

The Innovation Imperative: My Research into the Revolutionary Role of Innovation in Contemporary Markets¹

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Today, much manufacturing has gone to China, many services are going to India, and agriculture is threatening to go to South America. Indeed, China is steadily moving its manufacturing expertise into high tech products, such as solar panels, satellites, and aircraft. Solyndra was only the recent casualty of the Chinese manufacturing juggernaut. India has moved way beyond call centers into providing services globally in consulting, computer software, medicine, and even R&D. Brazil and other South American nations are now producing agricultural products that were once a specialty of the U.S. This global entry of emerging economies into domains, which were strongholds for the U.S. in the last century, raises an important question: What will the U.S. excel in in this century?

Innovation! This is the most frequent response. The U.S. and firms in the U.S. must excel at innovation and must remain one step ahead of competitors the world over. This solution of “innovation” has been proposed by economists, management consultants, CEOs of major corporations, and more recently politicians and government leaders. In his State of the Union Address, President Obama issued a clarion call to the nation. “We need to out-innovate, out-educate, and out-build the rest of the world.” Throughout human history, innovation has been the reason for better living standards for consumers, the rise and fall of markets and firms, and the wealth of nations. But what does “out-innovate” the rest of the world really mean today?

My co-authors and I have done a great deal of research on innovation over the last couple of decades. The findings from that research have important implications for managers, public policy makers, and politicians. For example, in one study we tracked the evolution of 66 markets from inception to recent times to see how pioneers and early leaders fared relative to later entrants (Tellis and Golder 2001). In another study we tracked over 90 of the most well-known innovations in major consumers markets to see which firms are introducing innovations and which are not (Chandy and Tellis 2000). In a third study, we analyzed the innovativeness of over 770 firms across 17 countries (Tellis, Prabhu and Chandy 2009). In a fourth study, we analyzed the evolution of technologies over time, which led to the introduction and growth of new products and services across a number of markets (Sood and Tellis 2005). In a fifth study we have analyzed the stock market returns to innovation at various stages of the innovation process (Sood and Tellis 2009). In addition, I have made hundreds of presentations world-wide and

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talked with numerous executives about innovation. These studies and extensive discussions have provided six important insights about innovation.

Insights from Research

First, our research suggests that innovation trumps all other drivers at one time or another considered critical to economic vitality and national wealth, such as natural resources, climate, geography, religion, or national culture (Tellis, Prabhu and Chandy 2009). Today the innovative output of a country depends invariably on the innovation of the firms within it (Tellis, Prabhu and Chandy 2009). We no longer live in times where a single emperor at the top of a huge empire could control and dictate the economic fortunes of a large nation. Today, innovation is a lot more decentralized and resides primarily in the innovativeness of individual firms within a nation. Any one country such as the US has highly innovative firms such as Google and Apple, and non-innovative firms such as GM and Kodak that may well go bankrupt. If a country has mostly non-innovative firms, then it will stagnate and decline. On the other hand, if a country has a sufficient number of innovative firms, they will thrive, sweep out those that are not innovative, and constantly revitalize the economy of that country.

Second, firms differ substantially in their performance. Some firms repeatedly win over customers, grow in sales, and dramatically increase their market capitalization. Examples include Amazon, Facebook, Groupon, Apple, and Google. On the other hand, other firms lose customers, stumble, and decline in sales and market capitalization. Examples include Sony, HP and Nokia. The single distinguishing feature between these winners and losers is their ability to commercialize innovations (Chandy and Tellis 1998; Tellis, Prabhu and Chandy 2009). Firms that grow and dominate their markets and create wealth for their shareholders commercialize innovations as a matter of routine. Those that stumble or fail either miss out on some important innovations or completely fail to innovate (Tellis 2013). Innovation is the single most important driver of wealth creation, both at the firm level and at the national level. This innovation can be in a variety of forms including technology, product, service, delivery, business model, or marketing.

Third, the firms that innovate and succeed do so not once, not often, but constantly. Analysts thought that at one time you needed to introduce new products once in a few years, or at least once a year. However, in recent years, the pace has gone up dramatically. The successful firms are introducing innovations not merely annually or monthly but weekly and daily. Success depends on what we call relentless innovation (Tellis and Golder 2001; Tellis 2013). To fail to innovate, to miss a generation of innovation, is to face imminent decline.

