collaborative know-how that helps achieve greater benefits in subsequent collaborations. A comparable belief is evident in Allsop Europe as they felt that the next time they collaborate with the Irish Lead Users the experience will be more successful. This is evident in the following comment for the Sales and Marketing Manager *"He'll be better the next time and we will be better the next time"*. In fact, he felt that for the concept of lead user involvement to work successfully in Allsop Europe, they should organise a *"number of core groups"* and have them on site on a bi-annual basis. It is interesting to note

that as a result of the pre-existing relationship between Allsop Europe and the potential lead user, the issue of handling conflict was significantly reduced, as a shared set of norms already existed (Donaldson and O'Toole, 2007: 48), resulting in any conflict among participants being viewed as part of doing business (Anderson and Narus, 1990). For instance, comments during the brainstorming session on how ideas could be altered to enhance the design were not viewed as conflictual. Rather they were seen as a means of improving the idea.

7.6 The Outcomes Resulting from the Process

A number of advantages resulted from the involvement of the Irish Lead Users at the early stages of Allsop Europe's new product development process, which participants from Allsop Europe were quick to highlight. In line with the literature, these included the generation of innovative and appealing new product concepts, such as the laptop starter kit, which incorporated both buyer's needs and wants, thus, reducing the potential risk of miss-fitting buyers needs to an unsatisfactory product concept (Voss, 1985; Cooper and Kleinschmidt, 2000; Tidd *et al.*, 2001; von Hippel and Katz, 2002). The presence of the Irish Lead Users also reduced the myopic nature of Allsop Europe's idea generation process, hence enhancing the diverse thinking within their cross-functional brainstorming group (Lilien *et al.*, 2002; Lüthje and Herstatt, 2004). In fact, both the Sales and Marketing Manager and the Regional Sales Manager (Western Europe/Chair of the Brainstorming session) commented on the processes ability to *'oxygenate the idea generation stage'* of their new product development process. Moreover, the involvement offered them confirmation that they were '*barking up the right tree'* when it came to generating new ideas, as many of the ideas generated at the lead user brainstorming session were currently or had previously been looked at in Allsop Europe's new product development process.

The collaboration also had a positive impact on Allsop Europe's relationship with the Irish Lead User. Similar to suggestions put forward by Alam (2002), Allsop Europe believed that such collaborations have the ability to *"hugely"* strengthen relationships with potential lead users. Furthermore, the process provided Allsop Europe with an innovative way to offer products to their distributors that is based on

a price point and a longer lead time. As the foregoing suggests, the involvement of lead users was capable of remedying the difficulty exhibited in Allsop Europe's new product development process as illustrated in Table 7-1. In contrast to the manufacturer's perspective, the Irish Lead Users benefited from acquiring a product which was currently missing in their product portfolio, for instance, the laptop starter kit which they can now offer to their retailers (Biemans, 1992). Additionally they gained access to exclusive information and established an innovative relationship with Allsop Europe (Biemans, 1992; Brockhoff, 2003).

However, the most noteworthy outcome from the primary research was the sustainability of the lead user process in Allsop Europe's new product development process. Similar to Olson and Bakke (2001), this research sought to investigate the extent to which the case company continued to use the lead user method since the original session. In contrast to Olson and Bakke (2001) who cited time pressures and lack of resources (including managers with experience with the method) as factors for discontinuing the lead user method, it is anticipated that Allsop Europe will continue. This judgment is based on a number of factors. For example, the fact that the business world moves faster than the academic world, Allsop Europe had begun to actively go forth in search of user input at the early stages of the new product development process prior to the intervention stage of this research. Indeed, as previously discussed, they had began to proactively utilise their highly efficient network of distributors to obtain consumer feedback to expose problems with current products and new concepts, and tried to identify gaps in their market for new products. Coupled with this, Allsop Europe had proactively begun to utilise the online survey software SurveyMonkey to get end user feedback.

