

Full Length Research Paper

Impact of product development and innovation on market share

Chux Gervase Iwu

Faculty of Business, Cape Peninsula University of Technology, Cape Town, South Africa. E-mail: iwuc@cput.ac.za.

Accepted 7 September, 2010

This study was conducted to identify the relationships between increase in market share through product development and innovation. Many studies have been done on the concept of product development and innovation and much of what has been written tends to discuss this concept as a veritable tool for improving the life cycle of a product without substantial relation to market share enhancement. The population from where samples (respondents) were drawn included product developers, marketers, advertising practitioners, and salespersons in organisations and direct sellers of commodities. There was need to visit the salespersons of organisations and direct sellers so as to ascertain if motivation existed in selling, and if selling more arises from the introduction of a new product or new uses for a product. Direct sellers were interviewed to ascertain if there was any correlation between higher profits and the introduction of a new product and/or new uses for a product. Questionnaires, interviews and direct observation (when new products are brought to the attention of direct sellers and salespersons) were the techniques used for data collection in this study. Direct sellers were observed to underscore their joys and/or disappointment at new products. The results of the survey were interpreted using the Likert model through SPSS analysis, as it is the case with this type of investigative research. Also, recommendations and conclusions were made based on the findings, and conclusions were drawn highlighting the main issues of the study.

Key words: Product development, product innovation, product quality, product life cycle, market share, globalisation, test marketing, promotions, marketing, customer needs.

INTRODUCTION

A business exists to satisfy customers while making profit. Fundamentally, a firm fulfils this dual purpose through its products. New-product planning and development are vital to an organisation's success. This is particularly true, which is now given as (1) rapid technological changes, which can make some products obsolete, and (2) the practice of many competitors to copy a successful product, which can neutralise an innovative product's advantage (Cooper, 1994; Veryzer, 2003)

A product is something that is sold by an enterprise to its customers. It can be referred to as goods (physical, tangible products), services and/or intangible products such as software (Saaksvuori and Immonen, 2004). Product development is the set of activities beginning with the perception of a market opportunity and ending with production, sale and delivery of a product (Ulrich and Eppinger, 2007). Product development demands the

integration of many actors' of different knowledge and expertise in order to develop a high-technological product (Dovey and White, 2005)

The economic success of firms depends on their ability to identify the needs of customers and to quickly create products that meet these needs. Achieving the goal of satisfying the needs of customers is not solely a marketing problem, nor is it solely a design problem or manufacturing problem; it is a product development problem involving all of these functions (Ulrich and Eppinger, 1995).

Who designs and develops products

Product development is an interdisciplinary activity that requires contributions from nearly all the functions of a firm; however, three functions are almost central to a

product development effort. These include marketing, design and manufacturing (Ulrich and Eppinger, 1995; Synthesis Coalition, 1998).

The marketing function mediates the interactions between the firm and its customers. Marketing often facilitates the identification of customer needs. Marketing also typically arranges for communication between the firm and its customers, sets prices, and oversees the launch and promotion of the product (Ulrich and Eppinger, 2007).

The design function leads the definition of the physical form of the product to best meet customer needs. The design function could be engineering, industrial, promotional or all of the above (Ulrich and Eppinger, 1995).

The manufacturing function is primarily responsible for designing and operating the production system in order to produce the product. Broadly defined, the manufacturing function also often includes purchasing, distribution and installation (Ulrich and Eppinger, 2007).

The challenges of product development

Developing great products is hard. Few companies are highly successful more than half the time and this is a significant challenge for a product development team. Some of the characteristics that make product development challenging are trade-offs, dynamics, details, time pressure, and creation. Others include satisfaction of societal and individual needs, team diversity and team spirit (Petrella, 1996).

Trade-offs deals with making choice between product specification and the impact of cost around the choice. Customer preference, competition, the environment and technology are all dynamic variables. These pose serious challenges to a product development effort.

