THE SIGNIFICANCE OF INTEGRATING PRODUCT INNOVATION IN INCREASING BUSINESS COMPETITION

Case: MHG Systems Oy Ltd

Thesis

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Abstract

The surge of product innovation is very crucial to business organisation because of its importance in enabling organisational competence and competitiveness in market competition. Based on this, the thesis study was to show why it is highly relevant as a driver of business performance and as a key indicator of competitive advantage strategy for business growth. The research also provide guidance on how firms can adopt and develop innovativeness and be aware of its market environment. The study was therefore carried-out purely on researcher's interest in understanding how product innovation could impact the competitiveness and success of a company. It will also serve as a roadmap for researcher's future business development.

The use of qualitative and explorative research is implemented to obtain necessary thereotical (secondary) knowledge to support this research, coupled with primary information obtained by the personal/indepth interviews survey conducted with the case company, MHG Systems Oy Ltd. The ways product innovation affects this company was determined through its innovative effort on their product offerings.

The result of the findings showed that product innovation in this company actually contributed to its success in the business field, which has enabled the company to gain large profit and some sort of market positioning. Conclusively, the thesis in essence demonstrated the significance of adopting innovation to products either as services or goods of the organisation; to provide unique value and benefits for consumers, gain market share and instill competitive advantage over competitors.

Keywords
Innovativeness, Competitiveness, Innovation, Capability, Performance, Strategy, Significance, Integrating, Creation

Note

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1 INTRODUCTION

Background

The thesis report is to clearly show the importance of product innovation and why an organisation must embrace it in order to have a sustainable competitive advantage in their business environment. The word 'competitive advantage' is derived from knowledge and technological skills and experience in the creation of new products. A sustainable competitive advantage is the capacity of an organisation to offer products (tangible or intangible) that appeal to the needs and want of the target customers in a much faster and distributed ways (Alegre 2006, 333.), in a bid to generate profitable returns for the company and gain market positioning.

Product innovation is based on successful exploration of new ideas to providing solution to a problem or process (Brown and Eisenhardt 1995, 343-378), which is therefore measured through product development speed, cost and performance delivery (Alegre, 2006, 335). The degree of significance of product innovation in a firm is therefore explored in this context.

There are four chapters in this contents report: chapter two explained conceptual terms on product innovation, classifications, roles and positive impacts on market, consumer and firm, including its risks on ways of adoption. Chapter three discussed about product innovation strategy and the key variables on drivers of product innovation capability (creativity, discerning customer needs, need for innovative collaboration and awareness of market orientation). The choice of partners in deciding product innovation is also explained, coupled with how new products follows NPD model process, and its combined factors and conditions that determines its successful development. Chapter four basically involve an overview of case company (MHG Systems Oy Ltd), its appraisal relating to the context of product innovation and consequent interviews findings, conclusion and recommendation.

Aim/Research Problem

The researcher is interested to establish the significance of embracing product innovation by firm to create business performance and competitive edge in business environment. The Thesis is also expected to show factors that will enable firms to engage in productive innovation in their related fields. It is therefore expected that this will be highly beneficial for small and medium size enterprises (SME) or future business developer and an entrepreneur.

However the research problem was defined during brainstorming on how to approach the research in focus. It thus goes as: "In what way can a firm survive competition in market due to challenges of globalisation in both industrial and technological expansion in business environment, and yet generate the best sales and ensure customer's satisfaction.

Personal Motivation

The motivation behind my rationale to research on the Thesis topic is as a result of my awareness of 'innovation' which became the subject of discussion amongst leaders and professionals in business organisations, coupled with my knowledge and understanding of 'competitiveness', as most often mentioned by authors when issue of market competition is measured.

In view of this, I then decided to find out brief information on innovation as my area of interest, and it was at this point that I got fascinated by its description as the creation of new ideas, services, goods or process. I finally concluded to focus on this subject area during my attendance at EXIMIN Project conference on innovation on 9th of January, 2010 at Vaasa.

2 BASIC INFORMATION ABOUT PRODUCT INNOVATION

In this chapter, the main focus will be to understand main fundamental of product innovation as one of the measures of competitiveness any firm can adopt to create a niche in business environment. The most important characteristics of an entrepreneurial firm underlies its strong commitment to generating and bringing in new products to the marketplace, which in fact should be done ahead of competitors (URL>http://www.questia.com/googleScholar.qst?docId=5002199330,23.11.2011). Based on this, entrepreneurial firm, such as SME, happens to be an organization which involves in product innovation, takes part in severe projects, and is particularly the earliest to be found with proactive innovation that could make a distinction in the competitive society (Miller 1983, 177).

This kind of a firm utilizes brand new products and solutions to attain success and productivity (URL>http://www.questia.com/googleScholar.qst?docId=5002199330, 23.11.2011) simply by allocating business opportunities within the enterprise, gaining new customers and going firmly into new markets. Products launch get rolling into the market, and thus can enable an enterprise to obtain a substantial share of the market, often 50% from current market. It facilitates the firm to be able to demand more prices relative to other future market beginner.

2.1 Description of product and innovation

We might be wondering the association of these two words, called *'product'* and *'innovation'*, but in actual fact there is interconnectivity between them within the scope of this research. Product is observed as a visible good, service, concept, individual and even place which is qualified to providing concrete and in concrete features that an organization consider as being essential, rewarding and also acceptable which affords them a means to trade for money, and equally serves as support, which may entail other unit of value needed to get it (Brassington, F. & Pettitt, S. 2007, 179).

According to these definitions, one could explicitly understand the importance of product offerings in business environment. Further, the aspect of concept as mentioned earlier involves branding, packaging, design and quality, and these therefore depend on the type and category of the product to be offered in the market. This is also tantamount to 'concrete' and 'in concrete' terms as used in the above expressions. In simpler explanations, the word 'tangible' refers to those goods eyes can see, hands can touch, such as food items, high-tech equipments, phones, machinery and other suchlike products. While 'intangible' implies services like management consulting, psychology, flight trip and medical assistance, counselling among others.

The issue of 'innovation' cannot be over-emphasized when dealing with product development. The relationship to the subject of product innovation will be explained in deeper sense later in this chapter. Thus an innovation is an idea, service, goods or technology that has been developed and marketed to customers who perceive it as novel or new. It is a process of identifying, creating and delivering new-product or service values that did not exist before in the marketplace (Kotler, Armstrong, Saunders & Wong 2001, 499.) In like manner, it is likewise defined as being good, service, or idea which is distinguished by person or group of people as new, regardless of its long existence (Kotler and Armstrong 2009, 632). Trott (2005, 15) identified innovation as administration practice that incorporated all of the methods related to idea generation, R&D, know-how, engineering, manufacturing and marketing of new product. In addition, another author views it as a change in technology which is believed to be a different or another absolute way of doing an examined phenomenon (Bateman and Snell 1996, 518). By weighing these various definitions, innovation can then be generalized or regarded as new product market opportunities.

Conclusively, one would deduce that the bond between 'product' and 'innovation' are inseparable. Because of these facts, innovation when taking into considerations will enable a product to be perceived as new in the market and hence demands patronage by the potential customers. It must bear in mind that an innovation can either be big or small, brand new or just having little difference, complex or quite simple. The pattern of

innovation will largely rely on its terms of technical achievement, as connected to the firm's feasibility based on the line or field of business operations. That is why Peter Drucker believed that innovation as an instrument of entrepreneurship, and the act that endows resources with a new capacity to create wealth (Wengert 2007, 138).

Nevertheless, the type, industry and style of innovation are irrelevant, but its impact in business environment will determines the level of qualification. Conversely, invention should not be taking as innovation, because invention is only useful to the inventor when offer to the public knowledge. But if the inventor improves some goods, process or service for the public, then it becomes innovation. In essence, it is a component of innovation and therefore is solely part of innovation activities.

2.1.1 Definitions

Following those meaningful emphasizes and explanations on the linkage of product and innovation, these words when brought together, are called 'product innovation'. This description now combines variety of product development activities, that could be simplified into product improvement, development of totally new ones, and extensions that increase the range or number of lines the firm can offer (Kotler, Armstrong, Saunders & Wong 2001, 499).

2.1.2 Classifications

There are ways through which product innovation is classified, and this is subject to the degree of newness, trend of development and research, including market observation and resources available by the firm before a novel product can be launched to the marketplace. The previous studies thus show that product innovation is diversified. This diversification enabled Iyer, Laplaca, to group product innovation into kinds; as the *degree of newness*, *radical* and *incremental* types of product innovation. Radical innovation deals with bringing new technology or product to the market which may or may not be similar to existing

product. He further described incremental innovation as series of changes made to improve or modify an existing product. On the hand, according to Atuahene-Gima (2005), he stated that radical products are embedded with technological vices in a firm, such that its offering to the market also brings benefits to users (Bidgoli 2010, 426). The comparative description of these two is that incremental innovation deals with products that are re-branded or re-designed from existing products while radical innovation introduces new products to the marketplace (Bodlaj 2010, 244).

In the same way, notable authors also observed product classification by the level of *product architecture*. It follows that Ulrich and Steven defined it as a process of arranging each function of a product and mapping its physical components (Herstatt et al. 2005, 237), including taking the instruction of the interface into consideration within the products. It is equally established that product architecture is changing the arrangement of the products but not the components within the product, thereby making it to have the potential of creating a competitive advantage (Gulati and Eppinger 1996, 4). In this regard, those products that are leading in design could possibly become more productive in product category, and therefore set a pace, as standard in the market environment or industry in general.

In contrast to this, dominating design of some certain products may not be innovative over time as opposed to others (Koski and Kretschmer 2007, 4). This is demonstrated in 1980s via the case of Video Home System (VHS), which was a dimension for home videocassette recorders (VCRs). At that time, the technology of VHS was less competitive to that of Betamax.

