

Radical versus Incremental Innovation Revisited: An Exploration of the Emerging Markets Imperative to Rebalance New Product Development Portfolios in Multinational Pharmaceutical Firms

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Introduction and Problem to be addressed:

Developing the “right” new products is critical to firm success and is often cited as a key competitive dimension (Roussel et al. 1991; Cooper et al. 1998; Chao and Kavadias, 2008). Based upon the newness of technology and the degree of customer need fulfillment, product innovations may be categorized as radical (or breakthrough/pioneering), at one end of the spectrum or incremental advances at the other. Every innovation carries two risks: Technology risk is primary and marketplace risk secondary in product innovations; the reverse may be held to be true for business model innovations. The more pioneering the invention, the more risk along these two dimensions is likely to be assumed by the firm. Thus, firms must strive for a balancing act as regards managing the degree of innovation inherent in product development pipelines and commercialization opportunities. Intuitively, in order to sustain competition, firms should be excellent in managing both incremental and radical innovation (Boer, 2001; Bessant et al., 2006).

Thus, the fully dexterous organization has the capabilities to innovate both radically and incrementally, while at the same time focusing on organizational effectiveness. However, it is clear that there are several key environmental and situational factors that may also have an impact on the selection of new product candidates based on radical or incremental technologies. These triggers or “sources of discontinuity” include *inter alia*, the emergence of new technologies, changing political conditions, sea changes in market sentiment or behavior and the emergence of completely new markets (Bessant et al., 2005). Focusing on the latter trigger, multinational companies with experience in developed market operations are starting to shift their interests to potentially highly lucrative emerging markets such as India, China, Africa, Asia, the Middle East, South America and Eastern Europe. However, several documented attempts by manufacturers to enter emerging markets with product innovations suggest that pursuing a strategy focused on transplanting radical innovations originally developed for affluent western consumers may not be an appropriate strategy for emerging economies, particularly where consumer behavior is molded by low incomes. For example, Whirlpool Inc made little headway in India with highly priced, automatic washing machines incorporating technological innovations that western consumers readily accepted. Only after the company introduced cheaper twin-tub machines that utilized the ready availability of consumers’ labor did sales take off. The much vaunted Tata Nano auto initiative in India presents as a further example of the need to customize innovation to cater to emerging market consumers. Tata Motors, one of India’s leading automotive manufactures has developed a car that retails for US\$2,500 to serve India’s large middle class (Kripalani, 2005). To achieve this laudable goal, Tata’s researchers and engineers had to rethink every aspect of product development (also manufacturing, sourcing and delivery) in order to identify opportunities to reduce costs.

Interestingly, the Tata Nano example also exemplifies the potential for “reverse innovatoneering” to facilitate product development and innovation more appropriate for emerging markets: In the major markets of the west, innovation is thought to include breakthrough technologies which are measured by the number of patents involved in the invention or product. Instead, it is proposed that successful innovation directed at emerging markets can utilize existing, patented components, and remix them in ways that more effectively serve the needs of large number of customers. As such these innovations are incremental from a technological standpoint, yet seek to exploit new and redefined market opportunities.

As regards developed markets, both the popular press and academic research, particularly in the innovation management and marketing literature, tend to glorify breakthrough or radical innovations viewing more incremental innovations as second rate, even “me-too” opportunities that may not contribute significantly to firm performance or dominance (e.g. Sorescu et al., 2003; Chandy et al., 2003). In contrast, a body of evidence in recent years makes a strong case that breakthrough innovation should be the growth strategy of *last* resort for firms, particularly given the risks involved in developing radical innovations (Treacy, 2004). Notwithstanding these somewhat contradictory perspectives, innovation is obviously an activity that firms, consumers and economies can derive substantial benefit from. However, questions remains as how much innovation is appropriate at any particular time and how firms should manage the risk profiles of radical vs. more incremental innovation initiatives.