Product development decisions must usually be made quickly considering the fact that products are meant to satisfy the needs of some kind. It is also necessary to understand that where product development is concerned, all hands must be on deck and this requires that product development teams are diverse and that the teams work with one spirit (Sethi, 2000). Sethi (2000: 4) also argues that a diversity of ideas and perspectives can create problems such as increased decision complexity and confusion.

Characteristics of successful product development

Successful product development results in products that can be produced and sold profitably, yet profitability is often difficult to assess quickly and directly (Ulrich and Eppinger, 1995). Five dimensions, all of which ultimately relate to profit, are commonly used to assess the

performance of a product development offer. These dimensions include product quality, product cost, development time, development cost and development capability (Ulrich and Eppinger, 1995). These are thus explained.

Product quality

How good is the product resulting from the development effort? Does it satisfy customer needs? Is it robust and reliable? Product quality is ultimately reflected in market share and the price that customers are willing to pay.

Product cost

What is the manufacturing cost of the product? This cost includes spending on capital equipment and tooling as well as the incremental cost of producing each unit of the product. Product cost determines how much profit accrues to the firm for a particular sales volume and a particular sales price.

Development time

How quickly did the team complete the product development effort? Development time determines how responsive the firm can be to competitive forces and to technological development, as well as how quickly the firm receives the economic returns from the team's efforts.

Development cost

How much did the firm have to spend to develop the product? Development cost is usually a significant fraction of the investment required to achieve the profits.

Development capability

Are the team and the firm better able to develop future products as a result of their experience with a product development project? Development capability is an asset that the firm can use to develop products more effectively and economically in the future.

Relationship between customer needs and product development

The process of identifying customer needs is an integral part of the larger product development process (Sethi, 2000: 5) and is most closely related to concept generation, concept selection, competitive benchmarking

and the establishing of product specifications (Dahan and Hauser, 2000; Lamb et al., 2006; Kotler and Armstrong, 2009).

Identifying customer needs is itself a process. Six steps in identifying customer needs are as follows (Perreault and McCarthy, 1996):

1. Define the scope of the effort: In defining the scope of the development effort, the firm specifies a particular market opportunity and lays out the broad constraints and objectives for the project. These will include a brief description of the product, key business goals, target market(s) and stakeholders.
2. Gather raw data from customers: Gathering raw data from customers is possible through interviews, focus groups, and observing the product in use. Some art will also be applied in the choice of customers. A customer selection matrix is useful for planning exploration of both market and customer variety.
3. Interpret the raw data in terms of customer needs: Customer needs are expressed as written statements and are the results of interpreting the need underlying the raw data gathered from the customers. The list of customer needs is the superset of all the needs elicited from all the interviewed customers in the target market.
4. Organise the needs into a hierarchy of primary, secondary and (if necessary) tertiary needs: The procedure for organising the needs into hierarchy is intuitive and many teams can complete the task without detailed instructions. However, it is advised that teams should write each need statement on a separate sheet and afterwards eliminate redundant ones and then group the list according to the similarity of the needs they express. At the end, the team might label groups and subgroups, and begin to synthesise the list in terms of hierarchy.
5. Establish the relative importance of the needs: Trade-offs, basic and concrete information from customers can make this process very easy to deal with.
6. Reflect on the results and the process: The team must continually challenge its results in order to verify their consistency with the knowledge and intuition the team has developed through several hours of interaction with customers (Perreault and McCarthy, 1996).

The research problem

Globalisation refers to the multiplicity of linkages and interconnections between the states and societies, which make up the present world system. It describes the process by which events, decisions and activities in one part of the world come to have significant consequences for individuals and communities in quite distant parts of the globe (Zainuddin, 2000).