The symbolic aspect of innovation is also considered as a way to fulfil emotional needs of the consumers (Dobre et al. 2009, 20-22). In the same way, the outlook of products is found to influence consumers' decisions to make purchases. There are three factors which may attract consumers to embrace new product, namely: *involvement*, *pristine* product and *possession*. The act of involvement hence shows their degrees of emotions concerning the product. When consumer perceived that a product is completely new or different than the

current product, it is being referred to as pristine product. Meanwhile, possession indicates the period at which consumers buy product for its use by taking emotional and rational factors into consideration.

To this end, product classification will be based on three approaches: technology, consumer, and the blend of technology and consumer approaches. The actual rewards of product innovation will therefore be considered on these approaches by which product innovation is evaluated.

Technology Approach

A company which adopts this approach usually possesses sound knowledge and expertise to create very high technological products, which may be regarded as concept models yet to be commercialized or found at any marketplace. For instance, Honda launched ASIMO (the human like robot) to induce and really encourage the young people to study sciences but not for profit purpose (URL> http://asimo.honda.com/news/, 26.07.11). The perception might certainly not be suitable for small enterprises which are lacking technologies, know-how, personnel and finances.

The two types of innovation: radical and incremental innovation is believed to be from the degree of technology within a new product. Christensen opined innovation may be disruptive, when its technology replaces the existing products or market by providing a new set of features and sustain market performance (Narayanan and O'Connor 2010, 93). Although, the development of products that dominates in technology did not imply that products would certainly gain commercial success, many new offerings dominating in technology failed to succeed entirely on the market. Further, new technology may not certify the success of a new product, as the failure of Betamax in 1980s demonstrated. Despite the fact that Betamax had high technology in magnetic movie recording technological know-how, the company lost market share and faded off in the market through competition with VHS.

Consumer Approach

The companies that prefer to develop innovative products in order to satisfy customer desires must embrace this approach during the process of new product development. In particular, the small and medium enterprises (SME's) needing to develop new products but less efficient in technological knowledge and funds can gain when analyzing product innovation in that regard. Product driving by customer needs, even when lacked high technologies can still become more successful than technology push product (Kahn 2011, 26). An example is ball extinguisher. Small companies that develop brand-new goods may possibly choose this approach by finding out the actual needs or priorities of users in the market. Technologies as well as know-how may not be enormously mandatory, thus companies can easily minimize finances in creating entirely fresh products.

New products should have cutting edge features in addition to its advantages to fit the expected needs of consumers in the market, especially those ones developed based on customer's perception of price, quality, features and service succeed better than those without customer preference (Thomas et al. 2006, 14-15). For example, adding fluoride to tooth paste intended for cavity protection was a noticeable feature of new product from a consumer approach which is associated to their self esteem and thus created a good feeling hygiene experience for them (Parry 2005, 119). Hence the product appealed to the needs of the market and resulted to high volume of sales in the market.

Firms were confident that all great outcomes of innovative products came from appropriately responding to consumer needs when relationship is built with them. For this reason, customers are prompted to involve in the process of developing new products (Pohl 2006, 1-3) because firms collects important information from buyers through the use of main customers known as opinion leaders, the innovators and other users in the marketplace. The good ideas, information, views and recommendations from customers serve as helpful hints and thus considered as strategies for developing new products.

The roles of an innovator are very paramount to new products development. A good innovator is referred to somebody who often makes use of newest products before others' adoption in the market. It is considered that firm's expected results for a new product produced using information coming from innovators was larger than those of new products developed through information from common customers, in terms of financial return (Blecker et al. 2006, 454). It was due to the fact that ordinary customers did not have enough knowledge or expertise to provide useful information for development. Thus innovators were more acquainted with new items. Why? It is because it enables them to tailor and follows new products to meet their exact needs in the nearest future.

It is more notable that consumer choices or tastes are changing over time. But firms must be aware at this stage, since difficulty to follow changing consumption pattern, tastes and behaviours by firm could lead to costly development of products that were outdated prior to being introduced into the market. Despite this fact, speedy changes in consumer choices or tastes could have adverse effects on products development team in making new products that are sufficient to meet the needs of the consumers, needless to say it will satisfy them. An example of a new product in that regard is the ball fire extinguisher. The benefits of ball extinguisher are: it is the easiest and fastest way to extinguish fire, lightweight, and also safe. In addition, technology within this product is in no way difficult when likened to current products. Ball fire extinguisher had been honoured for innovative competitiveness in the 21st World Genius Convention in 2007 and WIPO award certification in 2008. Therefore sales revenue of ball fire extinguisher was beyond 100 million baths a year from selling in thirty countries all over the world whilst the money invested in development was just 25 million baths.

The combination of Technology and Customer Approaches

One of the reasons for product innovation is the tendency of customers to profit from new technologies on new products which experts claim provide new features or functions. In recent market development, products whose formation and innovation is created by combining technology and customer feedback or perspectives are bound to have the newest technology, and hence tends to introduce new quality and advantages to meet customer's desires (Cooper and Edgett 2009, 132). For instance: Sony unveiled the Walkman in the middle of 20th Millennium. It had been introduced onto the market as 100% new and entertaining product. During that time, Walkman was a first individual headphone stereo of which people can carry about to any place. Walkman consumed batteries as power, being a substitute for electric wires connection. In addition, the functions and advantages attached to Walkman achieved the specifications of users, particularly youngsters who wanted a meaningful but new product to appeal to their delight in music. Similarly, the introduction of mobile wireless communication has more convenient for users to send messages, call and perhaps browse the internet as compared to the old landlines with series of cable connections around the house and street.

As an illustration, Apple innovation in mobile electronics in 20th century has created enormous dominance in mobile technologies and this has placed them as a leader in mobile designs and applications. The introduction of iPods, iPhones (1-4), Tablets and iPad have hugely created a superior market performance and brand loyalty amongst its competitors (Samsung, Motorola, Nokia and Sony Ericsson). Despite the fact that Apple’s competitors never seize to innovate as well, but the speed of innovativeness and adaptation to customer’s needs and wants has made them to be more efficient, and hence able to instil competitive advantage.

For this reason, firms must fully grasp both internal resources vis-a-vis: know-how, capital, personnel and the external environment which entails the demands of customers within the market and more so the technological turbulence that determines their tactics for creating new products. The new and great tactic relies upon a company's resources coupled with the

surroundings the organization is exposed to. It was similarly confined that new technology within new product creation provides some profits and features that the customers perceive to satisfy their desires (Atuahene-Gima 2005, 75-93). In this vein, low-tech firms have to develop new products that focus on customer needs, which will certainly offer more benefits to them rather than developing products based on sophistication issues on the product.

2.2 Roles in Market Competition

The forces of business competition between firms evolve innovation to take place in the market, which demands firms to harness resources to subdue the competitions through development of sophisticated new products and appropriate use of technology. According to Schumpeterian 6 perspective (Hendrikse, Tuunanen and Windsperger 2008, 286) on market powers and innovation, competition has negative impacts on innovation and technological progress. He believes that monopolistic firm is able to engage more in innovative activities when there is less market uncertainty and rich competitors, because the low market pressure will avail the firm to fund their R&D.

Nevertheless, competition could still compel firms to innovate as a measure to survive market pressures. Aghion and Hewitt (1998) declared that there is relationship between product market competition and productivity growth, so he provided the theory based on Darwinian effect. The Darwinian effect states that high product market competition may force managers to speedily adopt new technologies for the purpose of avoiding loss of control rights as a result of going bankruptcy (S 2002, 8). Hence product innovation should be adapted between firms for those that are ready to survive the competitive pressure

However, in a *neck-and-neck* competition, which may be likened to “creative destruction”; the existing or current firms will engage in gradual technological innovative activities, since in most cases they do not have enough resource incentives to innovate unlike the new entrants (S 2002, 8). The firm with parallel technologies will increase its incentive to

acquire technology mainly to gain competitive advantage over its rivals. Therefore when market competition is more dynamic, it enables those firms that are also dynamic in market changes to gain competitive advantage. By dynamic competition, it means the "process in which innovators with new technology enter a market and compete with incumbent firms with conventional technology. If the innovation is successful, the entrants will be able to replace the incumbents. If not, they will fail to survive.

In addition, the dynamism in market competition causes volatility in market demands; which tends to wipe out the less efficient firms from those that are more efficient.
Consequently, it leads to reallocation of product resources to be taken off from the less efficient ones; allowing the efficient ones to enter and grow their firms. Nonetheless, as the competitive pressure increases, and the market share and productivity are almost taken off by new entrant firms; the incumbents or existing firms are being forced to engage in innovation. Usually the incumbents are not always aggressive to experiment and adopt new technology, because they believe to have acquired enough experience in the market with conventional technology, as compare to the new entrants. This therefore does not work well in a dynamic or very much market competition.

Regarding the above, the dynamism in market competition requires great deal of innovation efforts which will enable companies to sell more and improve their current products incrementally by aiming to sell at higher margins or volumes, creates new goods and services and expand through merger/collaboration or by acquisition.

Moreover, while it is true that it increases profitability; it equally helps to possess and retain market shares. On the other hand, it enhances design, customisation and quality of new products especially in low products like electronics and cars with short life cycle.

2.3 Impacts on Consumers

The global markets today has become so diversified that customers/consumers have more interest in new things, because their needs and tastes are constantly changing. These changes in their consumption pattern thus calls for firms to adapt the use of innovation, as possible and significant ways to satisfy their customers. In market environments, firms compete for consumers, most especially in technology evolving global markets. In view of this, it is important for a firm that managers must be aware of their capabilities and the position of their products and that of the competitors before introducing new products to the market (Nemati et al. 2010, 299). Following literature reviews, impacts of product innovations on customers to its degree of reputations can be described in terms of excitement towards the firm, customer satisfaction, and firm's image, paying price premium, brand loyalty and tolerance for occasional failure.