However, the most notable signals that Allsop Europe will continues to involve external input in their new product development efforts was: Firstly, the fact that Allsop Europe had proactively began implementing the lead user method for a second time with a Swedish Lead User on the 14th of September 2010; Secondly, the fact that the Sales and Marketing manager formed a strategy for future collaborations with lead users at Allsop Europe, that is:

> *A number of core groups...that we know we can communicate with, we know they are…geographically accessible…That we can at least on a bi-annual basis have all of their people on site with us……I think in that environment it can work.*

Interestingly, this involvement is not limited to the involvement of lead user in this process. Alternatively it involves members of their highly efficient network of distributors, obtaining feedback during consumer visits (both on and off site), emails and telephone calls. Based on the foregoing, it is indicative that the process has become part of Allsop Europe's new product development routines and that they will continue to involve users in the future. In fact, utilising Alma (2002), continuum for measuring the depth of user involvement for the final time it can be established, that Allsop Europe at the evolved state acquired a position of *representation*.

7.7 Summary

This chapter discussed any resemblance or variances between the primary and secondary research in implementing lead user involvement in the early stages of the new product development process. The final chapter will now, having outlined and discussed these issues, reflect on the findings in terms of the significance to the overall aim of this research and more specifically, the research objectives outline in both the Introduction and Methodology Chapters.

Chapter Eight

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Conclusion

8 Conclusion

8.1 Introduction

Based on the research findings and discussion presented in the foregoing chapters, the purpose of this concluding chapter is to present the research outcomes. To achieve this, the chapter summarises the research outcomes, in terms of the overarching objective of the current research. Thereafter, key contributions of the study in relation to both theory and practice will be discussed. Finally, the chapter closes with limitations of the current study, future direction for research and a critical reflection by the author on the journey undertaken to complete this research.

8.2 The Outcomes of the Study Based on the Overarching Objective

The purpose of the current section is to reflect on the overall aim of the study. That is, to develop a managerial model that will maximise lead user involvement in the early stages of the new product development process to deliver innovative and appealing new product concepts. This model is presented in Figure 8-1. Although the model was developed ex-post from analysing reviewed literature and informed by an in-depth case study, it is useful to provide an overview of its major components. The model commences with '*Enablers'* which are necessary prerequisites for the successful involvement of lead users in the early stages of the new product development process. The research findings have shown that without the presence of these enablers the relationship may be unsound and consequently fail. These enabling factors and can be divided into '*Internal Enablers'* and '*Relational Enablers'*, which combine to influence the ways in which the manufacturer and user structure and manage their interactions. '*Internal Enablers'* consist of a number of internal organisational factors that affect the success of lead user involvement in the pre-development process. These include a '*Shared Vision towards External Focus',* such as lead user involvement in the new product development process. It is essential that this perceived importance of such an involvement exists on a organisation wide basis, as a company who does not understand nor appreciate the value and importance of lead user involvement in successful product development is unlikely

to pursue any collaborative activities with the necessary enthusiasm that is needed for success (Tidd *et al.*, 2001).

Next, the presence of '*Cross-functional Collaborations'* is important as cross-functional teams in the new product development process permit constant mutual adjustment to the information provided by each team member. Furthermore, this research has shown that the presence of a lead user can enhance the benefits gained from cross-functional teams via reducing the longevity and familiarity between the team members. Indeed, the participants from the case company commenting on its ability to *"oxygenate the idea generation stage"* of their new product development process.

The involvement of the lead user is also supported by the way the two companies interacted and exchanged resources. In essence, their cooperation is enhanced through the establishment of '*Relational Enablers'*. For instance, '*Compatibility of Culture'* between the collaborating organisations as different organisations "work on quite different assumptions about the basis of power and influence, about what motivates people, how they think and learn, how things can be changed. These assumptions result in quite different styles of management, structures, procedures and reward systems" (Handy, 1996: 5). Additionally, '*Past Experience of Collaborating'* between the organisations results in the emergence of collaborative know-how and shared norms which enhances the success of the collaboration. The benefit of both these enablers were particularly evident in the primary research, where their presence significantly reduced the issue of conflict, as a shared set of norms resulted in any conflict among participants being viewed as part of doing business (Anderson and Narus, 1990).