Globalisation makes possible the design, development, production, distribution and consumption of processes,

products and services on a world scale, using instruments such as patents, databases, communication and other infrastructure (Elbeltagi, 2007; Buckley, 2009; Brentani et al., 2010). Products are geared to satisfy the increasingly diversified and customised global markets. Some examples of the kinds of intensive forms of interrelationships and integration that lead to production, distribution and consumption of global kinds of goods and services, exist. These include credit cards and cars (cars are no longer made in the USA, nor France and Germany, but more and more are made in the world)!

The research question

Does product development have any correlations to the increase in market share for a global marketer taking into consideration the fact that events, decisions and activities in one part of the world or in one part of an organisation would have a significant consequence for individuals and organisations?

Aims of the research

The basic aim of the research was to try and make a connection between product development and market share. The assumption here was that a strong correlation existed among improvements on a product, new product and new uses of a product on boosting market opportunities.

The researcher was concerned about this from the point of view that so much had been written about the concept of product development and innovation without a commensurate linkage of the concept to market share enhancement.

LITERATURE REVIEW

Competition is strong and dynamic in most markets. So it is essential for a firm to keep developing new products – as well as modifying its current products – to meet the changing customer needs and competitors' actions. Not having an active new product development process means that consciously – or subconsciously – the firm has decided to milk its current products and go out of business. New product planning is not an optional matter. It has to be done just to survive in today's dynamic markets (Perreault and McCarthy, 1996).

Not all organisations have new product departments or teams. Therefore, it is not listed as one of the four major functional departments. However, it is an important function in many firms and is usually located either within the marketing or operations department. Ideas for the major improvements or totally new products often come from external sources, especially potential customers,

and from all areas of the firm that will be involved with the new product (Lussier, 2000). Iwu (2009) discusses the role of customers in marketing management. He argues that customers of any organisation do contribute in concept development, production, marketing and purchase of goods and services. The roles of the buyer therefore, include (a) a declaration of the need for a service or product, (b) purchasing a product or service, (c) using or consuming a product or service, and (d) evaluating the benefits of a product or service for possible future use.

Confirming the role of customers in marketing, Cateora et al. (2009) insist that the degree of newness as perceived by an intended market has a huge significance in the acceptability or otherwise of a product in a market. They also argue that other factors such as the perceived attributes of the innovation and the methods used to communicate the innovation message contribute to a new product's acceptability.

Product development means offering new or improved products for present markets. By knowing the present market's needs, a firm may observe ways to add or modify product features, create several quality levels, or add more types or sizes by introducing new versions of popular programmes. Microsoft also develops other types of new products for its customers.

New products have impact on a product's life cycle. Each year, firms introduce many products that are basically refinement of existing products. So, a new product is one that is new, in any way, for the company concerned. A product can become "new" in many ways. A fresh idea can be turned into a new product – and can start a new product life cycle. For example, time-release skin patches are replacing pills and injections for some medications such as conception, rheumatism and arthritis (Perreault and McCarthy, 1996).

Also the latest South Africa's VW advert that has positioned CITI Golf as a car for all ages is a good example of a product development effort. This television advertisement shows old, retired males feeling a sense of 'cool' while in their Volkswagen Chico.

Variations on an existing product idea can also make a product to be new. *Oral B* changes its conventional toothbrush to include a strip of coloured bristles that fade as you brush, in that way, one would know when it is time to get a new brush. Even small changes in an existing product can make it new.

Identifying and developing new-product ideas – and effective strategies to go with them- are often the key to a firm's success and survival. But this is not an easy task. New product development demands effort, time, and talent – and still the risks and costs of failure are high. A new product may fail for many reasons. Most often, companies fail to offer a unique benefit or they underestimate the competition. Sometimes the idea is good, but the company has design problems – or the product costs much more to produce than was expected.

Some companies rush to get a product on the market without developing a complete marketing plan. But moving slowly can be a problem too. With the fast pace of change for many products, speedy entry into the market can be a key to competitive advantage.