As discussed previously, the fully dexterous organization has the capability to innovate both radically and incrementally (Corso and Pellegrini, 2007). However, as compared to the other streams of research in innovation, full dexterity and the achievement of an optimum “innovation balance” is the least investigated. The optimum balance of radical versus incremental innovations assumes even greater importance as firms strive to compete in a global marketplace and satisfy diverse consumers. Arguably, economies of scale favor standardized product development strategies whereby firms are able to disseminate the same or similar product innovations to international markets. However, in affluent developed markets, customers can afford to pay for products derived from costly innovation programs. This is not likely to be the case for bottom of the pyramid consumers in emerging markets and raises questions regarding such globalized (and centralized) product development strategies.

The present research seeks to elucidate the preparedness of multinational pharmaceutical companies to revisit the balance of radical vs. incremental innovation strategies in order to capitalize on emerging market growth opportunities.

The pharmaceutical industry provides a particularly appropriate sector to study in this context as the costs of innovative research and development activities hitherto directed primarily at consumers in the US, EU and Japan are extraordinarily high. The estimated average out-of-pocket cost per new drug is >US\$ 800 million (2000 dollars). Further, of every 10,000 early “discovery” stage drug candidates (that represent radical innovations), only 1 drug will ultimately reach the market. Thus, decision making relating to the optimum balance between radical and incremental product innovations on a world stage (i.e. including consideration of emerging markets) is of paramount importance from a managerial perspective and may provide insights to best practices as regards product design and development for emerging markets.

From an academic perspective, by elucidating multinational firm product development strategies to address a major shift in the global business environment, the present research contributes to the marketing, innovation management and international business literature.

Objectives:

The proposed research will examine the rationale and firm preparedness for a shift in the priority given to radical innovation versus incremental innovation projects in the multinational pharmaceuticals industry in response to significant emerging market opportunities.

Literature Review:

Research on Innovation Management

Innovation has become the industrial religion of the 21st century. In particular, product innovation has been recognized as a primary means of corporate renewal (Bowen et al., 1994) and a major source of competitive advantage (Dougherty, 1992). At the same time, companies have been exhorted to develop more innovative rather than incremental products, and there has been an increased emphasis on the development and marketing of highly innovative products in the management and marketing literature (e.g., *Journal of Product Innovation Management*, 1998). Underlying this strong interest is the notion that “really new” or “breakthrough” products are crucial to firm survival in the current fast-changing business environment.

While the concepts, “innovation” and “new product development” have sometimes been used interchangeably in the marketing literature, the key difference between the two is that the term “innovation” subsumes a much broader sphere of managerial and institutional activity than the term “new product development.” Innovation could be in the realm of technology or management. Technological innovations could be product- or process-level changes, while management innovations could be in terms of the core business model of the firm, its strategy, leadership styles, or organizational culture, to name a few of the changes. Since marketing is more concerned with the product level innovations, it is therefore not surprising that within the marketing literature, the term “innovation” refers primarily to new product and new business development (Gopalkrishnan et al., 2006)

In the marketing use of the term “innovation,” incremental innovation refers to product line extensions or adding modifications to existing platforms and products (Ali, 1994; Ali, Kalwani, & Kovenock, 1993). Managers design such products to satisfy a perceived market need and expect that products and services to meet these needs would be developed in a relatively short period of time (Ali, 1994). Banbury and Mitchell (1995) examined the introduction of incremental innovations and found that continuous innovations as well as the frequency of incremental innovations contributed to a larger market share for firms. Therefore, the introduction of incremental innovations is critical for the long time survival of firms.

Radical innovations refer to two different dimensions of innovations. Radical innovation refers to the technology basis of the innovation, i.e., the extent to which innovation is based on substantially new

technology relative to existing technology (Govindarajan & Kopalle, 2004). Disruptive innovations are market-based in which, through adoption, a small early segment of adopters allow the firm to develop the product and compete in the market, i.e., marketers of established products find the innovation disruptive in the long term (Govindarajan & Kopalle, 2004; Tushman & O'Reilly, 1997). In the context and spirit of previous research, this paper combines these innovations due to their effects and labels them as radical innovations (Ali, 1994; Ali et al., 1993). There are two reasons that firms examine radical innovations more extensively. The first and most obvious reason is that these innovations disrupt the market for incumbents and these innovations have led to the demise of incumbent firms (Christensen, 1997; Christensen & Bower, 1996; Christensen & Overdorf, 2000). Second, incumbent firms are not very skillful at developing radical innovation (Christensen, 1997; Christensen & Bower, 1996; Christensen & Overdorf, 2000; Leifer et al., 2000; Gopalkrishnan et al., 2006).