Furthermore, what emanated from the current study was that implementing lead user involvement is a far more complicated concept than simply following defined stages. Rather it incorporates both operational and relationship variables. Hence the '*Managerial Phase' is* divided into managing the (1) '*operational'* transactions between the manufacturer and user and (2) the '*relationship'* dynamics between the actors. Whilst the term 'phase' may denote hierarchical progression, the research

findings have shown that these managerial aspects are not undertaken separately, instead they tend to overlap throughout the involvement, with management at the case company constantly aware of the relationship management aspect of all their interactions with the lead users. Each management area consists of a set of specific activities, linked together by the project champion and will now be discussed in turn.

The '*Operational Management'* of involving lead users consisted of four major phases. The first phase is to '*Identify Trends'*, where manufacturers will identify a team of cross-functional and experienced people, one of which will serve as a project champion. Hereafter, the project team will identify methods of identifying trends affecting the market that appears to be associated with the provision of promising new product concepts and finally to identify such trends. As illustrated in Figure 8-1, the next stage in the process is to '*Identify Lead Users'*. As evident in the findings, in order to identify who the lead users are, the project team must determine the indicators that will allow for their correct identification. These indicators centre around von Hippel's lead user characteristics: 1. Lead users face needs that will be general in a marketplace, but they face them months or years before the bulk of that marketplace encounters them; 2. Lead users are positioned to benefit significantly by obtaining a solution to those needs (von Hippel, 1986: 776). Similar to the research findings, the quest for identifying these lead users can involve a 'screening approach' in which the project team conducts surveys on existing product user databases (Lüthje and Herstatt, 2004). Alternatively, the project team may have engaged in a 'pyramid' networking exercise to identify and learned from users at the leading edge of the important trends selected for the study (Lilien *et al.*, 2002).