New product development process

To move quickly and also avoid expensive new product failures, many companies follow an organised new product development process. These processes include (1) Idea generation, (2) Idea screening, (3) Idea evaluation, (4) Development, (5) Test Marketing, and (6) Commercialisation (Perreault and McCarthy, 1996). These are thus explained.

Idea generation

The goal of idea generation is to explore thoroughly, the space of product concepts that may be applied to meeting customer needs. Concept generation includes a mix of external search, creative problem solving within the team, and systematic exploration of the various fragments the team generates.

Idea screening

Idea screening or concept selection is the activity in which various product concepts are analysed and sequentially eliminated to identify one preferred concept. The process usually requires several iterations and may initiate additional concept generation and refinement.

Idea evaluation

When an idea or concept has been chosen, it is evaluated more carefully. For help in idea evaluation, firms use concept testing to get feedback from customers about how well a new product idea fits their needs. Concept testing uses market research ranging from informal focus to formal surveys of potential customers.

Development

Product ideas that survive the screening and evaluation stages must now be analysed further. Usually this involves some research and development and engineering to design and develop the physical part of the product.

Test marketing and commercialisation

A product that survives this far can then be test-marketed.

Oftentimes simulation tactics is used to test the market. At this stage, also, promotional activities can be used to test-market the product. If the product is seen as being able to do well in the market, it can then be mass-produced depending on the market strategy chosen by the firm.

According to Ulrich and Eppinger (2007), a well-defined development process is useful for the following reasons:

1. **Quality assurance:** A development process specifies the phases a development project will pass through and the checkpoints along the way. Assuming that these phases and checkpoints are chosen wisely, following the development process is one way of assuring the quality of the resulting product.
2. **Coordination:** A clearly articulated development process acts as a master plan, which defines the roles of each of the players on the development team. This plan informs the members of the team when their contributions will be needed and with whom they will need to exchange information and materials.
3. **Planning:** A development process contains natural milestones corresponding to the completion of each phase. The timing of these milestones anchors the schedule of the overall development project.
4. **Management:** A development process is a benchmark for assessing the performance of an ongoing development effort. By comparing the actual events to the established process, a manager can identify the possible problem areas.
5. **Improvement:** The careful documentation of an organisation's development process often helps to identify opportunities for improvement.

New product development: Total company effort

The task of developing new products should not be the prerogative of one department alone (Ulrich and Eppinger, 1995; Dovey and White, 2005). It should be the total company's effort. For any product development effort to be successful there must be solid management support. New products tend to upset old routines that managers of established products often try in subtle ways to maintain. So, someone with top-level support- and authority to get things done – needs to be responsible for new product development. In addition, rather than leaving new product development to anyone who happens to be interested, successful companies put someone in charge – a person, department or team (McAdam et al., 2008; Sarin and O'Connor, 2009).

Product development is guided by market needs. Many new product ideas come from scientific discoveries and new technologies. That is why firms often assign specialists to study the technological environment in search of new ways to meet customers' needs.

Ethical issues around product development

In the area of product development, management is expected to disclose all substantial risks associated with product or services usage, Identify any product component substitution that might materially change the product or has impact on the buyers purchase decision. Management is also expected to identify extra-cost added features.

Firms are also criticised for releasing minor variations of products that already saturate markets. There is also the dilemma of knowing when to release a new product for fear of being criticised for planned obsolescence.

Focus of the study

The study focused on:

1. The correlation between product development and improvement of market share
2. The correlation between product innovation and improvement of market share
3. The product development processes
4. The benefits of product development
5. The impact of promotional strategies on new products
6. Marketing opportunities in product development

RESEARCH METHODOLOGY

Research sample

A total of 80 subjects were spread across four different fast moving consumer goods (FMCG's) manufacturers, resellers, advertisement executives and salespersons. Resellers constituted most of the sample representing 38% of total population. FMCG's representatives constituted 40% of the sample, while advertisement executives and salespersons constituted 22% (Table 1).