❖ Reputation

Reputation is known to be built on past experiences with the organisation, its performance, partners and products which have formed a social memory in the minds of customers. Therefore reputation in product innovation (RPI) is associated with perceptions and experiences of customers coupled with their expectations of a firm's innovative products (Henard and Dacin 2010, 322). However, based on corporate perspective, it is considered as a signal that stimulates information which allows firms to promote quality product, shelf market entry limitations, change price premium and shape consumers attitudes towards company's products.

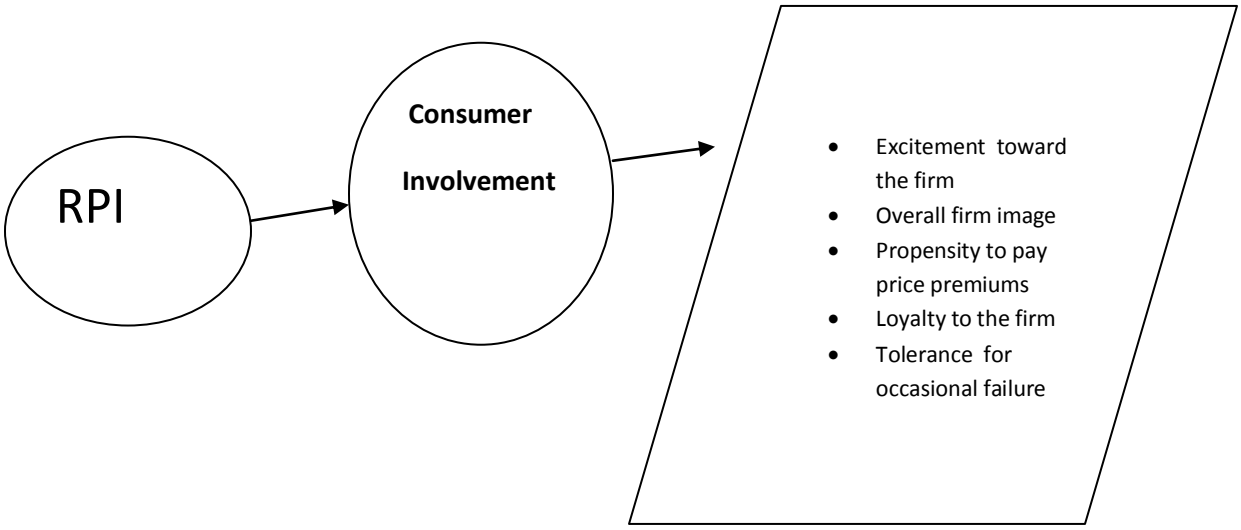

Figure 1. ***Model of Firms Reputation for Product Innovation on Consumers.***
(*Source: Henard and Dacin 2010, 323****)***

❖ **Customer's Satisfaction**

It concerns with the offering of new goods or services by firms to please or satisfy their customers. It is meeting customer's expectation through new goods or services purchased and or experienced, which may also provide extra benefits beyond the customers' imagination. The consumer's involvement levels are thus triggered by historical or past good record of firms products. The research finding show that customers perceives product superiority and uniqueness on some technical product functionality and reliability, as contributing factors to their level of satisfactions and sales for the firm (Nemati et al. 2010, 299).

The new products launched into market must be differentiated based on its new feature/usage value, and once the new products appealed to the customers; they become happy, inspired and willing to buy and re-buy (Raza Nemati et al. 2010, 300). The degree of customer satisfaction and dissatisfaction is centred majorly on their experience of new

product. Thus product performance is perceived by customers to relate to product satisfaction. Similarly, it helps firms to measure their business performance too, since customers always find a safety net in whatever products they buy. It is also found to play a role between price increases and repurchase intentions (Nemati et al. 2010, 300).

A firm is however expected to innovate because of the varied changes in taste and choice, as it underpins customer's satisfaction. According to Nemati et al (2010, 300), it is argued that business strategies must be flexible to changes, so that it can be developed, altered and reshaped to meet customer's expectation in order to guarantee more customers' satisfactions and generate higher market returns.

- **Excitement toward the Firm**

This is concerned with the situation whereby the consumer is excited having being involved and have experienced the new benefits of new products introduced in the past. This perceived reputation of product innovation positive impression drives the consumer to be expectant of the new products development. Hence, this is considered to influence customer involvement in having a desiring and enthusiastic spirit about the new products to be introduced to the marketplace, which eventually boasts the consumer's expectation and happiness towards the firm (Avolontis et al. 1994, 5-28).

- **Firm Image**

When customer's positive perceptions of reputation of product innovation is consistently developed over time, the aftermath result avail the customer to build confidence in the firm. As a result, as more new products are developed and introduced to the market, it increases the overall positive perceptions of the customer which thereby augment the personal relevance of the consumer to have a more and complete positive predisposition towards the firm (Henard and Dacin, 2010, 325). This then form a positive firm image about the

company level of successful product innovations. The firms in this category are generally perceived to be market leaders because of high likeability or desirability by consumers.

- **Paying a Price Premium**

In a market competition, firm that is regarded with greater perceived reputation for product innovation is usually differentiated by the consumers/customers, than those with less positive predisposition of personal relevance with the firm. Thus since customers now have strong excitement and positive image, their preferences is therefore maintained. This level of personal relevance and choice of the firm will make the customers to be fewer prices conscious, hence less price sensitive to compare with other alternative brands (Henard and Dacin 2010, 325).

- **Brand Loyalty**

It is deduced that the stronger the attitude relationship with a firm, the less diversion through appeals from other firms (Henard and Dacin 2010, 325). Innovation reputation results to consumer loyalty. It is deduced to be an ultimate end result of an innovative reputation. This may be described as the act of buying constantly the same products (goods or services) from range of brands in a particular class or at different markets. It is more predictable when a consumer buys a brand all the time in the same store, thereby limiting the number of brand alternatives available for them (Nemati, et al. 2010, 302).

Although, so–called loyal or brand customers do not only consider the quality of products and benefits sought when making purchase, but the issue of price is another factor. Hence even if the new products offer significant user benefits and experience, most customers do not see it as a reason to pay huge price premium. They needed something more new, more beneficial and affordable. However consumer attitude varies, other key variables observed include; family pressure, age, sex orientation and relationship with salesperson are considered when buying new or innovative products.

Tucker (1964, 32-35) also argued that some customers are brands loyal simply because there is no discrimination of any sort between brands other than the brand itself. It boils down to the level of faithfulness of the customers being tied to a particular brand (Nemati, et al. 2010, 302). For example, Apple Company falls in this category because its brand loyalty can be noticed with many consumers around the world. Regardless of this, brand loyalty generally varies with age and consumption pattern.

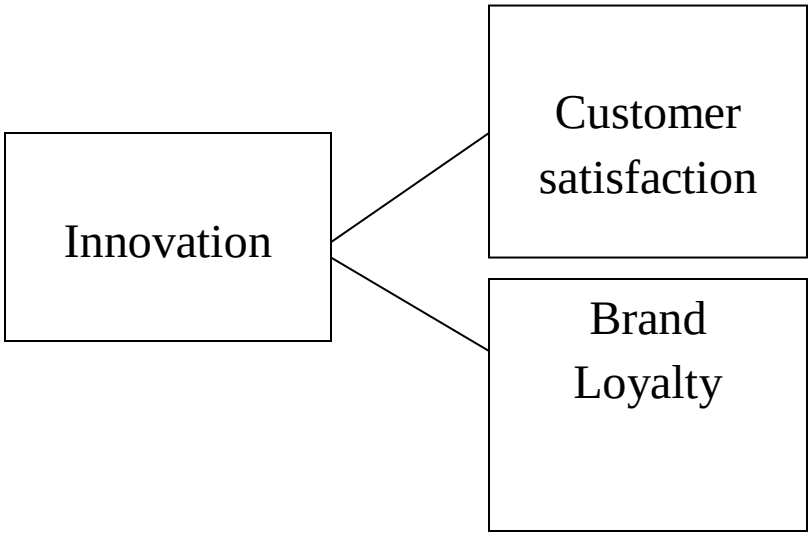

Figure 2: ***Relationship of innovation with customer satisfaction and brand loyalty***
(*Source: Nemati et al. 2010, 301****)***

❖ **Tolerance for Failure**

It is not uncommon for customers to decide to measure new products performance based on their usage experience in comparing product performance expectations and actual product performance. According to Woodruff, Cadotte and Jenkins (1983, 293-321), consumers will be able to gauge the products performance perceived, using the test–based model, which measure overall experience to be evaluated over period of time.

The evaluation carried out will determine if the product falls within the 'zones of indifference', and if it is; then it shows that the customer assessment about the product performance is positive. This means that it is acceptable to the customers owing to the high personal relevance of the customers and strong will perceptions of the company's high reputation for product innovation. Henard and Dacin (2010, 326) states that "*while expectations of performance from product initiatives of the innovative firm may intuitively rise over time, a history of successful product innovation may buffer the normally negative impact of an occasional market failure that results when actual performance falls short of expectations.*"

2.4 Risks

Professor Stefan H.Thomke at Harvard Business School opined that new products help firms to grow their business and even instils a good level of competitive advantage. Similarly, it plays a role in managing uncertainty that may arise in business environment that cannot be over-emphasized. Therefore for product innovation to work, the following questions must be considered.

- Technical risk: Will it work?
- Production risk: Can we make it at low cost?
- Customer uncertainty: Will it meet a need?
- Market uncertainty: Will it be delivering into a fundamentally altered or disruptive technology universe?

These questions of cautions should then be critically examined before new products could be successful in markets (Thomke 2010, 2).

3 COMPETITIVE STRATEGY FOR NEW PRODUCT DEVELOPMENT

In business environment, strategy enables companies to quickly achieve their visions and goals on any given projects. These strategies could be viewed as tactics in successfully leveraging such companies to having better advantage. Therefore in achieving business results in developing and introducing new products to the markets, these strategies below would lead to best innovation performance; if all are to be integrated together (Cooper and Edgett 2009, 10-18).