The emphasis on innovation and new product development is, however, moderated by sobering statistics regarding new product failures that raise concerns about the true value of firms' new product efforts. Studies have shown that a majority of new products fail (e.g. Booz Allen & Hamilton, Inc., 1989). American Demographics estimated that 17,000 new products were introduced in the U.S. in 1993, and 85% of them failed. A 1995 study by Information Resources, Inc. found that 70–80% of new product introductions fail, with each failure resulting in a net loss of up to \$25 million. While this data is from the US and accurate failure rate data is not available for emerging markets, similar failure rates are likely in these territories albeit at lower costs. Given this dismal scenario as regards new product success, firms attempting to introduce new products in international markets are faced with several issues. The first is the type of innovation that should be sought by firms. While the issue of how to foster innovation in firms has been an area of extensive research and strong prescriptions, (Hargadon, 1998; Hult et al., 2004), the specific type of innovation that firms should seek has been only a nascent field of research and particularly under-researched in international contexts with few notable exceptions (e.g., Govindarajan & Kopalle, 2004).

Notwithstanding the above uncertainties, research on innovation and radical innovation in particular has proceeded at a pace and includes *inter alia*, extensive consideration of the organizational aspects related to radical product innovation (Chandy and Tellis, 1998), the sources and consequences of radical innovation (Smith and Alexander, 1988; Schumpeter, 1934; 1942), the relationship between firm size and innovativeness (Cohen, 1995) and the effect of firm dominance on innovation (Sorescu, Chandy & Prabhu, 2003). In summary, in the academic literature, radical innovations are portrayed as major engines of economic growth and the *sine qua non* to achieving greater financial rewards and firm dominance in an industry sector.

At the level of the customer and in the context of innovation, it is clear that firms face unprecedented challenges in part due to the performance that their products have to achieve in order to address customer needs, i.e., the needs of today's and tomorrow's customers (Boer & Gertsen, 2003; Boer, Kuhn & Gertsen, 2006). In order to combine excellence in both satisfying today's customer needs and anticipating the demand of tomorrow's customers, firms are required to combine excellence in exploitation of old certainties and in exploration of new possibilities (March, 1991; Boer, Kuhn & Gertsen, 2006). In addition, if we extend the argument connected with the requirements of tomorrow's

customers one step further, it may be postulated that tomorrow's customers ask for products with higher and higher levels of performance, or attribute sets, that are possible because of the technology embedded in the product (Daneels, 2004). This requires firms to manage the steady state innovation process, i.e. innovating incrementally building upon existing knowledge and capabilities.

A recently emerging phenomenon is that customers not only ask for new configurations of products with higher performance, but also for new products with different attribute sets from the existing products (Daneels, 2004). In this scenario, demand is for products that address consumers who previously lacked the money or skill to buy/use a product (new market disruption), or for new products based upon a disruptive technology, that have, at first, lower performance on dimensions relevant to the mainstream market segment, but are valued by a different market group which leads the disruption (Christensen & Raynor; 2003; Burgelman et al., 2004), or products based on innovation which came "out of left field", from the periphery. This requires firms to be excellent in incremental innovation, while at the same time innovating radically beyond the operating envelope.

Interestingly, the issue of *risk* as a factor in innovation and product development strategies does not often feature in the various classifications of innovation types, or to any great extent in the literature. In this vein and given certain market conditions, it is postulated that a firm may be motivated to proactively pursue a stream of incremental innovations interspersed by fewer radical innovations. The premise in this scenario is there is financial risk and potentially market risk attached to the development of highly innovative products and that this can be mitigated by a more balanced approach that incorporates a sustained program of research and development focusing on incremental innovations.

Germane to the present research, it is postulated that the potential to exploit lucrative emerging markets presents additional significant challenges to the multinational firm seeking to optimize the balance between radical and incremental innovations and to successfully cater to consumers in an ever expanding global marketplace.