Data collection

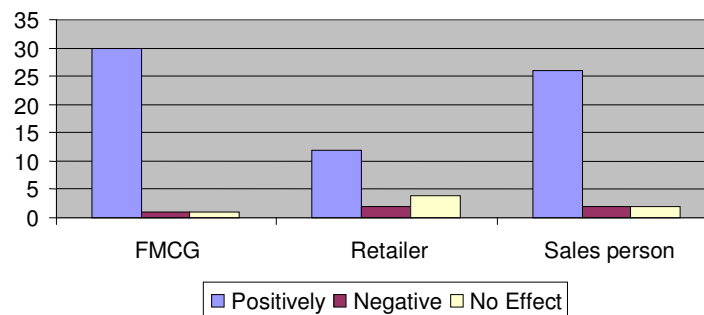
This research made use of certain tools such as questionnaires, interviews and direct observation (when new products are brought to the attention of direct seller and salespersons). Direct sellers were also observed to underscore their joys, and, or disappointment that comes with the introduction of new products. Salespersons provided information regarding sales of new products.

The population was chosen purposively from a pool of product developers, marketers, advertising practitioners, salespersons in organisations and direct sellers of commodities. Advert executives were sampled for their contribution in packaging the right messages for the organisations under review. It was also the researcher's interest to learn about the brief handed down by the organisations. Where some of the samples proved difficult to reach, questionnaires were sent to them. Follow-ups on the questionnaires were also done to clarify and/or remind some of the respondents about certain key issues.

The results of the survey were interpreted using the Likert model of survey analysis through SPSS. The research questions that were

Table 1. Descriptive statistics.

Variable	N	Minimum	Maximum	Mean	Std. deviation	Variance
Respondent	80	1	3	1.98	0.886	0.784
How has product Innovation improved new product quality?	80	1	3	1.24	0.601	0.361
Were customers involved in the innovation process?	80	1	2	1.04	0.191	0.037
How did product development improve product promotions?	80	1	3	1.10	0.409	0.167
Did product development improve organisation's team dynamics?	80	1	2	1.08	0.265	0.070
How did product development improve the sharing of knowledge in the organisation?	80	1	3	1.38	0.736	0.541

**Figure 1.** How has product innovation improved new product quality?

posed earlier were answered using data collected through the tools of research that were applied.

Measures

The measures that were examined included:

1. New product quality: New product quality was measured on the grounds that a new product may be considered to be superior to other competing products.
2. Customer's influence: Influence of customers on product development was measured with the hope that it would elicit the level of customer's involvement in product development.
3. Promotion: The impact of promotional strategy on product development was also measured to understand the kinds of control promotional strategies it have on boosting market opportunities for firms.
4. Opportunities arising from product development.

FINDINGS AND DISCUSSION

New product quality

An important determinant of a new product's market success and profitability is its quality, that is, the superiority of the product in dimensions such as appearance, performance, workmanship, and life/durability

(Aaker and Jacobson, 1994; Buzzell and Gale, 1987; Clark and Fujimoto, 1991; Garvin, 1988; Jacobson and Aaker, 1987; Phillips et al., 1983 in Sethi, 2000).

The organisations investigated the reported positive levels of quality as a result of the introduction of a new product. Rajesh however, adds that the role of product development teams in this regard must not be ignored. He posits that without a resourceful product development team, a new product objective can not be achieved (Figure 1).

Customers influence

The study also found that companies that listened to their customers achieved higher levels of new product acceptance than those that did not. This finding tally with SAPPHOR study of the 70's, which listed the following five factors as critical success determinants for new products: (1) Understanding of user needs, (2) attention to marketing and publicity, (3) efficiency of development, (4) effective use of outside technology and external scientific communication, and (5) seniority and authority of the managers' responsible for the development of the product (Rothwell et al., 1974; Rothwell, 1972).