- **Focus Based on New Products Efforts**

Companies are better gearing efforts to develop new products which focus on markets specific sectors and applications that are closely related or linked to each other. But also introduce new products to address non-related sectors so that the companies would have large stake in different customer groups (Cooper and Edgett 2009, 19)

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- **Technologically Driven Strategy**

In thriving better in marketplace, companies that have strong technology capability and skills will be able to employ high sophisticated technologies to develop new products or sometimes complex products to duplicate. This will then be a niche strategy to create a competitive image based on its technological innovation prowess. Therefore companies with such high technology will do better than their competitors (Cooper and Edgett 2009, 19)

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- **Market-Focused Strategy**

The consumer market today is getting more challenging, that is why the marketplace needs firm that will be proactive in identifying market-need, by being highly sensitive to market needs and wants. This knowledge is expected to provide such company a solid market

inputs and insights which will enable its development of new products that will be closely in line with market demands (Cooper and Edgett 2009, 19)

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- **An Offensive Strategy**

A firm interested in gaining market positioning and maintain constant growth needs to introduce aggressive initiatives on new products development which will aim at growth and gaining market share rather than to merely protect its position. The company in this case will develop innovative new products to create a defence in market dominance and also attack other opposing products, or better still competitors in maintaining competitive edge (Cooper and Edgett 2009, 19).

3.1 Elements of Product Innovation Strategy

From the above, one cannot but explain the elements of product innovation strategy in relation to four strategic thrusts aforementioned above. This provides information on how to start developing product innovation strategy for business in a more visionary manner. It deals with idea and logical flow to help understand leaders and managers in developing new products (Cooper and Edgett 2009, 3).

a. **Objective and Role**

It tells about the role innovation plays in a company in achieving business vision. It proffers solutions to the questions: how do innovation on new product fit into their business overall plan, number of percentage expected sales from new products over a certain time, number of new products to be introduced, expected success rates and the desired financial returns from new products? Thus the role of new product need be clear and well communicated. This will help personnel and employees involved; either as innovation team or not to actively support and intensify efforts in working towards the same purpose (Cooper and Edgett 2009, 23).

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b. **Arenas and Strategic Thrust**

This aspect defines area or zones the new product efforts/concepts will address or focus at, which mostly comprises of markets, industry sectors, product types or technologies and its applications as briefly aforementioned. It further spelt out the direction where the strategy is applicable. In this case, product innovation opportunities are assessed at strategic degree (Cooper and Edgett 2009, 24). Therefore in order to look out for new ideas and target them, the arenas must be well defined; if not, the search for new ideas or opportunity will remain unfocused.

c. **The Attack and Entry Strategy**

The ability to be differentiated and more so get protected when entering any market with new products is consider paramount in determining the probability of success base on the level of approach of the strategy, which must be established when gaining entrance to the marketplace. The entrance strategy may be an aggressive one when aiming to be industry innovator, through companies' presence in the market with latest products (Cooper and Edgett 2009, 26).

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The company could as well create advantage by being a follower, having to watch-to-copy and improve on competitors' products. In addition, the level of attacking and entry strategies lies on adoption perspectives of the company. This can be subject to geographical or global strategic approach to product development (Cooper and Edgett 2009, 3). However entries need be set out, in terms of internal product development, partnering, licensing, joint venturing, alliances and possible acquisition of other firms. Thus this may actually be limited by immediate resources and may not work efficiently.

d. **Deployment of Resources**

It is critically argued in literature that there is little or nothing a company will do to introduce new product development without monetary spending to assure commitments, priorities plan and strategy; not only on monetary aspect of funding but also on human capital as part of yardstick for new products development process. This resource allocation hence ensures strategic alignment of product innovation based on the corporate goal of the company (Cooper and Edgett 2009, 26).

e. **Strategic Product Roadmap**

This focuses on initiatives and platform development that will guide the management team to map out direction for them to achieve the organizational objective. It drives the firm to succeed in desired and specific market sector. It further assists in laying out technology roadmap for building up or acquiring new technologies. From literature, 37.9 percent adopter of strategic product roadmap is best performers, 27.6 percent are weaker performer and 19.2 percent do not perform at all (Cooper and Edgett 2009, 27).

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Conclusively, if all these five strategies are embraced by the management in business firms, it will become easy for them to deal with decision making, translating strategy into reality and making tactical decisions towards focusing and attaining project completion; which will eventually instil business performance (Cooper and Edgett 2009, 3).

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3.2 Key Drivers of Organization's Product Innovation Capability

3.2.1 Creativity

Creativity has its significance in contributing to successful product innovation if an organization is to create niche performance to enhance positioning and market growth. It is the process that can be acquired and improved through instruction and practice. The expert sees it to be a firm's intangible capability as first step required in innovation. The marketing literature views it as actions, processes and programs that are meaningfully novel relative to existing practice (Bharadwaj and Menon, 2000, 425). Firm perceive innovation as a functional combination of individual and institutional mechanisms to speed up creativity. By individual mechanisms, it is simply those activities that the individual employee carries out to avail him/her to bring up a new idea or something new to workplace. While the organization mechanism basically entails formal approaches, tools and resources available to motivate staff and cultivate new behavioural attributes within the organization.

The level of innovation creativity is however being measured by the level of intelligence, motivation of innovativeness and creativity skills (Bharadwaj and Menon 2000, 425). The issue of motivation to innovate and creativity skills are what *'the process-orientation approach*' deduced as external factors, which closely examined creativity as a property of thought process that can be acquired and improved through instruction and practice (Bharadwaj and Menon 2000, 425) The tendency of a firm to be differentiated underpins how creative its employees are, which therefore has high influence in its innovation development. The creative skills are not developed overnight but are developed and maintained through consistent training and education given to such individual in order to improvise of innovativeness.

Based on this, it is suggested that when employees possessed knowledge and creative attributes, the consequent result then boost or increases innovation performance of the firm (Bharadwaj and Menon 2000, 426). As a result, the organisation expectations thus play a vital role in activating or impeding innovation. This means that firm make signal alert when

expecting innovation by ensuring that funds are allocated specifically. Delberg and Mills (1985, 24-34) make comparison with innovation success and failures. He said failure is associated with lack of funds, known as financial resources whereas adequate provision of resources will lead to successful innovation. The concept of creativity as part of drivers of innovation is therefore found to consist of management practices and process, use of teams and organization orientation. These are encapsulated as environmental factors that constitute to increase in innovation performance. It is researched that the mechanisms for creativity (new ideas, development) differentiates in resulting performance of an organization efforts which may have high or low positive impacts (Woodman, Sawyer, Griffin, 1993 hypothesis).

On account of the juxtaposed reasons, the core fact is that providing supportive environment and resource for creativity by a firm helps to achieve greater benefits from individual employees, Cummings and Oldham (1997, 22-38). Therefore both individual and organizational efforts in creativity hugely instil innovation performance.

3.2.2 Knowing What Customers Needs

The importance of product innovation management is promoting effective new product development (NPD) and timely improving existing product according to company policy (Karkkainen and Elfrengren 2002, 85). Product innovation management (PIM) oversees product development and process so as to create successful and competitive product innovations while also fulfilling company's strategies. The quest for PIM is necessary for firm and/or company that are ready to develop new products, which is by putting up best actionable practices that will result in competitive new products. The need for PIM is subject to those factors which must be considered at the early stages of new product development (from opportunity identification, idea generation and product definition stages), which is careful assessment of market and customer needs as drivers for successful new products development. If some of these factors are not considered, it may jeopardize the success of product innovations.

In view of this, concentration needs to be geared towards early stages of product innovations because most importantly problem occurs at this level and in product definition (Karkkainen and Elfrengren 2002, 85). The attentions required at the early stages are useful and sufficient information required for planning, evaluation and prioritization of new product development projects. These may be described as activities concerned with recognition, gathering and clarification of customer needs and their importance to determine need specifications and objectives for new products. Thus the role of market information is therefore significant, which is being investigated in the course of new product development (Karkkainen and Elfrengren 2002, 86). For a successful development and implementation of new products, different views count in all department/or units, so integrating specialized knowledge from different organizational units is highly essential during an NPD process for a successful product innovations.

In essence, NPD research should be based on different company functions which will have more positive impacts on the product performance rather than relying on informants only, and from research perspectives; such is regarded bias and therefore is not sufficient to justify a substantial evidence for NPD process and benchmarking (Ernst and Teichert 1998, 721-739).

3.2.3 Engaging in Innovation Collaborative Network

Competition in today's market is increasing at high speed due to rapid changes in market, thus making it difficult for firms to create niche market (Barnett and Clark 1998, 805-820). The collision in marketplace led to entrepreneurs, researchers, politicians and business firms to decide on various mechanisms and strategies to innovate in high levels of novelty (Green et al., 1995, Daniels and Kleinschmidt 2001, 203-214). This was observed owing to the problem of insufficient allocation of technological resources in the market by firms (Galende 2006, 300-311), thereby making market transactions difficult to organize; hence an open door to relational problems (Pisano 1990, 153-176). However, Freel (2005, 123-134) stated that there is a growing interest in understanding the relationship between a

firm's innovativeness, its different skills and characteristics. In other words, the degree of innovativeness and competitiveness are deduced not to totally depend on internal skills but its effectiveness by which access is tapped from external sources, in terms of technological knowledge and skills known as open innovation.

In view of foregoing, the emergent of collaborative agreements is necessary to alienate these barriers and enable partners to pull resources together and exploit complementariness. The bridge to create a network therefore reflects a recognition that technological innovations are less the outcome of an individual isolated efforts. On this note, some critical issues concerning the selection of partners and type of networks that favours innovation (Nieto and Santamaria 2007, 369-370) will be thrown light upon later.