The Opportunity and Challenge of Emerging Markets

Emerging markets are generally characterized by a history of recession or stagnant economy, domestic unrest and turbulent politics, an aging population and low fertility rates, led by low growth in many market sectors. Paradoxically, these markets show some of the highest economic growth indicators of the past years (Battacharyya, 2003). The business opportunity presented by emerging markets cannot be overstated. When differences in the relative prices of goods and services are taken into account ("purchasing power parity"), the aggregate gross domestic product ("GDP") of the 10 largest emerging economies was almost US \$18 trillion in 2004 and many are growing rapidly (World Bank, 2005).

Emerging markets are therefore an additional territories to which multinationals may offer their products and services. However, leveraging the full commercial potential of emerging markets is not easy. Many manufacturers have unsuccessfully attempted to serve these markets by offering their existing products, often selling older product models at somewhat lower prices (see above). Global manufacturers have the opportunity to achieve even greater market share and profitable growth by developing innovative products and services tailored to local customer needs The question is, what

types of products should multinational firms strive to produce and how prepared are these firms to take on the new challenges posed by emerging markets?

Following Ted Levitt's famous article on globalization (Levitt, 1983), multinational product development strategy has slowly been moving toward a global vision due, in part, to the perceived efficiencies that arise from pursuing standardized approaches. This has been the conventional wisdom, but recently, some experts have started to question this approach. For example, Prahalad and Lieberthal (2003) suggest that multinational firms currently impose western or developed country models on developing countries. They suggest that firms will do better and learn more if they tailor their operations to the unique conditions of emerging markets. Similarly, Ghemawat (2003) suggests that most strategies focus on minimizing country operations differences between markets. He suggests that firms would be better off if they exploited the differences between countries rather than utilizing a more homogenous strategy.

There remains debate as to how firms develop and implement optimal business strategies to facilitate success in the era of globalization, however, it is clear that with established (developed) markets becoming saturated, multinational corporations have turned increasingly to emerging markets in the developing world. Such emerging market strategies have hitherto largely targeted the wealthy elite at the top of the economic pyramid. Recently, however, a number of multinational corporations have launched new initiatives that explore the untapped market potential at the base of the economic pyramid (London and Hart, 2004). However, it is becoming apparent that bottom of the pyramid or middle of the pyramid consumers in emerging markets represent very different beasts compared to their brethren in developed markets as consumer needs, aspirations, cultural norms and buying behavior may be very different. In addition, products and solutions that are developed "ground up" in these emerging markets may be quite different from products that are built for developed markets and then adapted to emerging markets. Perhaps most significantly, the purchasing power available to the majority of potential consumers in emerging markets is an order of magnitude less than that available to consumers in developed markets. This means that price points bear little resemblance to those possible in the developed economies as the majority of consumers (in emerging markets) are unlikely to be able to pay for the costly radical innovations that firms routinely seek to develop and commercialize in established markets. In short, most products sold in developed markets are simply beyond the means of all but the most affluent emerging market customers. It follows therefore that firms intent on participating in these emerging markets must re-consider the extent of innovation that is relevant on a global stage. While selling smaller sizes of consumer products is one approach, some manufacturers have engaged in more fundamental redesign of their products to be able to slash prices. Nokia and Motorola now offer cell phone handsets for less than \$50 and Philips has a project to drive down production costs of handsets below \$20 by 2008 (Reinhardt and Johnson, 2005). Some international firms have learned that rapid new product development and deployment, continuous product innovation, and accelerated obsolescence that are part of the competitive apparatus in developed markets, are unsuited to emerging markets (Dawar and Chattopadhyay, 2000). From a corporate perspective, one logical extension of this is that firms' must revisit the balance of radical vs. incremental innovation in their product development portfolios to accommodate the emerging market perspective yet continue to serve customer needs in developed markets.