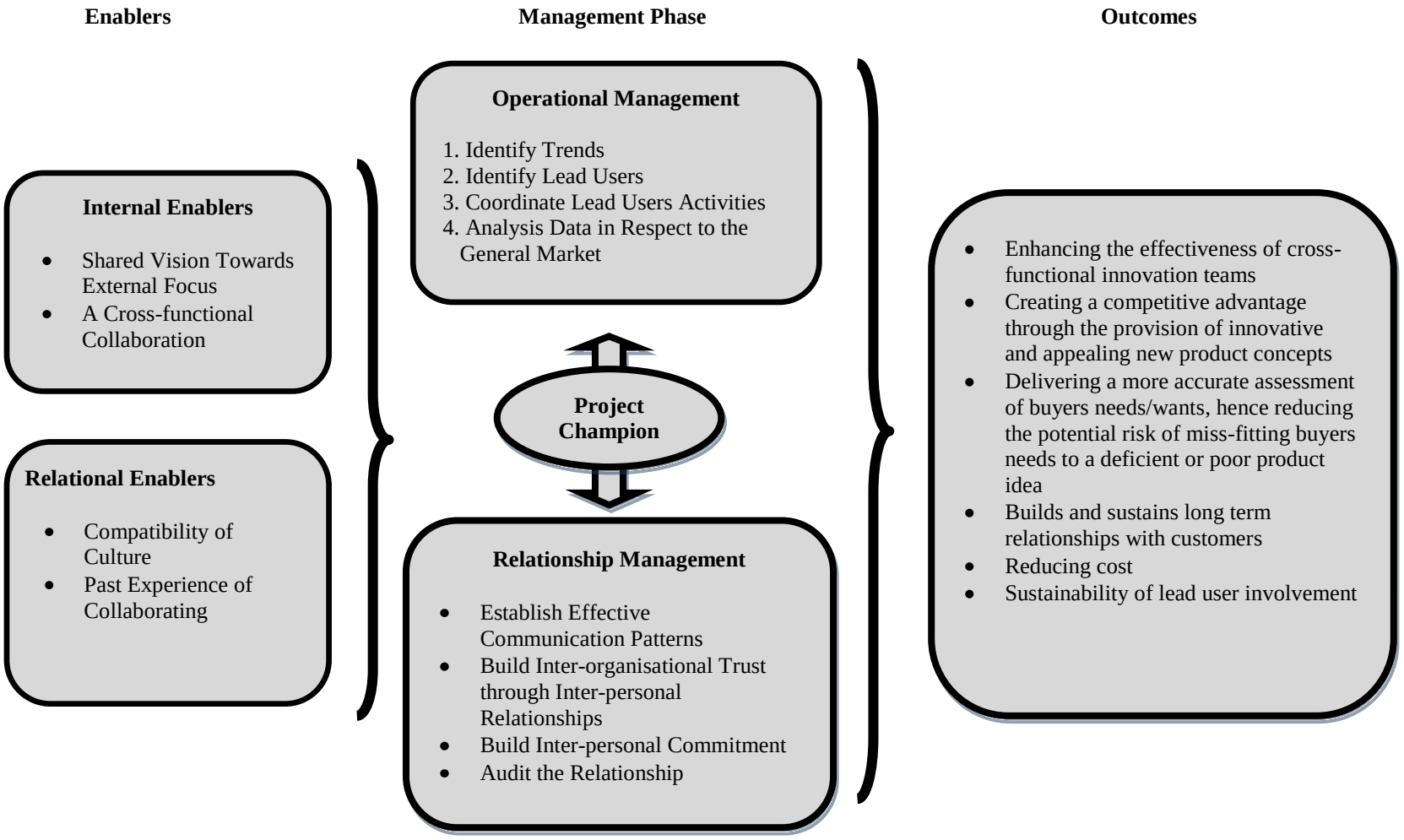
Once the lead user has been identified, the manufacturer can begin to '*Coordinate Lead Users Activities'.* As identified in the primary research, this can be achieved through a lead user workshop, in which lead users are invited to work with company personnel to brainstorm around the previously identified trends. Ideas generated at the workshop are then incorporated into market research analysis using standard market research methods. The final stage in the operational phase is to '*Analysis data in Respect to the General Market'* as the needs of tomorrows market might not necessarily correspond with that predicted by lead users (von Hippel, 1986). As per

the findings, this can be conducted by creating a prototype of the novel product concept and ask a sample of the general market users to evaluate the concepts features such as, design, colour, function and likes/dislikes, in addition to indicating a price point.

Coupled with these four-steps utilised to manage the operation aspect of the lead user involvement at the early stages of their new product development process, manufacturers must be constantly aware of the *'Relationship Management'* aspect of the collaboration. This research has shown that central to a successful cooperative relationship between the manufacturer and user is '*Establishing Effective Communication Patterns'*. Indeed, in order to ensure effective and efficient management of activities, responsibilities and people, between the manufacturer and user, an atmosphere conducive to frequent and timely communication must be created and maintained. Furthermore, care must be taken to '*Build Inter-Organisational Trust through Interpersonal Relationships',* which aroused from frequent communication among partners and the belief that each partner is reliable and possesses high integrity (Morgan and Hunt, 1994; Hutt *et al.,* 2000). Manufacturers must also '*Build Inter-personal Commitment'* as both primary and secondary research has revealed that there is a strong connection between inter-organisational commitment and the development of inter-personal relationships (Biemans, 1992). Participants can signal their commitment, through giving exclusive rights to the partner or making relationship-specific investment. Finally, '*Auditing the Relationship'* allows parties to assess the performance of the relationship and as evident in the findings also permits manufacturers to address any issues which may be encountered during the process.