How Collaboration Harnesses Organisational Resources

The decision to collaborate may be pertinent to firms when considering transaction cost economics that is worth spending on new products or projects (Hennart, 1988; Williamson 1989, 361-374). Pisano (1990, 368) defined collaboration to be exchange of intangible assets, namely: technologies, information based resources, which may cost more in market than inside the firm (internal organization) as internationalization (with market) takes place within innovation activities. As imperative these activities are, firms are expected to acquire resources and skills they cannot produce internally when the risks of collaboration are not too great. Alliances are most common in many industries (Hagedoom, 1993, 471-385) and have become important strategic tool. In technological activities, networks and alliances are the main sources of innovation. Therefore joint R & D within well organized networks enhances innovation activities of the cooperation partners, thereby increasing the probability of realizing new products (Nieto and Santamaria 2007, 270). In terms of innovation inputs, firms will look for their partners to provide the resources and technological capabilities they lack as a way to offset mutual lacks between them.

Above all, implementing additional capability from external source is also a positive intensifier in achieving product innovation. According to Miotti and Sachwald (2003, 1481-

1499) there exists relationship between collaboration and innovation performance. For instance, the research conducted on innovation firms in UK by Tether (2002, 368) found that more frequent collaborations occur among firms pursuing high level of novelty (radical) than incremental innovations.

Nonetheless, the difficulty in developing more novel innovations could be linked to firms lacking resources and knowledge required to achieve innovations and this problem may be reduced or avoided if such firm sought partners that can supply them.

The Need for Continuity of Collaboration

The innovative capability of firm is largely dependent on cumulative knowledge built over many years of experience (Hoecht and Trott 2006, 678). Network is perceived to be considered an incremental learning process in two categories: technical learning of innovations and management collaboration. Also Dosi G. (1988, 1120-1171) regards innovation as a dynamic process that develops overtime with different paths and partners for each firm. In this way, firm accumulates technological knowledge and shape its resource base and capability for innovation. This dependency therefore shows that current innovation capabilities are determined by its history and experience.

Cohen and Levinthal (1990, p.128-152) support this view by describing the current collaborative capacity as 'absorptive capacity', which is concerned with firm's level of prior-related knowledge to expatiate on the innovation capacity of the firm. Additionally, it is believed to have effect on the management collaborative agreement. Once a firm starts to collaborate, it quickly gains vast experience and develop a reputation as a partner and this will foster a sustained line of interaction over a period of time, thus building up a mutual understanding and outstanding ways of working together.

3.2.4 Accessing Market Orientation

It is the process of generating and disseminating market intelligence for the purpose of creating superior buyer value (Bodlaj 2010, 243). There is greater need to discover the

intents requirements that drives demand of consumers and the trending products which are expected to be in the markets. Firms should therefore find out those products that are already in the market, discover the gaps and then perform market evaluation by obtaining necessary information needed to have clear market insights that will help supplying the unmet needs in the market, in terms of developing and supplying the right new products.

Nowadays, marketing and innovation are considered as stimuli of economic growth and competitive advantage. When firms perform their market intelligence, the result always leads to creation of new products that will yield market needs (Bodlaj 2010, 243) and produce products success.

3.3 Choosing Different Partners and Impacts

In choosing a partner, there should be careful selection of suitable technological partner because capacity partner determines how collaboration will be managed and the trend/type of innovation that can be achieved, since different partners will bring different results. Owing to this, the decision for collaboration for collective resources within firms/partners lies on the level of risks involved and anticipated (Nieto and Santamaria 2007, 368.)

Further, firms that jointly undergo R&D do utilize external resources judiciously in more direct and strategic manner. Hence the need for collaborative efforts in firms aid more efficiency and success in business performance. Therefore the selection of such partners should be based on its resources which must complement its own resource capacity and at the same time sought for same or relevant level of innovation. Although it is observed that negative effect of R&D is caused by transaction costs (Nieto and Santamaria, 2007, 368) which is attributed to the need for coordinating, managing and controlling the activities of different parties involved. These costs are connected to specific assets, asymmetric information, possible opportunistic behaviour of one or more parties, and uncertainty about appropriateness of rents produced by the assets involved.

Moreover, vertical collaboration (with clients and suppliers) is another way through which a firm gains measurable knowledge about new technologies, markets and process improvements and more so a more distinct impacts on product and business innovation (Nieto and Santamaria 2007, 371). Focus group with clients and suppliers when conducted during early stages of product will facilitate delivery of innovation results more quickly (Liker et al., 1999). From this, the more degree of uniqueness in design, the more important linkages are (Meyera and Athaide, 1991, p.155-169) between the firm and its interest group. It should be noted that interest groups of a firm can also be linked to focus group, depending on the level of significance it plays in new product development. In essence, by collaboration, a firm is able to achieve faster its product development when innovative efforts are geared and targeted at achieving product innovations (Fritsch and Lukas 2001, 297-312).

Research has shown that obtaining information from clients in the market and direct involvement between clients and development teams lead to more successful new product development (Atuahene-Gima 1995, 275-293). Additionally, it depicts that users and clients are necessary sources of information that could contribute to developing higher degree of novelty in product development (Amara and Landry 2005, 245-259). However, it is regarded more advantageous when developing complex innovations or higher degree of novelty, as concluded by Tether (2002, 947-967). Supplier is also a useful source of information in developing and improving a product. The needs for collaboration with suppliers help in reducing the risks and lead times of product development, while also enhancing flexibility, product quality and market adaptability (Chung and Kim, 2003, 587-603). Exceptionally, a firm can collaborate with competitors if pursuing a basic research and when establishing common standard or sharing and solving a common problem that is beyond the competitor's zone of influence, for example, a regulatory change. Nevertheless, collaborating with competitors may not be imperative as appropriate mechanism due to the problems of information leakage and risk of hold-up (dependent on a partner) that is inevitable. This may then cause a tip off of firms' cost-benefit analysis against collaborating with competitors when targeting product innovations, usually with high degree of novelty.

In recent years, research organizations (ROs) and Universities are now part of innovations process in product development by working closely with firms to carry out projects that will provide new scientific and technological knowledge that will not only instil business performance but also industrial growth in the society (Tether 2002, 947-967.) On this basis, in order for Universities to fulfil their research goals, they are encouraged to collaborate with industry or business organisation so as to be funded in their research projects which could bring symbiotic benefits. Conclusively, research organizations (ROs) are thus considered as the most effective way to achieve product innovations projected towards opening of new markets and segments. In like manner, the probability of achieving product innovations with higher degree of novelty is more certain when firms form partnership with its interest groups (clients and suppliers) than collaborating with competitors with least minimal effect on new product innovations.

Lastly, inasmuch as firms' collaboration with partners may intensify efforts to achieving and sustaining innovation argued that prolong alliance with same partner for information will only provide redundant or narrow information, and that could further cause hold-up (Hoecht and Trott 2006, 572-681). To this end, firms are advised to collaborate with diverse partners for a wider wealth of experiences (Anand and Khanna 2000, 295-315). The bottom line is that there will be significant impacts on the degree of novelty with a firm networking with more range of partners (heterogeneous network).

3.4 Pathway to New Product Development (NPD) Process

It is researched that there cannot be product innovation without new products following development process. This process is important in deciding the probability of success or failure of new products outcome (Iwu 2010, 2662). The process is a concept called new product development (NPD) model, and it is therefore a process by which the concept of developing new products is implemented in stages from idea generation to products launch (Voss 1994, 461). This model encapsulates all what have been mentioned previously in relation to sources of ideas, design and launching of new products. As a result, there are 8

phases involved in products development process, and these are represented using NPD model theory as explained below:

Idea Generation

This is the act of gathering different visualized open ideas together from creative thinkers both within and outside the organization. It goes beyond personal perspective because it requires market research techniques and analyses, collection of market data on competitive product development sources, customer's feedback based on the existing or desires for another trendy product (Kotler and Armstrong 2009, 283). The company marketing team also plays a significant role in this area through R&D. According to creativity concept, about 99% of ideas is obtained through perspiration but only takes 1% of inspiration in new product development. However, idea generation is a continuous exercise in any organization as there will be need to create competitive advantage in the market environment through provision for unique product development.

Idea Screening

This is consequent on the various ideas obtained. In this case, the ideas are evaluated and carefully selected to specification based on the feasibility overview by the top designing or product oriented managers. They try to figure out a forecast about the product potential sales, production cost, price matrix and its profitability ratio, including its competitive edge over competitors' products and their reactions (Kotler and Armstrong 2009, 286).

Concept Testing

It is carried out amidst marketers, sales representatives, distributors and even part of prospective customers to determine how the demands and supply can be, the level of price and volumes of sales in the target market. The most important thing is that, the company is able to know what is good and bad about the proposed product before being launched to the market through customer's feedback. As a result of this, it is at this point that the company

would know if the idea is worth selling to the market or not (Kotler and Armstrong 2009, 286).

Business Testing

Once the managers hold on to a proposed idea, the company itself also try to take into account the significance of the product with reference to company mission, vision and goal. This is to measure viability of the product idea to the company's strategy, best line of production, purchasing personnel and some other external analyses of distributors and customer groups (Kotler and Armstrong 2009, 288).

Product Development

The idea being validated is therefore considered worth developing by instructing their R&D teams to make initial prototype or design and more so, drawing of marketing plan by the marketers. The customers thus have the opportunity to contribute their inputs by having a feel of the real product and its marketing mix (price, advertising and sales outlets). The customer's comments about this help the company and the marketers to make good decisions towards product usage and price offers (Kotler and Armstrong 2009, 288).

Test Marketing

This stage involves launching the product in a small city or market centre whereby the product made is displayed in a shop by agreement with a distributor for customers' patronage. Since the product is new, it takes extra efforts for the marketer to convince and initiate purchase in that regard. However, in some cases, it is found out that distributor's acceptance is subjected to being paid to, before granting space in his/her outlets (Kotler and Armstrong 2009, 291). This kind of testing may be done at certain strategic market segments so as to know where there are huge demands for such product, though this is dependent upon product types either as tangible goods or services.

Commercialization

The moment the test marketing is carried out, marketers would then become aware of those concentrated areas that are experiencing huge demands for their product. What will follow is that the concern company would therefore deem it fit to roll out or launch this product in large volume to those places to meet the needs of the customers (Kotler and Armstrong 2009, 292).