Innovation in the Multinational Pharmaceutical Industry

The present research focuses on the innovation intensive pharmaceutical industry. The pharmaceutical industry exhibits particular challenges related to innovation and new inventions including protracted product development timelines, high research costs, a low probability of commercialization, strictly regulated markets, restricted market exclusivity for new products and a cap on firms' marketing efforts. Despite these challenges, the US pharmaceuticals industry (for example) generated in excess of \$200 billion in sales revenues in 2008. Historically, the pharmaceutical sector's success has been predicated upon the introduction of radical innovations in the form of "first in class" novel drugs to meet unmet medical needs. Such "blockbuster" drug products have routinely garnered multibillion dollar sales and fuelled the success of the industry worldwide, although it is mainly the developed markets of North America, Europe, Japan and Australasia that have been targeted for commercialization of these costly pioneering, first in class drug products. However, approvals of new drugs have fallen to the lowest level in years. Part of this is due to higher research costs and lower research productivity, however, in addition, regulatory and safety concerns, along with increased payer focus on the value of new therapies, have delayed filings, or even caused them to be canceled outright. There is also a genuine push in developed market-oriented product development toward drugs tailored to subpopulations and submarkets. Such products can potentially have better outcomes for certain patient populations, but they are not likely to work well for broad populations. By definition, the markets for such tailored drugs will be smaller. In addition, independently of any impetus to cater to emerging market opportunities, accelerating patent expiries have forced companies to re-evaluate the role of incremental innovations, including combination drug products, new uses for existing drugs, more convenient administration and dosage forms and re-engineered variants with greater effectiveness or fewer side effects.

These strategies favor a critical review of the traditional emphasis given to radical versus incremental innovation projects pursued by drug firms if the pharmaceuticals industry is to re-establish its position as one of the most profitable industry sectors in the world. Previous academic research has emphasized the antecedents and consequences of radical innovation (Chandy et al., 2003), but few studies have included an appraisal of the optimal balance between this approach and incremental innovation as applied to product development and there has been no empirical or qualitative research that seeks to explore how the pharmaceutical industry proposes to capitalize on the opportunity presented by emerging markets and the impact of this opportunity on innovation strategies.

It is proposed that a pharmaceutical firm's success in emerging markets particularly should not be considered dependent upon an unwavering emphasis on developing radical innovations where costs and risks associated with research and development may be high and out of the reach of consumers and payers in these developing markets. Instead, a consistent stream of product introductions comprising incremental innovations may serve the firm better in the long run as regards the emerging market opportunity.

The development of new drugs utilizing novel mechanisms of action to treat hitherto untreated diseases is an extremely risky endeavor costing up to \$1 billion dollars for every new drug and taking up to 12 years to reach the market. In addition, serendipity in drug discovery and high attrition rates in drug development are the norm in the industry. In contrast, incremental advances (e.g. new formulations of

marketed drugs, new uses for existing drugs or combination drug approaches), may present as substantially risk reduced alternatives more suited to emerging markets in the short to medium term. In this scenario, product development initiatives previously viewed as strategies employed primarily to manage product life cycles, assume a key role in the management of innovation in successful firms with emerging market aspirations.

Hypotheses:

Since this is an exploratory study there are no testable hypotheses included.

Methodology and Data Collection:

The purpose of this research paper is to elucidate the impact of the emerging markets opportunity on the planned balance of radical vs. incremental innovations initiated by multinational pharmaceutical firms.

The research questions will be formulated to capture the following relevant information:

- In the next 5 years, does your firm expect to develop or launch “first in class” drugs (based upon novel drug targets and/or novel mechanisms of action), or sequential/follow-on therapeutic innovations (including improved drugs but second or third generation, product enhancements, reformulations and new indications for existing products and generics), or both categories?
- In the next 5 years, what is the expected ratio of first-in-class drugs to sequential/follow-on drugs (including improved drugs, product enhancements, reformulations and new indications for existing products and generics) that your company expects to develop or launch?
- Does your firm consider emerging markets as a significant commercial opportunity for pharmaceutical innovations?
- Which emerging markets does your company consider as priorities?
- Does your company have a plan to expand it’s presence in emerging markets?
- Does your company have a dedicated leadership function to manage emerging markets and the innovation directed at emerging markets?
- Which type of pharmaceutical innovations (first in class drugs, improved drugs/product enhancements, reformulations, and new indications for existing products, branded or unbranded generics) does your company believe are well-suited to emerging markets?
- Is your company developing fundamentally new products with cost structures that meet the unique requirements of drug consumers in emerging markets?
- Are these first in class drugs, or sequential therapeutic innovations (including product enhancements, reformulations, new indications, branded or unbranded generics)?