Listening according to this study would involve (1) close

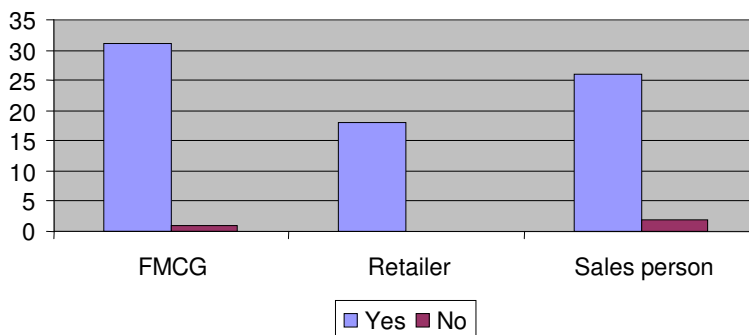


Figure 2. Were customers involved in the product innovation process?

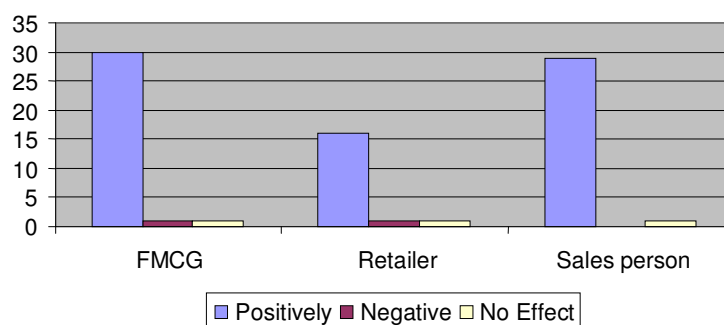


Figure 3. How did product development improve product promotions?

close proximity to consumers, (2) constant feedback on customer’s complaints, (3) attempts at personal calls to customers with urgent needs (Figure 2)

Promotion

Every business needs sales to stay alive. To do so, a healthy dose of advertising promotions is necessary. Advertising can be a good way to increase sales by telling customers about products and/or services. Promotions can take various forms namely offering of guarantees and discounts. All these must be communicated to the consumer.

The companies investigated reported high volume sales resulting from advertising promotions carried out in targeted journals as well as in-store. In-store, some companies make use of lightings and appropriate placements in their locations to attract customers (Figure 3).

Opportunities arising from product development

Product development presents numerous benefits to progressive organisations. Firstly, it helps in unpacking a few myths that tend to forestall risk taking. It also provides a staunch opportunity for knowledge management

– knowledge, which can be applied in future circumstances to the growth of an organisation (Figures 4 and 5)

The organisations study, confirmed that new product development process brought certain truths to the fore. It helped in fostering team alliance, while leveraging on the information provided by market intelligence.

Correlation between product development and market share

At the beginning of this paper, the objective was to see if there was a relationship between product development and market share (Table 2).

There is a strong correlation between the product quality through innovation and customer involvement; as well as between product quality through innovation and improvement in product promotions.

LIMITATIONS OF STUDY

The researcher envisaged that some factors would militate against this research. The factors that quickly came to mind were:

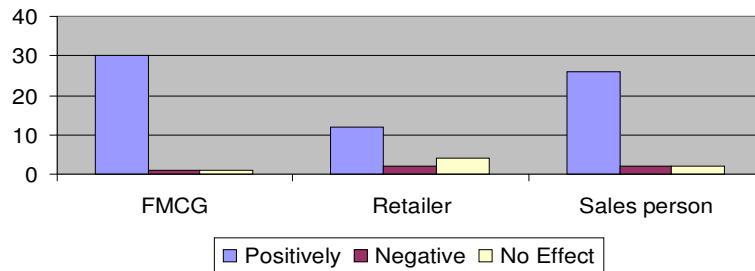


Figure 4. How did product development improve the sharing of knowledge in your organisation?



Figure 5. Did product development improve your organisation's team dynamics?