Monitoring and Evaluation

As soon as the new products gained market interest and share, it is considered imperative that they are able to follow up the product performance, monitor sales and generate customers' feedback in order to continually meet the desires of their customers (Kotler and Armstrong 2009, 292) by newer product development. However, new products introduced to the market would still need some time to undergo adoptions at large scale in the markets.

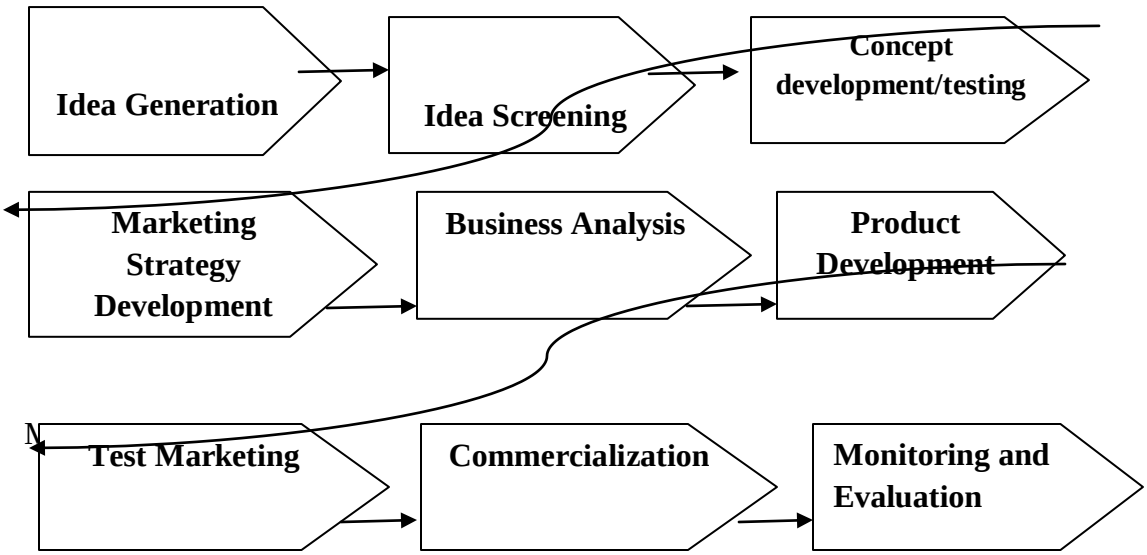

Figure 3. Stages in New Product Development (NPD) Model Process.

(Source: Kotler and Armstrong 2009, 284-285).

3.4.1 Characteristics of Successful Product Development

It has been established that product development is concerned with the activities geared as a result of market perceived opportunities that leads to production, sale and delivery of a product (Iwu 2010, 1). The economic success of a firm depends on its ability to identify customer's needs and speedily develop products to meet them. Thus, marketing facilitates identifying 'customer needs'.

Successful product development entails products that are developed and sold profitably, which does not necessarily have to be spontaneous because the benefits of the product performance in terms of monetary value or measure cannot be immediately assessed. In view of this, the success of any new products development will be considered based on the following variable dimensions (Iwu 2010, 2660).

Product Quality

It involves measuring the good level of the product based on the development effort, satisfaction of customer needs, robustness and reliability of the product to be sufficient enough to gain market share and still be affordable for customers to pay for it (Iwu 2010, 2660).

Product Cost

It deals with the cost of producing the product or providing the service, such as cost on capital equipment and tolls, as well as unit production cost of each product. In essence, it gives an estimated or forecasted profit on sales or offering of the service to the potential customers at a particular price (Iwu 2010, 2660).

Development Time

It describes the extent by which the team combines efforts to complete the new products development. It also avails the company to be responsive to competition in its environment and its degree on technological development in time frame, in order to receive economic returns in compensating team's efforts (Iwu 2010, 2660).

Development Cost

It tells about the amount of money required to develop the product, which should be sufficient enough to develop the new products, since the development cost is a part contribution for the new products to generate profits (Iwu 2010, 2660).

Development Capability

In the fast moving changes in market and upward trend in technological innovation, the firm's team capacity must be measured to determine if team is able to pursue and develop future products development project. This is believed to be a resourcing asset that firms can use in developing new products more economically and effectively in ensuring continuous changes and upgrades in their innovation development (Iwu 2010, 2660).

3.4.2 Factors that Fosters Successful Product Innovation Development

There are substantive practices which are summed up to be factors or elements that identify good products concepts being innovated by organizations; and enabling them will assist companies' to curtail or minimize risks on business projects, specifically those involving new products development. According to Cooper (1999, 115-33), he conceptualized these seven practices as seven actionable critical success factors that determine product innovation performance (Pitta 2008, 1), which are described as follows:

Background up-front feasibility

It is the act of identifying the product of interest; define the purpose why and how it needs to be developed and justify its development through its level of substance or value (Pitta, 2008, 2).

Seek Customers Opinions

It is pertinent to investigate the target market of the business, so that the need and value for the proposed products will be suitable or fit into the markets. The firm could therefore involve in consulting the customers to provide inputs throughout the products development stages, especially those without technological complexity (Pitta 2008, 2).

Establish the Product Positioning

The development of new products must be competitive enough to offer superior value for the customers, such that its benefits are unique; thereby making the products to be differentiated from other existing ones in the market (Pitta 2008, 2). Therefore the essence of product innovation is to create strong competitive advantage and market positioning for new products, which must of course be valuable to warrant demands, and also most beneficial to meet the user's needs.

Early Creation of Simple and Stable Prototype

The sample of the products must be created in its simplicity, so as not to expend too much cost on it, since it is not yet original but prototype. Some companies tend to incur unnecessary money, efforts in its design and time to make it look original (Pitta 2008, 2). Due to this, it results to waste of resources, for example in technology or complex product's design.

Execute Solid Resource Planning

In any case of handling projects or engaging in products innovativeness, organization must have clear feasible plan and thorough insight concerning those challenges that may crop up before completion and market availability. This will intensify innovation efforts not to be impeded by those road blocks that could obstruct or pose barrier to successful products launch. These issues of concern can be tied to complexity of new channels of transportation and distribution, sources of financing, pricing and modes of advertising (Pitta 2008, 2).

Employ Firm and Star-gates Decisions

This is based on Cooper's seminar concept, which deals with filtering out those weaker products that may stand against the development of the desired new ones (Pitta 2008, 2).

Effective Leadership and Alignment Coordination of Teams

Stephan H. Thomke, the William Barclay Harding Professor of Business Administration at Harvard Business School says that "*Good leadership fosters the capacity for action, stimulates creativity and motivates new ideas*", he added *"leadership is critical to moving from innovation to product development to execution*". On this note, in a bid to foster successful innovation, there must be effective leaders; who will be able to connect the dots during innovation activities and influence the cross functional teams to communicate well with them, and more so align their capabilities and skills in the right direction of the project; mainly for the purpose of fostering products innovation success and organisational business performance (Pitta 2008, 2).

Leadership is therefore seen as a means of modelling innovative behaviour of employees, thus creating a culture of innovation in the organisations. In essence, leadership is considered as a driver of competitive advantage (Thomke 2010, 1) and process change within and outside the organisation. However, leadership effort must equally align with organisational culture to instil more outstanding product innovation development.

Organisational Culture

Culture is regarded as a stimulant of innovative behaviour amongst employees, since it influences them to accept innovation as a core or basic value of the organisation, which thus make them feel more involved in the business (Hartmann 2006, 159-72). The culture is referred to as values, beliefs and hidden assumptions that organisational members have in common. Martins and Terblanche (2003, 64-74) identified the need for socialisation and coordination of individual employee to enable them develop the acts of creativity that is required to cultivate innovative behaviour by engaging them in activities that will influence and shape them towards developing capabilities for new products development.

Following the whole ideas discussed as indicators of a successful product innovation, these can therefore be conceptually presented by the use of diagram, based on the outcome variables considered by the researcher in developing new products.

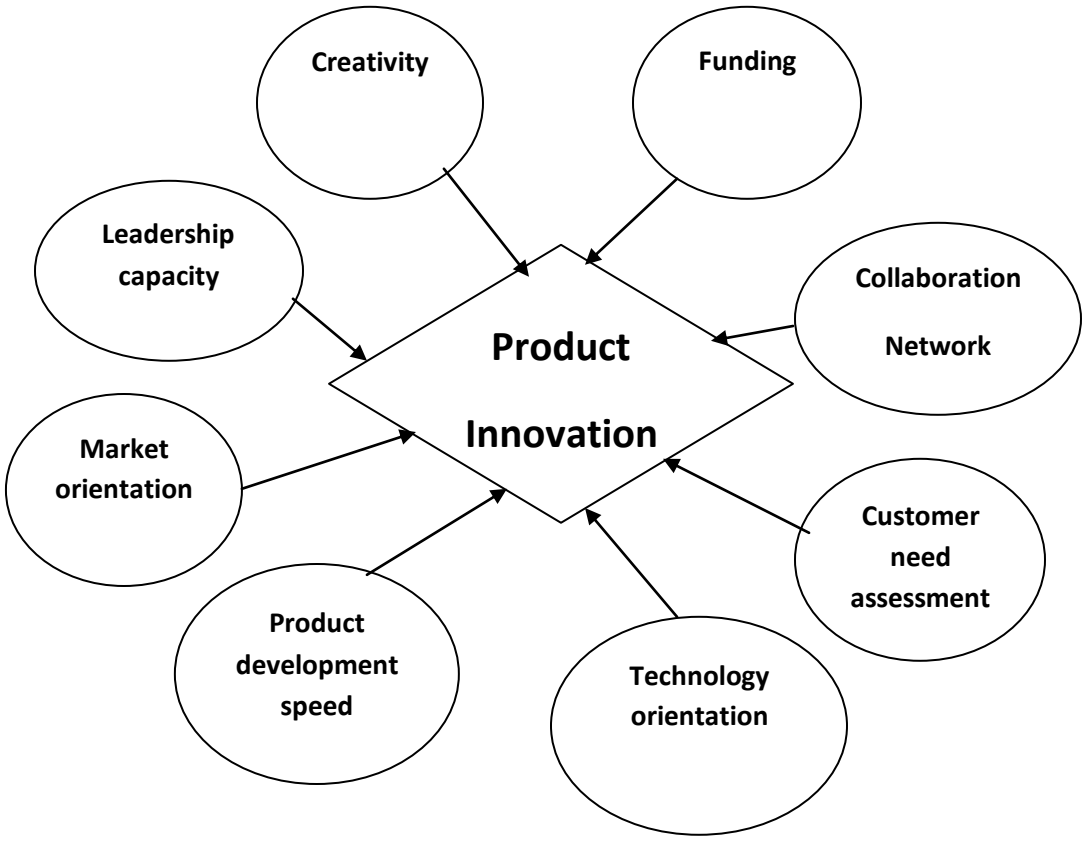

Figure 4. ***Conceptual relationship on factors for successful product innovation.***