- Is your company developing drug innovations in emerging markets that can be brought back to change the competitive landscape in developed economies (US, EU, Japan, Australasia)?
- Are there particular therapeutic areas that are priorities for your emerging markets product development strategy?
- Do you plan to access product innovation opportunities appropriate for emerging markets via strategic acquisitions/alliances?
- Are these opportunities expected to be first in class drugs or sequential therapeutic innovations (including product enhancements, reformulations, new indications for existing products or generic or branded generic drugs)?
- What impact do you expect emerging markets to have on your company's research and development activities in the next 10 years?
- What impact do you expect emerging markets to have on your company's marketing activities in the next 5 years?

Since this is an exploratory research project, it is proposed to conduct 30 in-depth interviews among key personnel in the multinational pharmaceuticals industry spanning marketing, R&D and business development functions. All the interviews will be recorded and transcribed. Where there are executives assigned to emerging markets responsibilities in the firm, these will be targeted as priority interviewees. All the interviews will be recorded and transcribed. When analyzing the interviews with respect to the research questions seeking to be addressed in this paper, the transcripts will first be divided into units by creating categories in order to understand what each part of the interview is concerned with (coding) (Coffey and Atkinson, 1996). These more general categories or themes will then be compared and linked together in order to identify similarities and recurring themes. The categories will be driven by the desire to identify the impact of the emerging markets opportunity on the current and future balance of product portfolios with respect to radical vs. incremental innovations.

In addition to the expert interviews, a mail survey will be employed to canvass the opinions of a larger set of managers. A questionnaire will be sent to 75 individuals in 20 companies. The survey material collected will be analyzed using SPSS. The analysis will include descriptive statistics and cross-tabulations.

Validation

Not applicable

Results and Conclusions

Not applicable

References

- Ali, A. (1994). Pioneering Versus Incremental Innovation: Review and Research Propositions. *Journal of Product Innovation Management*, 11, 46-61.
- Ali, A., Kalwani, M.U. and Kovenock, D. (1993). Selecting Product Development Projects: Pioneering versus Incremental Innovation Strategies. *Management Science*, 39 (3), 255-274.
- Bessant, J., Lamming, R., Noke, H. and Phillips, W. (2005) Managing Innovation beyond the Steady State. *Technovation*, 25, 1366-76.
- Boer, H. and Gertsen, F. (2003). From Continuous Improvement to Continuous Innovation: A (Retro)(per)spective. *International Journal of Technology Management*, 26, 805-27.
- Boer, H., Kuhn, J. and Gertsen, F. (2006). Continuous Innovation Managing Dualities through Coordination, C I Net Working Paper Series, WP2006-01 [WWW document].
- Boer, H. (2001) And [Jethro] Said...Learning the Link between Strategy, Innovation and Production. Center for Industrial Production, Aalborg University, 4 May.
- Booz Allen & Hamilton, Inc. (1989). *Product management for the 1980s*. New York: Booz Allen and Hamilton.
- Bowen, H.K., Clark, K.B., Holloway, C.A. and Wheelwright, S.C. (1994). *The perceptual enterprise machine – seven keys to corporate renewal through successful product and process development*. New York: Oxford University Press.
- Burgelman, R., Christensen, C., Wheelwright, S.C. and Maidique, M.A. (eds) (2004). *Strategic Management of Technology and Innovation*. McGraw-Hill Irwin, Boston, MA.
- Chao, R.O. and Kavadias, S. (2008). A Theoretical Framework for Managing the New Product Development Portfolio: When and How to Use Strategic Buckets, *Management Science*, 54(5), 907-921.
- Chandy, R.K., Prabhu, J.C. and Antia, K.D. (2003). What Will the Future Bring? Dominance, Technology Expectations, and Radical Innovation. *Journal of Marketing*, 67 (July), 1-18.
- Chandy, R.K. and Tellis, G.J. (2000). The Incumbent's Curse? Incumbency, Size, and Radical Product Innovation. *Journal of Marketing*, 64, 1-17.