Fundamental to the '*Management Phase',* is the presence of an individual who will coordinate all activities and interact with both the internal and external participants such as a '*Project Champion'*. It was evident from the findings, that the project champion's role had a profound impact on the success of implementing the lead user process in the early stages of Allsop Europe's new product development process.

Figure 8-1 A Redefined Integrated Model for Involving Leads Users in the Early Stages of New Product Development



This individual's characteristics are of grave importance, they require a broad skill set, including interpersonal skills, dependability, expertise, efficiency and flexibility (Tidd *et al.*, 2001).

The final component of this integrated model reflects the '*Outcomes'* that result from user involvement in pre-development activities. As illustrated in Figure 8-1 research has shown that the outcomes of coordinating product development activities and resources with users in the stages prior to any actual development can be a valuable means of enhancing the development process and increasing the likelihood of product success (Cooper, 1988; Biemans, 1992; Gruner and Homburg, 2000; Lilien *et al.* 2002). However, the most noteworthy outcome from the conceptual model is its ability to create strong and lasting changes to new product development routines. It must be noted that accelerating the development process was omitted from the revised model as evident in Figure 8-1. This is owing to Allsop Europe's issue with their new product development process, hence this study could not verify if lead user involvement accelerates the development process.

8.3 Contributions of the Study

This study contributes to two key areas, that is, theoretical contributions and managerial contributions. Each is examined in turn.

8.3.1 Theoretical Contribution

This project advances research on lead user involvement in the early stage of the new product development process in a number of important aspects. Firstly, it bridges the gap in the user involvement and innovation literature, by modelling the processes that enables manufacturers to successfully interact and involve their users in their pre-development process, hence equipping academics with a road map to provide practitioners with the solutions needed to effectively implement user involvement in their new product development process. Secondly, this research is based on the central argument, that in order to understand and capture the complexity of lead user involvement, attention has to be given to both the operational and relational aspects of the cooperative relationship (Biemans, 1992; Van de Ven, 1992; Pettigrew, 1992; Dabholkar *et al.,* 1994; Ring and Van de Ven, 1994; Doz, 1996; Holmlund and

Strandvik, 1999; Holmlund, 2004). By incorporating the dyadic relationships between users and manufacturers, which are embedded in the process, this study has impacted strategically on the existing body of research in the new product development and innovation literature, by shifting the focus of user involvement from an operational to an interactive approach.

Finally, approaching the research from a social exchange perspective has afforded the researcher a much greater insight into lead user involvement in the early stages of the new product development process. Indeed, the findings emanating from this study provide support for the basic tenet of social exchange theory which recognises that the basis of all forms of exchange is the concept of social interaction (Blau, 1964), thus illustrating the adequacy of this theoretical perspective for studying lead user involvement at the early stages of the new product development process.

8.3.2 Managerial Contribution

By closing the gap in the user involvement and innovation literature, this study resulted in number of important managerial contributions. Firstly, the integrated model illustrated in Figure 8-1 provides practitioners of small to medium enterprises such as Allsop Europe, with a road map that enables manufacturers to maximise user involvement in the early stages of the new product development process, to deliver innovative and appealing new product concepts. In doing so, it has detailed the processes that enable manufacturers to successfully interact and involve users in pre-development activities. For instance: *Lead User involvement does not occur in vacuum*. An important managerial implication concerns the recognition that the involvement of lead users in the early stages of the new product development process will not occur in a vacuum. Management must insure the presence of a number of enabling factors prior to commencing the collaboration. These initial enablers relate to the internal and relational characteristics possessed by both the lead user and manufacturer, which they brought to the early stages of the new product development process. For instance, internal enablers such as the presence of a shared vision throughout the organisation, the use of cross-functional teams and external enablers such as compatibility of culture between the two collaborating organisation and the presence of past experience of collaborations with the company. Hence, at a

tactical level, for the successful involvement of users in pre-development activities, employees should be encouraged to develop multiple inter-organisation relationships and feed information back into the organisation.