Table 2. Correlations.

		How has product innovation improved new product quality?	Were customers involved in the innovation process?	How did product development improve product promotions?
How has product innovation improved new product quality?	Pearson correlation	1	0.583**	0.315**
	Sig. (2-tailed)		.000	.004
	N	80	80	80

** . Correlation is significant at the 0.01 level (2-tailed).

Funds

A research of this nature would require serious financial support because for the researcher to get a wider audience to partake in this study, the researcher would need to get around to various provinces and also, if possible, travel beyond South Africa. It was imperative that diverse views were sought in order to arrive at a much more embracing conclusion.

Materials

This is obvious fallout from the need for funds. The researcher would need resources such as marketers, standardised reporting sheets for analysing samples, perhaps human support in the form of facilitators who

would distribute the questionnaires, and in fact, transportation to access certain remote areas. It was the understanding of the researcher that there are many stakeholders in a research of this nature. Product development is not just the sole responsibility of development experts, advertisers, management teams, etc. The individual in the street also helps to decide the kind of product that has to be introduced. Product developers tend to satisfy the individual's needs.

Time constraint

Considering the length of time for this sort of research, the researcher feared that monetary resources might hamper a diligent investigation.

CONCLUSION AND RECOMMENDATION

Engaging in product development and innovation can seriously drive performance in any organisation. Having said this, it is important to note that product development, product innovation and high levels of performance do not come easy. Progressive organizations must see product development and innovation as critical to their existence and competitiveness. Research has shown that product development and innovation initiatives are not just enough to secure that rewarding market share. Rather, a much more comprehensible alignment of factors, drive the product development objective to meaningful utilization of resources.

A number of significant lessons emerge from this study. These lessons seem to collaborate Cooper's (1979) findings. New product quality must be superior to other competing products in order for the innovating organization to reap the rewards of innovation. This research also establishes the significance of customer engagement in the process of innovation. The innovating organisation can also benefit from extended positive team spirit arising from the leveraging on information provided by market intelligence.

No doubt that the findings in this study can stimulate further research into the subject especially considering a larger geographical spread over the country.