Christensen, C.M., and Raynor, M.E. (2003). *The innovator's solution*. Boston: Harvard Business School Press.

Christensen, C.M., and Bower, J.L. (1996). Customer power, strategic investment, and the failure of leading firms. *Strategic Management Journal*, 17(3), 197-218.

Christensen, C.M. and Overdorf, M. (2000). Meeting the challenge of disruptive change. *Harvard Business Review*, 78(2), 66-77.

Coffey, A and Atkinson, P. (1996), *Making sense of qualitative data*, Thousand Oaks, Sage Publications.

Cooper, R. S, Edgett, J and Kleinshmidt, E.J (1998), *Portfolio Management for New Products*. Perseus Books, New York.

Daneels, E. (2004). Disruptive Technology Reconsidered: A Critique and Research Agenda. *Journal of Product Innovation Management*, 21, 246-52.

Dawar, N. and Chattopadhyay, A. (2002). Rethinking Marketing Programs for Emerging Markets, *Long Range Planning*, 35(5), 457-474.

Dougherty, D. (1992). Interpretive barriers to successful product innovation in large firms. *Organization Science*, 3, 179-202.

Gopalkrishnan, R.I, LaPlaca, P.J and Sharma, A (2004), Innovation and new product introductions in emerging markets: Strategic recommendations for the Indian market.

Ghemawat, P. (2003). The forgotten strategy. *Harvard Business Review*, 81(11), 76-85.

Govindarajan, V. and Kopalle, P.K. (2004). The usefulness of measuring disruptiveness of innovations ex post in making ex ante predictions. *Journal of Product Innovation Management*, 23(1), 12-18

Hargadon, A.B. (1998). Firms as knowledge brokers. *California Management Review*, 40(3), 209-227.

Hult, G.T.M., Hurley, R.F., and Knight, G.A.(2004). Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management*, 33(5), 429-438.

Kripalani, M. (2005) *Asking the Right Questions*. Business Week, August 28.

Leifer, R., McDermott, C.M., O'Connor, G.C., Peters, L.S., Rice, M.P., Veryzer, R.W. (2000). *Radical innovation: How mature companies can outsmart upstarts*. Harvard Business School Press.

Levitt, T. (1983). The globalization of markets. *Harvard Business Review*, 61(3), 92-103.

London, T. and Hart, S.L. (2004). Reinventing strategies for emerging markets: beyond the transnational model, *Journal of International Business Studies*, 1-21.

March, J.G. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science*, 2, 71-87.

Prahalad, C.K., and Liebethal, K. (2003). The end of corporate imperialism. *Harvard Business Review*, 81(8), 109-120.

Rahman, Z. and Bhaatacharyya, S.K. (2003). First mover advantages in emerging economies: a discussion, *Management Decision*, 41(2), 141-147.

Rousell, P., K. Saad, T. Erickson. (1991). *Third Generation R&D Managing the Link to Corporate Strategy*. Harvard Business School Press, Cambridge, MA.

Schumpeter, J. (1942). *Capitalism, Socialism and Democracy*. New York: Harper.

Smith, D.K. and Alexander, R.C. (1988). *Fumbling the future: How Xerox Invented Then Ignored the First Personal Computer*. William Morrow & Co.

Sorescu, A., Chandy, R.J. and Prabhu, J.C. (2003). Sources and Financial Consequences of Radical Innovation: Insights from Pharmaceuticals. *Journal of Marketing*, 67 (October), 82-102

Treacy, M. (2004). Innovation as a Last Resort. *Harvard Business Review*, July-August.

Tushman, M.L., and O'Reilly III, C. A. (1997). *Winning through innovation: A practical guide to leading organizational change*. Boston, MA: Harvard Business School Press.

World Bank, World Development Indicators, 2005 database, www.worldbank.org.