Inter-organisational relationships are essential. Another important managerial implication concerns the recognition that at a strategic level, inter-organisation relationships must be developed and managed, as the relationship will influence the manner in which the individuals interact in the partnership and ultimately, the performance of the partnership. This implies a strategic and committed focus to the long-term development of strong relationships. While there are undoubtedly numerous variables that contribute to the success or failure of specific relationship, Figure 8-1 identifies four key factors that contribute to successful management of users in the development process. These include effective communication patterns, the presence of trust and commitment and auditing the relationship.

Having the right person is critical for cooperative success. At a strategic level it must be noted that if an innovative new product development effort is to stand any chance for success, the project must have a champion (Markham and Griffin, 1998: 436). Indeed, this research has shown that the presence of the project champion is fundamental to the entire process as they will provide a pivot upon which the entire process will turn, uniting all activities. At a tactical level, when choosing a project champion, it is necessary that the individual possesses a broad skill set. As illustrated in Figure 4-3, these include interpersonal skills, dependability, expertise, efficiency and flexibility (Tidd *et al.*, 2001).

Finally, the results of this thesis clearly indicate that the framework illustrated in Figure 8-1, offers practitioners the ability to create strong and lasting changes to new product development routines, in a cost effective manner.

8.4 Limitations of the Research

In assessing the findings of this study, it must be noted that there are a number of limitations to the research. Firstly, the methodological approach utilised in the research was qualitative in nature, hence the limitations linked to qualitative research

apply. The limitations often directed at qualitative include, the possibility of distortion resulting from difficulty of cross-checking information, the fact that generalisation is difficult and the possible questionable nature of using a single case site (Bryman and Bell, 2007). However, it must be noted that a single case site was deemed more appropriate than multiple sites due to the complexity of the phenomenon being researched and the need for time to delve further and gather rich, meaningful data. Furthermore, whilst the research findings cannot easily be generalised because the findings and opinions expressed are specific to the individuals and settings in question, the data and findings are comprehensive.

Secondly, interviewing was only conducted with management from the case company. Therefore the lead users experience was limited to feedback at the lead user workshop and descriptions from the view point of the management at the case company. Had this research had the opportunity to interview the lead user, the research would have achieved a more holistic result. Thirdly, the sample is industry-specific and also has been restricted to a national context. Although in the design of the study, no aspects were incorporated that were specific to the electronic accessories manufacturer or to Ireland, an international replication study or a study in a different sector could yield interesting results. Finally, this research could not determine if lead user involvement is capable of accelerating the development process, this was owing to Allsop Europe's issue with their new product development process.

8.5 Recommendations for Further Research

Upon concluding this research, it must be noted that this model is a first attempt in to understand the complexity of the dynamic nature of lead user involvement and as previously discussed, it has limitations, hence creating scope for further research. As earlier stated, the main limitation to this research is that the framework was developed and validated based upon one case company. Therefore, in order to better understand the complexities of the lead user process and to confirm the wider range of applicability of the model, further studies are necessary. Indeed, it would be interesting to replicate this study in a different context or sector. In addition, the study limited its research to the involvement of industrial distributor users and end

users in the early stages of the new product development process. However, industrial users and end users are merely two groups of many possible partners, such as, research institutes, governments and suppliers. Researching the involvement of these actors would contribute significantly to theory and practice.

Finally, it would be interesting to approach this research utilising a quantitative methodology, hence eliminating the limitations linked to the current study as a result of using qualitative research.

8.6 A Critical Reflection

Due to the reflective nature of the current section, I am going to drop the third person narrative and conclude this thesis in the first person pronoun. The purpose of this section is to try capture in a few paragraphs the research journey which led to the completion of this dissertation. The past three years have undoubtedly been a journey of self discovery and the greatest learning curve thus far. This journey saw times of self-doubt and fear but these were surpassed with times of a sense of achievement, pride and the realisations of one's ability to rise to difficult challenges. In relation to this research masters, I began with a limited knowledge in both the topic area and experience of conducting research, as the only research experience I had previously undertaken was completing my dissertation in the final year of my undergraduate study. Hence, my research journey was one of self learning.