REFERENCES

- Abediean I, Standish B (1992). *Industrial Strategy: Lessons from the newly industrialised countries in economic growth in South Africa*. Oxford University Press.
- Buckley PJ (2009). The impact of the global factory on economic development. *J. World. Bus.*, 44: 131–143.
- Cateora P, Gilly M, Graham J (2009). *International Marketing*. 14th edition: McGraw-Hill, Irwin.
- Churchill, Gilbert Jr A (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *J. Mark. Res.*, 16: 64–73.
- Cooper, Robert G (1994). New Products: The Factors that Drive Success. *Inter. Mark. Rev.*, 11(1): 60–76.
- Cooper RG (1979). "The Dimensions of Industrial New Product Success and Failure," *J. Mark.*, 43: 93–103.
- Cronje GJ (2007). *Introduction to Business Management*. 6th edition. Cape Town; Oxford University Press.
- Dahan E, Hauser JR (2000). Managing a Dispersed Product Development Process. *Handbook of Marketing*. Barton Weitz and Robin Wensley.
- de Brentani U, Kleinschmidt EJ, Salomo S (2010). Success in Global New Product Development: Impact of Strategy and the Behavioral Environment of the Firm. *J. Prod. Innovation. Manage.*, 27: 143–160.
- Despande Rohit, Gerald Zaltman (1982). Factors Affecting the Use of Market Information: A Path Analysis. *J. Mark. Res.*, 21: 14–31.
- Dougherty Deborah (1992). Interpretive Barriers to Successful Product Innovation in Large Organisations. *Org. Sci.*, 3: 179–202.
- Dovey K, White R (2005). Learning about learning in knowledge-intense organizations. *Learning. Org.*, 12(3): p. 15.
- Eisenhardt Kathleen M, Behnam Tabrizi N (1995). Accelerating Adaptive Processes: Product Innovation in the Global Industry. *Admin. Sci. Quarterly.*, 40: 84–110.
- Elbeltagi Ibrahim (2007). E-commerce and globalization: an exploratory study of Egypt. *Cross. Cultural Management: Int. J.*, 14(3): 196–201.
- Etzel Michael, Bruce Walker J, William Stanton J (1997). *Marketing*. New York: Mc-Graw Hill.
- Griffin A (1997). The Effect of Project and Process Characteristics on Product Development Cycle Time. *J. Mark. Res.*, 34: 24–35.
- Iwu CG (2009). What is Marketing? [online] URL: <http://www.customerthink.com/article/209180>. <Accessed September 15 >.
- Kotler Philip, Gary Armstrong (1997). *Marketing: An Introduction*. 4th ed. New Jersey: Prentice Hall.
- Kotler Philip, Gary Armstrong (2010). *Principles of Marketing*. New Jersey: Pearson.
- Kotler Philip (1982). *Marketing for Nonprofit Organizations*. Engelwood Cliffs, N.J. Prentice-Hall.
- Lamb Charles W, Jr (2000). *Marketing*. Cape Town, Oxford University Press.
- Lamb Charles W, Jr (2007). *Marketing*. 2nd South African edition. Cape Town: Oxford University Press.
- Lussier RN (2000). *Management Fundamentals: Concepts, Applications, Skills Development*. Cincinnati: South Western College.
- McAdam R, O'Hare T, Moffett S (2008). Collaborative knowledge sharing in Composite New Product Development: An aerospace study. *Technovation*. 28: 245–256.
- Michael Porter (1980). *Competitive Strategy: Techniques for Analysing Industries and Competitors*. Free Press, Harvard.
- Murray John A, Aidan O'Driscoll (1996). *Strategy and Process in Marketing*. London, Prentice Hall.
- Perreault William D, Jerome McCarthy E (1996). *Basic Marketing: A Global Managerial Approach*. Chicago: Irwin.
- Petrella Ricardo (1996). Globalisation and Internationalisation: The Dynamics of The Emerging World Order. In R. Boyer and D. Drache (eds). *States Against Markets*. Routledge, London.
- Saaksvuori A, Immonen A (2004). *Product Lifecycle Management*. 3rd edition. Berlin, Springer.
- Sarin S, O'Connor GC (2009). First among Equals: The Effect of Team Leader Characteristics on the Internal Dynamics of Cross-Functional Product Development Teams. *J. Prod. Innov. Manage.*, 26: 188–205.
- Sekiguchi Toko, Hugh Port (2001). A Novel Use for the Mobile Phone. *TIME*, October 15.p. 22.
- Sethi Rajesh (2000). New Product Quality and Product Development Teams. *J. Mark.*, 64(2): 1–14.
- Stair Ralph M, George Reynolds W (2006). *Fundamentals of Information Systems*. 3rd ed. Boston, Thomson.
- Synthesis Coalition (1998). Online:<http://best.berkeley.edu/~pps/pps/people.html>. <Accessed 26 August, 2010>
- Ulrich Karl T, Steven Eppinger D (1995). *Product Design and Development*. New York, McGraw-Hill.
- Ulrich K, Eppinger S (2007). *Product Design and Development*. 4th edition. New York: McGraw-Hill.
- Veryzer RW, Jr (2003). Discontinuous Innovation and the New Product Development Process. *J. Prod. Innov. Manage.*, 15(4): 304–321.
- Wallace Charles P (2001). Bayer's Silver Bullet. *TIME*, October 29,p. 62.
- Watson Craig M (1982). Counter-competition Abroad and Protect Home Markets. *HBR*. January-February.p. 40.
- Zainuddin Yb TD (2000). Globalisation and Developing Societies: Myths, Realities and Implications. <http://www.nitc.org.my> <Accessed 26 August, 2010>