3.4.3 The Conditions to Implementing Product Innovation

For new products to be described as innovative in the markets, it must bring novelty. It means that the products either as services or physical goods must offer unique benefits, which should be noticeable and appealing to stimulate demand. In the same way, it must have value that will assure customers/consumers that the products actually worth its monetary costs. The reason being that no matter how innovative and useable new products are; the commercial price must be commensurable with what the buyer is willing to pay. If not, this will amount to failure in generating high turnover in the markets. Sequel to this, a company must allow its producer to cover the cost of produce and generate sufficient profit (Thomke 2010, 2).

4 CASE STUDY AND INTERVIEW FINDINGS

4.1 Introduction to the Company

MHG Systems Ltd Oy is a small and medium size enterprise (SMEs), which was founded in 2005 as an information technology service firm. The company specialises in offering business enterprise resource planning systems (ERP) and an ICT solutions to managing field work, specifically on business models majoring on international bioenergy and forest industries' applications; others include waste, energy, biomass and biofuels (MHG Brochure, 2008).

The company's expertise in providing the above solutions is to improve independent business networks, and enhance its competences and competiveness on the fast growing bioenergy markets. The core values of the business solution models are to optimise customers' resource utilisation rate and increase their know-how on materials' quality characteristics.

"MHG ERP synthesizes mobile communications, the Internet, real-time maps, and satellite-based location information into one business-enhancing service and allows the use of new and especially contract-based and empowering operational models. The company's services bring significant cost savings to all operators in the bioheat, bioelectricity, and biofuel production chain. The MHG platform service allows development of new, empowering operational models resulting in paper-free office and field work. Customer solutions are created from MHG's ERP building blocks and delivered as turnkey solutions – or the service can be used on an ASP basis".

(URL>http://www.mhgsystems.com/images/pdf/mhg_pitch_en.pdf, 08.03.12).

The MHG ERP platform is a service platform where the enterprise is able to promptly customise different type of applications to suit full range of needs in relation to field work management control (see URL> http://www.mhgsystems.com/images/pdf/mhg_services_from_stump_to_boiler_and_more_2011_24_07.pdf, 07.03.2012). The platform functions as user management, management of customer data and customer site information, task management, work order management, field depot management, sending and receiving mobile messages, site management and generation of basic reports. MHG ERP platform is scalable for installation with the required features in the customer's existing IT system as a turnkey solution or as a separate service system. The platform therefore works seamlessly with national raster-based maps, professional Google Maps products and remote sensing maps thereby enabling global services.

4.2 Research Methods

The research considered using explorative research which deals with finding secondary information data through proper consultation and acquisition of relevant information materials. The researcher adopts the use of qualitative, and not combined with quantitative research due to the limited use of one company as a sample size; instead of two or more companies to obtain more sufficient information, in terms of multiple survey questions. The use of both primary and secondary research types of data collection is used by the researcher. The primary mode of collection is obtaining information by examining the research focus in a case company.

In this case, how product innovation at MHG Systems affects its competitiveness and in turn generates sufficient profits is investigated. To begin with, the researcher made use of available information on the company's website and brochures to gather necessary information before conducting a survey - personal interview with the CEO/Managing Director of the company, with little elements of in-depth interview. Meanwhile, the secondary information collected was based on someone else material information already

on literature review, usually the primary research of other academicians or authors written to be a source of information to other researchers. This research thus encompasses the usage of such theoretical knowledge to draw inferences in complementing researcher's thesis topic.

However, there would not have been interviews with the case company without their consent. The researcher wrote a letter to MHG Systems Oy Ltd on Tuesday, 21 February 2012 at 12:57 pm, which was addressed to Chief Executive Officer and Innovation Manager (CEO)/Managing Director (MD), Information Technology Expert in the company. On this basis, permission was granted on Wednesday, 22 February, 2012 at 09:31am and case materials were given and accessed afterwards. The interview was carried out on Wednesday, 7 March 2012 at 5-7:30 pm.

4.3 Interviews Research Analysis

The theme interview questions were structured as follows: basic situation information, innovations of MHG Systems, significance of innovation of the company, description of research and development activities, innovation process, innovation co-operation, product development, factors stifling innovation, sources of innovation and product adoption process. Each heading therefore composed of many important questions, which are of high interest to the scope and objectives of the researcher. Although some secondary information has been collected via the company's website portal and brochures, including other provided information sources or links, nevertheless, the personal interview pops up details and not-so-public information to the researcher.

First, the background information reveals that the company offers Service as a product through development and provision of Business Model Solutions to its target markets in forest management, feedstock management and biomass management. The main business model solutions services are in the developing and providing enterprise resource planning (MHG ERP) and ICT tools, with integrated solutions in bioenergy, power, and forest,

terminal, recycling and invoicing. The company is a small and medium size (SME's), and has 7 employees in 2007 and 10 employees in 2011. MHG Systems is considered big in Europe to be offering biomass and feedstock business enterprise solutions, even as a growing company in Finland.

Secondly, concerning the innovation of MHG Systems, the research established that the most successful innovative business solution developed is MHG Bioenergy; which is a new enterprise resource planning software solution to help biomass energy companies manage their businesses. It was developed in 2008 after 3 years in operation. Though the company also developed add-on tool, called MHG invoicing which is new but works to help MHG Bioenergy ERP in invoice paper documentation and tracking to manage fieldwork supervision - a supplement for physical presence to ensure close monitoring and efficiency of workers.

The novelty in MHG Bioenergy technology is its seamless function and integration with mobile technology, geographical mapping and fieldwork tracking, most especially the seamless technology of detecting biomass moisture content in a particular fieldwork area without actually being there to test the green site. This system solution is believed to be a unique system on its own, which is deemed to be a model business solution ahead of competitors. Though the business itself is generic, comparing the solution of what SAP and Cisco provided, but this system has a mobility service advantage when compared to other contractors. Traditionally, enterprise planning (EP) and Enterprise Resource Planning (ERP) Systems does not have mobility technology and fail to enable new business models. The business solution is therefore guaranteeing scalability to be used either as new or as part of many business models. In like manner, the company has also developed ERP Invoicing.

Thirdly, regarding the significance of innovation to the company; MHG Bioenergy ERP has moisture monitoring algorithms which is very new to energy supply chain in energy field. The product is perceived by customers as very innovative and more awareness is in top gear to gain global dominance. Mr Seppo Huurinainen says: "...biomass or feedstock business is

like a baby – very young". Hence it will take some time before the business model solution finds its feet in wider global energy markets. Above all, it is close to achieving universal selling position (USP) in Russia and Poland. However, it was stated that it has not turned into cash flow owing to poor contractors and delivery quality in these places. The factors will therefore affect the speed of innovation delivery in these countries, because "innovation is not about the product itself but the process as well", Mr Seppo Huurinainen adds.

Further, the aspect of description and development activities indicates that 90 percent of workforce is involved in innovation activities within the company. Thus innovation activity takes place very regularly all year round in order to keep up with the pace in technological development. In 2007, 90 percent expenditure spending is on innovation of new products, whereas 60 percent was spent on innovating new solution models in 2011. The lower rate is attributed to time schedule needed to generate sales after the product development. Customers are therefore not exempted during the process of developing new business models so that the new business models can offer more benefits sought solutions, which will be easy to use for customers, regardless of region. The system functionality is automated and less technical but easy to use.

Based on innovation process of the company, creativity is considered significant for new technology development. This is to develop new business models with superior features against competitor. The working culture is very relaxed and thus encourages productive motivation and committed employees, because they are being treated as part of owners. In terms of leadership and management, there are employer-employee relationships which have equally fostered business success. This therefore has strong impacts in influencing MHG System's business performance. The company was ranked top 10 green ICT in Finland. For instance, one single manager succeeds in managing in real time operations supply chain, outsourcing feedstock procurement and deliveries of biomass feedstock's flow as source of electricity for 70,000 homes. The company thereby controls efficiently the supply chain delivery systems, through cloud computing and tracking.

MHG Systems is partnered with Logica Oy and Protacon Oy - IT and biomass expert in order to optimise utility through different kinds of business and feed stocks. It should be noted that the business model is based on agents outsourcing. However, the fewer number of employees are being well trained and the company could find expertise wanted through their ERP integrated system with Logical, having 40,000 employees.

Moreover, in the beginning of product development process; MHG Systems hired software developers. MHG Systems is using Scrum method in the quality of the code for software developers to produce new features very fast. As per supports received, TEKES gave 100,000 Euros as start-up grant in 2005 for the establishment of the company. Other fund loaned was 200,000 Euros for Bioenergy ERP internationalization of the company. The sum of 111,000 Euros was also used to hire software experts. The venture capitalists also fund the company. Most importantly, MHG Systems has ERP in mobile technology and geographic mobility combined with its moisture content detection, which is considered as most innovative business model solution in bioenergy market.