My initial response to the research topic was that user involvement in pre-development activities could only impact positively on an organisations new product development process. After analysing the extensive literature written on the topic, it was clear that the enhancers and inhibitors to successful user involvement have been explored, but managerial guidelines that enable manufacturers to successfully involve users in pre-development activities were scarce. As many aspects were completely new to me, it required a steep learning curve in order to ascertain which elements were essential for the development of my conceptual framework. I used literature on user involvement and relationship marketing as a starting point to develop of an integrated model for involving lead users in the early stages of new product development, which highlighted the critical processes underlying the management of user involvement.

In tandem, with the development of the conceptualised model from the theory base, I gathered data from a longitudinal study. After much consideration centring on the nature of the research question, that is, the need to understand a real-life phenomenon in depth, as well as the fact that relatively little knowledge is available on the research topic, it was deemed appropriate to merge aspects from action research with a single interpretive case study approach. This approach provided me with first hand experience of the processes that enabled the manufacturer to successfully interact and involve their users in their pre-development process and facilitated the collection of a comprehensive qualitative data set.

It is only after having gone through the process and learning by doing that I now truly understand what is involved in the research process. Indeed, only now do I fully understand the importance of external input in the new product development process and now that I have a richer understanding of the methodology process.

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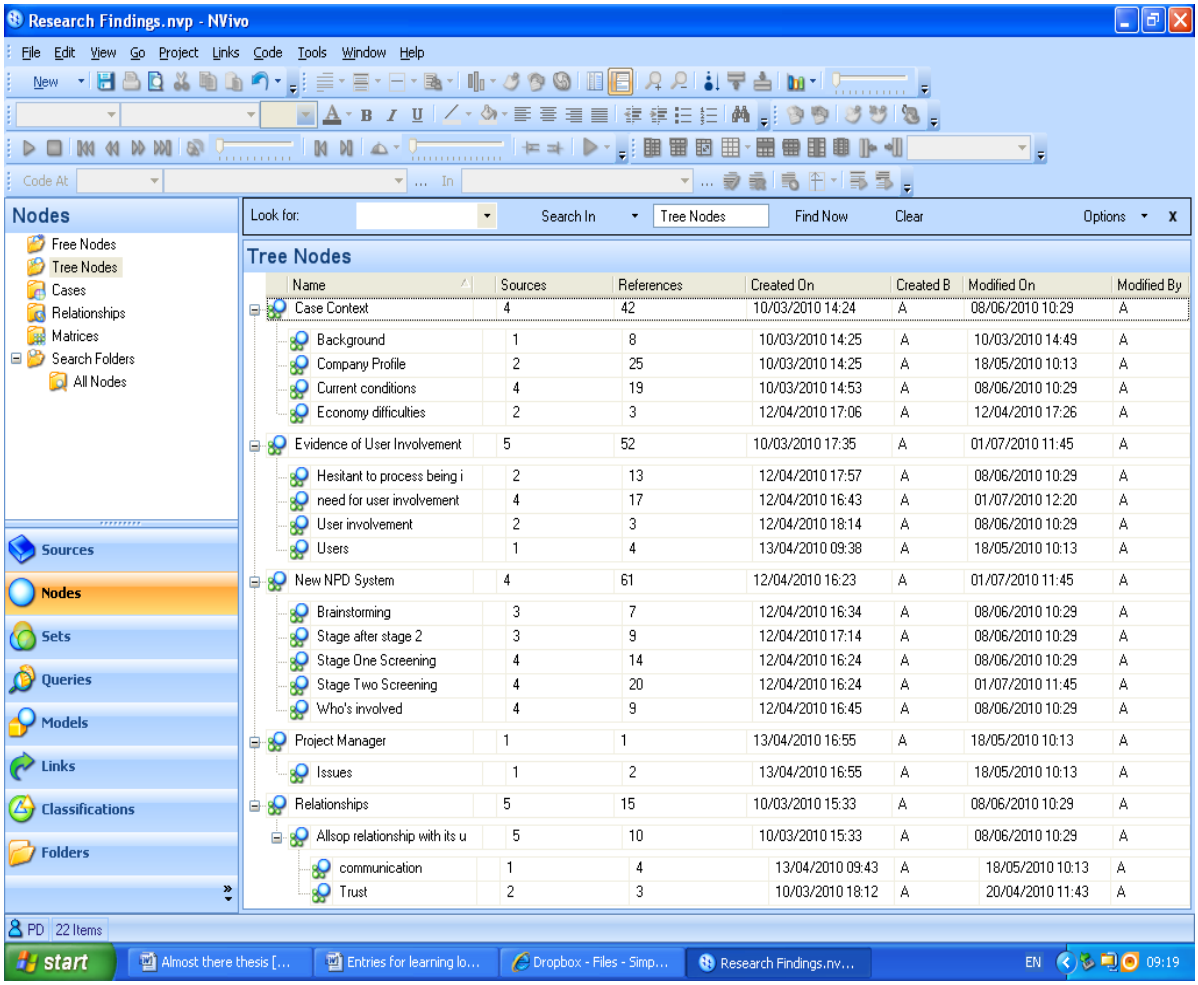
Appendix A NVivo Tree Nodes