Fourth, the rate of change in innovation is increasing rapidly (Sood and Tellis 2005; Chandrasekaran and Tellis 2008). This increase occurs at three levels. One, in any market, new technological platforms emerge at an ever faster pace. Two, within any platform, design and components innovations are occurring ever more rapidly. Three, the rate of improvement in

performance is increasing within platforms, designs, and components. Thus, the pressure to innovative is increasing, not steady or declining.

In such an environment, every firm would like to be innovative. What causes firms to be non-innovative? The single biggest hindrance to innovation is the firm itself. Note that innovation leads to better products and services, better and more satisfied consumers, greater success, and greater wealth. Thus, the innovative firm has more resources with which to further innovate. Unfortunately, success brings its own perils. A fifth important finding from our research is that success leads to lethargy, complacency, or arrogance. These traits lead firms to overlook, ignore, or even belittle the next wave of innovations. Success contains the seeds of failure. We call this phenomenon the “incumbents curse” (Chandy and Tellis 2000; Tellis 2013). It results in emphasis on the present instead of the future, an aversion rather than an embrace of risk, and in a failure rather than willingness to cannibalize one’s successful products with future innovations.

In this context, the order in which firms enter markets is irrelevant to ultimate success. Market pioneers often fail, have low market share on average, and do not dominate market for too long (Golder and Tellis 1993; Tellis and Golder 1996; Tellis and Golder 2001). The pioneer of a market not only is not guaranteed long term success but could suffer a long list of disadvantages.

Sixth, given its importance, every firm would like to develop a culture that overcomes the incumbents curse and helps it stay relentlessly innovative. Indeed, culture is the most important determinant of innovation. Understanding the components, evolution, and dynamics of culture is critical to managing in the current environment (Tellis 2013). We have found that a culture of innovation consists of three critical traits: a willingness to cannibalize successful products, a focus on the future and an embrace of risk. It is very difficult for a firm to change these traits of its employees overnight. However, a firm can adopt three practices that foster these traits: incentives for enterprise, innovation champions, and internal competition.

Seventh, a common belief in business is that Wall Street has a short term focus and does not reward investments in innovations that payoff in the long term. Our research shows just the opposite. The stock market rewards innovation at every stage of the innovation process at an average of as much as four to five years before a new product is commercialized (Sood and Tellis 2009). The reward is revealed as an increase in the stock price and market cap of a firm as it makes announcements about its investments and developments in innovation. Our estimates of these returns show that the rewards to investments in terms of increases in market cap can be as high as three times the value of the investments (Sood and Tellis 2009).

Managerial Implications

The innovation imperative has many important implications for managers and policy makers. I list a few of them here. First, new firms are mushrooming all over the world, with better products and lower costs to serve existing customers. The very origin of these firms in completely different environments increases the probability of innovative solutions to existing problems. So,

managers need to look at markets today as global rather than local. Second, managers focus primarily on serving current customers with their current profitable products. They are consumed with the crises and exigencies that that responsibility brings. However, change is occurring at an increasingly rapid pace. Technologies and innovations of the future will invariably change customer needs, the solutions that satisfy those needs, and the businesses that market those solutions. Managers need to set aside time and people to focus on the future and create the innovations that will shape the future. Third, an often overlooked source of innovations is the firm's own employees and customers. These unrecognized people sometimes develop innovations that can transform markets and revitalize a firm's fortunes. Firms need to think of their employees as potential innovators rather than as loyal employees, incentivize them accordingly, and eagerly grasp innovations that employees generate. Fourth, the best environment that a country can provide for wealth creation is to foster markets with intense competition, where innovators are free to start new enterprises, while old non performing firms are allowed to quickly and easily die out.