4.4 Research Limitation

The challenges encountered can be attributed to cost, time and getting material information for the proposed subject. Most useful material information demands payment for access because of non availability at the school library resource. And due to my financial status, it posed barrier to getting access to them. I had to use other university library resource and Google scholar and the likes to obtain more useful information.

The time spent on the research work exceeded farther than what was actually planned due to my Erasmus program to Ireland. But the most identified time constraint factor was getting case companies to use for the research. I wrote about 20 companies to be used for the research purpose but unfortunately none of them replied. Few replied initially but they later stopped communicating. Hence it affected my plan to use two case companies rather than one that was used in this research. This issue was therefore the most difficult hurdle in completing this research.

However, the subject of innovation is very wide based on my research; as it cuts across marketing innovation, process innovation, and digital innovation and so on. Owing to this, in order to zone in on a narrow angle; that is why I resorted to researching on product innovation segment. Though process innovation may be considered as a leading factor to product innovation, but in this research; I decided to narrow it to the product itself and not its process which is equally wide in its own right.

5 CONCLUSION/RECOMMENDATION

The researcher's interest is to demonstrate the significance of incorporating innovation to business processes, which is found to be the new trend few firms are adapting purposely for creating unique business advantage. Innovation was described as an act of generating ideas, accepting it and implementing the new ideas, as processes or services (Jukola, 2010, 12). But the concept of this research is focused on product innovation, as the dominant mode of innovation (Porter 1998, 194). Following previous discussion, it is not only that product innovation contributes to improving business performance, but it is a strategy to respond quickly to market dynamics (Hoskisson and Hitt 2007, 35). It was also revealed that innovation may occur in gradual processes or changes, which was called incremental innovation. When it occurs spontaneously or completely novel, it is known as radical innovation. A firm therefore adopts any of these or perhaps combine the two depending on their business strategy in the market.

In that regards, firms therefore engage in competitive actions that will enable them to gain customer loyalty and market shares. The creation of new products or process (Hill and Jones 2007, 90) by company is to fill the gap among competitors and be differentiated by identifying and satisfying their customers in a more unique way. Inasmuch as product innovation generates the highest revenues for a firm, engaging in it without proper needs, clear definition or high importance based on customers' needs will fail to produce results. In spite of this, firms must understand their business industry, competitors and customers before strategically engaging in productive innovation performance.

According to research, there is link between innovation performance and firm's performance. Thus, the success of innovation excellence in the context of product innovation is dependent on the key factors of firm's innovation capabilities, such as embracing creativity, knowing customer needs, collaborate with partners but choose the right partners. The choice of partners is considered as a way to harness resources required to effect changes through new ideas and new products development. However, failure to acquire enough resources for developing new products and observe going through new

product development (NPD) process may cause poor product quality, consequently reducing or sabotage firms' competitive efforts and actions in market developments.

The objective of this research is therefore to show the significance of applying the knowledge of innovation to firm's tangible or intangible product in terms of physical goods or services. It is also to research into literature reviews on what product innovation is and to get the knowledge on how it could be apply to instil product performance and most especially using it as a strategy for firm's competitive advantage. In order to achieve this objective, the use of explorative qualitative research is carried-out. The researcher used survey techniques through the design of open-ended questions to carry out personal/in-depth interviews with the case company, MHG Systems.

The findings based on service innovation at MHG Systems showed that the company understands its market environment and the gap in the competitors' (SAP and Cisco) business model solutions to develop its own innovative MHG Bioenergy service business model. The research result revealed that the company's most innovative product is MHG Bioenergy business model. The innovativeness in MHG Bioenergy is its seamless function that is integrated with mobile and geographical technology to detect biomass moisture content without actually being on the vegetation field to carry out physical detection but rather through MHG ERP improved technological innovations. The MHG ERP itself is also of great importance in optimising feedstock management process or supply chain of their customers; thus allowing smooth and fast prediction on strategic decisions making before execution in real time operations. In addition, the development of Bioenergy ERP has enabled the company to generate substantial profit and win national and European awards to recognise them for their significance contribution for offering innovative green ICT enterprise model solutions. In view of this, the company was ranked one of the top ten among 650 entries in the prestigious Logica Global Innovation Venture Partner competition held in Stockholm for its value added Bioenergy ERP (URL> http://www.european-times.com/sector/energy-basic-materials/mhg-systems, 07.03.2012).

To this end, the result findings through the interview conducted and inferences drawn on this case study ascertained that product innovation is really significant to any firm willing to

survive intense market pressures, create a competitive product advantage and ensure continuous growth.

However, the reliability and validity of this finding would have been more profound had it been that two or more companies are used as case study in the same business field. It may therefore be necessary to have more validated result or information about impacts of integrating product innovation as a driver of business performance and competitive strategy in business environment. Nonetheless, based on this immediate study, product innovation is deduced a driving force to creating both product and business advantage, which thus speed up business performance.

The Thesis work has shown the importance of product innovation and why firm must integrate it to their products. The research will also be useful for an individual, group, and private, public and most suitably for small and medium size enterprises (SME) and entrepreneur to cultivate the ability to self-reinvent through innovation capability, mainly to grow their business; increase customers or consumers, enhance customer loyalty, and gain positioning in the market. Since lots of reference is made to customers in this research, further research can be explored in the area of marketing innovation to see what could be differently adapted to influence consumer's behaviour and consumption pattern.

Marketing innovation could dig out useful information on market development and changes in product innovation programs that may provide far-reaching and penetrating insights into the prospective demands of customers for changes in product attributes, product-mix and supporting services along with associated price and quality constraints.

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Ruslan Pisarenko, IT Expert. MHG Systems Ltd Oy, Mikkeli, Finland.

APPENDIX: INTERVIEW QUESTIONS

Dear Sir

I am Matthew O. Ajimati, a Bachelors' Degree student in Business Administration at Savonia University of Applied Sciences, Varkaus Campus, Finland. I am writing my Thesis on "The Significance of Integrating Product Innovation in Increasing Business Competitions". I therefore seek up-to-date information about your knowledge and expertise on the impacts of product innovation at MHG Systems Oy Ltd. Any information given will be kept confidential and shall be used solely for the purpose of this research. Your immense contribution will highly be appreciated.

BACKGROUND INTRODUCTION

Name:

Position:

BASIC SITUATION INFORMATION

Product innovation entails new or entirely improved goods (energy equipments, mobile telecommunications gadgets etc.) or services (software applications, business solutions etc.) introduced to the market. The innovation is perceived to be based on new technological developments, new combinations of existing technology or utilization of customer's knowledge and the likes.

The main purpose of the research is to establish the importance innovation plays in developing new products to a firm's business performance over its competitors. The researcher is therefore interested in products new to your firm, even if available on the market and more so, those that are new to your market.

1. How would you describe your firm's main products, knowing that your firm offers Bio energy ERP, MHG Power, MHG Forest, MHG Terminal, MHG Recycling and MHG Invoicing?
2. Basic economic information about the firm
   2.1. Exports of goods and services: 2007: 2011;
   2.2. Capital expenditure:
   2.3. Number of employees:
   2.4. Is your firm the largest market?

3. INNOVATIONS OF MHG SYSTEMS

3.1. What is your most successful innovative product over period of 2007-2011?
3.2. When was this new product launched to the market?
3.3. During the year period 2009 – 2011, did your firm introduce any new or significantly improved products, which were also new to your firm's market?
3.4. What makes this product innovative as compare to ones in the market

4. SIGNIFICANCE OF INNOVATION TO THE COMPANY

4.1. Do the products generate high sales revenue to the firm?
4.2. How would you describe the level of customers/consumers' demand for these products?
4.3. Does the product get a unique selling position in the market?
4.4. Is there any improvement in your business performance since you introduced new products?
4.5. Please describe briefly the effects of your innovation activities relating to quality, production, capacity, labour costs, and material or energy reduction.

5. DESCRIPTION OF RESEARCH AND DEVELOPMENT ACTIVITIES

5.1. How many employees were involved in R&D activities within your firm in 2011(in full time)?
5.2. How did your firm engage in R&D during the five year period 2007-2011? Continuously or Occasionally? In number's please!

6. INNOVATION PROCESS

6.1. Does your firm involve its customers' or clients in developing new products? Explain briefly

6.2. Does your firm consider creativity as a critical factor to your new products development?

6.3. If yes to 6.2, in what way has it contributed to product success?

6.4. Do the firm's strategic planning supports your innovation activities or projects?

6.5. Does you firm's climate play a role in your new products success? Explain briefly

6.6. In what way have leadership and management in your firm affects business performance?

6.7. Please give a short description of your most important process innovation (either through the use of new or significantly improve technology for production or supply of goods and services?

7. INNOVATION CO-OPERATION

It means active participation in joint innovation projects (including R&D) with other organisations.

7.1. Do the firm engage in collaborative efforts with other organisations to achieve products success? With who please?

7.2. Did your firm receive any public support (financial or others means) for innovation – related activities in the period 2007-2011?

8. PRODUCT DEVELOPMENT PROCESS

8.1. Do your firm consider ISO 9001 quality assurance during your new products development?

8.2. How has distribution of resources, in terms of funding and employees' knowledge and skills affects new products outcome?

8.3. What role does marketing play in your new products development?

9. FACTORS STIFLING INNOVATION

A range of factors may impede firm's ability to innovate.

10.1 Please mention the factors that have affected your firm's projects performance?

10.2 Which of these would you regard most?

10. SOURCES OF INNOVATION

10.1. Please indicate the sources of knowledge or information used in your technological innovation activities.

10.2. What is their importance during the period 2007 – 2011(competition, consultants or clients, suppliers of components, equipments or software)

11. PRODUCT ADOPTION PROCESS

11.1. How quick potential customer does adopt your new products?

11.2. How many patents, if any, did your firm apply for during the last four years?

12. Am I permitted to publish your firm's background information in my Thesis?

Thank you for your knowledge, precious time and cooperation!


SAVONIA