Appendix B Allsop Europe's Concept Proposal Form

Project Name:
Applicant:
Department:
Sketches attached:

New Product Development

ALLSOP®

Brief Product Description:	
New Product Concept or Product Improvement:	
Design Characteristics:	**Measurements:** **Colour:** **Materials:** **Parts/ Functionality:**
Market Analysis: Target Market/ end users? Size of market segment? Source it or buy it in? **Competitors**	
Proposed Life Cycle of Product:	
Rohs Wee Approval Required:	Yes/ No

Appendix C Allsop Europe's Stage 1 Screening Document

STAGE 1 SCREENING

		Strongly disagree	Mildly disagree	Neither agree or disagree	Mildly agree	Strongly agree	
	Weight	**1**	**2**	**3**	**4**	**5**	**Total**
This product solves a specific and a relevant need	**3**						
The product is innovative - the first of its kind with truly unique features	**3**						
We currently do not have a product within our range fulfilling this specific need	**2**						
The product will provide new sales opportunities through our existing sales channels	**3**						
The product has the ability to outlive changing user needs in the market	**2**						
We have successfully launched a similar product in the past	**2**						
Grand Total							

If a product get a score in any of the red boxes in the screening process this product is immediately killed.

Appendix D Allsop Europe's Stage 2 Screening Document

STAGE 2 SCREENING

			Strongly disagree	Mildly disagree	Neither agree or disagree	Mildly agree	Strongly agree	
	Filled in by:	**Weight**	**1**	**2**	**3**	**4**	**5**	**Total**
The product can meet a target retail price acceptable within the market	**CD/GB**	**3**						
We will not be required to get Rohs approval for this product	**ROD**	**1**						
The product will function in use as it has been designed to do	**TD**	**3**						
This product be ethically sourced	**GB**	**2**						
The product can be made from sustainable materials	**GB**	**1**						
The product can be packaged with its function clearly explained to the end user	**CD/AS**	**3**						
Transportation costs for this product will be within acceptable parameters	**GB**	**1**						
The Product content is not classed as Hazardous	**ROD**	**1**						
The finished product looks aesthetically pleasing	**TD/CD/AS**	**2**						
The manufacturing quality of the product is higher than competitors offerings currently available	**TD/CD**	**3**						
Grand Total								

If a product get a score in any of the red boxes in the screening process this product is immediately killed.