Future Research

The new imperative of innovation has a number of implications for research. In a couple of papers, I and my co-authors have highlighted many of these (Tellis 2008; Tellis, Prabhu, Chandy 2012). One of the most important ones is to understand business model innovation. There are some who believe that business model innovations breakdown into fundamental innovations on a new technological platform. Others believe that business model innovations are radical innovations in gaining new rents from providing value to consumers. In general there is little consensus on what is business model innovation and even less research. A second important research topic is whether a firm should buy or make innovations. The logic to buy externally is to let a thousand flowers bloom and pick the most promising. However, such options are difficult to come by, difficult to spot before they take off, and too costly to buy after they takeoff. The logic to make internally is to build on a firm's expertise and knowledge of its markets. However, investing for organic innovations is costly, the process long, and the payoff highly uncertain because most innovations fail. A third topic is to predict the path of technological innovations and the point at which these paths intersect and disrupt each other (Sood and Tellis 2009; Sood, James, Tellis and Zhu 20012). Technologies are the underlying platforms on which innovations develop. They evolve along distinct paths that are at least partly predictable. Even though these cannot be fully predictable, the mere exercising of these paths would lead managers to focus on the future and be better prepared for it. A fourth topic is to understand the dynamics and principles of crowdsourcing for new product ideas. Today a massive wealth of data is being generated by customers themselves as they comment on and review current products. Mining such data can provide managers with fascinating insights about the usefulness of current products and for what consumers are looking in the future (Tirunillai and Tellis 2012). Moreover, setting up systems where customers can explicitly provide firms with ideas for new products can be a rich and inexpensive source of highly varied ideas for new products. Greater research on these four major issues in innovation would be highly productive.

Increasing global competition, rapid technological change, and demanding customers make innovation an imperative today. In this reality, firms must innovate or die. Countries must strive to make sure that the firms within it are relentlessly innovative.

References

- Chandrasekaran, Deepa and Gerard J. Tellis (2008), "The Global Takeoff of New Products: Culture, Wealth, or Vanishing Differences" *Marketing Science*, 27, 5 (September-October), 844-860.
- Chandy, Rajesh and Gerard J. Tellis (1998), "Organizing For Radical Product Innovation," *Journal of Marketing Research*, 35 (November), 474-487.
- Chandy, Rajesh and Gerard J. Tellis (2000), "The Incumbent's Curse? Incumbency, Size and Radical Product Innovation," *Journal of Marketing*, 64, 3 (July), 1 to 17.
- Sood, Ashish, Gareth James, Gerard J. Tellis and Ji Zhu (2012), "Predicting the Path of Technological Evolution: Testing SAW versus Moore, Bass, Gompertz and Kryder," *Marketing Science*, forthcoming.
- Sood, Ashish and Gerard J. Tellis (2005), "Technological Evolution and Radical Innovations," *Journal of Marketing*, 69, 3 (July), 152-168.
- Sood, Ashish and Gerard J. Tellis (2009), "Do Innovations Really Payoff? Total Stock Market Returns to Innovation," *Marketing Science*, 28, 3 (May-June), 442-456.
- Sood, Ashish and Gerard J. Tellis (2011), "Demystifying Disruptions: A New Model for Understanding and Predicting Disruptive Technologies," *Marketing Science*, 30, 2 (March-April), 339-354.
- Tellis, Gerard J, Rajesh K Chandy and Jaideep Prabhu (2012), "Key Questions on Innovation in the B2B Context," in *Handbook of Business-to-Business Marketing*, edited by Gary L. Lilien and Rajdeep Grewal, Glos, UK: Edward Elgar Publishing, Inc.
- Tellis, Gerard J. (2008), "Important Research Questions in Technology and Innovation," *Industrial Marketing Management*, 37, 6 (August), 629-632.
- Tellis, Gerard J. and Golder, Peter N. (1996), "First to Market, First to Fail? The Real Causes of Enduring Market Leadership," *Sloan Management Review*, 37, 2, 65-75.
- Tellis, Gerard J., Jaideep Prabhu and Rajesh Chandy (2009), "Innovation of Firms Across Nations: The Pre-Eminence of Internal Firm Culture," *Journal of Marketing*, 73, 1 (January), 3-23.
- Tellis, Gerard J. and Peter Golder (2001), *Will and Vision: How Latecomers Grow To Dominate Markets*, McGraw Hill.
- Tellis, Gerard J. Rajesh Chandy and Jaideep C. Prabhu (2012), "Key Questions on Innovation in the B2B Context," in *Handbook Of Business-To-Business Marketing*, eds: Gary L. Lilien , Rajdeep Grewal, Elgar.
- Tellis, Gerard J. (2013), *Unrelenting Innovation: How to Create a Culture of Market Dominance*, Jossey-Bass, January.
- Tirunillai, Seshadri and Gerard J. Tellis (2012), "Does Chatter Really Matter? The Dynamics of User-Generated Content on Stock Performance," *Marketing Science*, 3, 2 (March-April), 198-215.