

“Strategies of Imitation: An Insight”

AUTHORS

Enrico Valdani
Alessandro Arbore

ARTICLE INFO

Enrico Valdani and Alessandro Arbore (2007). Strategies of Imitation: An Insight. *Problems and Perspectives in Management*, 5(3-1)

RELEASED ON

Friday, 05 October 2007

JOURNAL

"Problems and Perspectives in Management"

FOUNDER

LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

© The author(s) 2024. This publication is an open access article.

Strategies of Imitation: An Insight

Enrico Valdani*, Alessandro Arbore**

Abstract

The success of an innovative firm stimulates other organizations to follow suit in a competitive game of imitation. The aim of this article is to focus on the circumstances and underlying reasons favoring imitative strategies, while arranging the literature and empirical evidence on the issue. It is intended as a systematization of different contributions on this topic taken from different perspectives. We are convinced that such a comprehensive insight can be very useful to innovative companies as well.

Key words: imitation strategies; later entrance; follower.

JEL Classification: M30.

The Strategies of Imitation: Players and Main Types

The success of an innovative firm stimulates other organizations to follow suit in a competitive game of imitation. The aim of this article is to provide a comprehensive insight on the circumstances and underlying reasons of imitation strategies by rearranging the literature and empirical evidence on this issue.

Starting from the players who may conduct such a practice, the following must be distinguished:

- a) *new-comers*, that is, companies previously outside the industry. Because of some disruptive innovation (Christensen, 1997) -- by which a first mover changes the rules of the game -- they realize to have, now, the right resources to enter the competitive arena and begin the chase. Think at Hewlett-Packard for the camera industry: by imitating the disruptive innovation of digital photography introduced by Sony in 1981, they entered this market in 1998 and started to subtract market shares to the previous contenders (with a market share of 7% in 2006 they overtook Olympus for example);
- b) *incumbents*, feeling threatened by the innovation in their market and deciding to imitate it, either immediately or after trying to counter it to defend their original conducts. Think at Nikon this time, still in the camera industry: they reacted quite late to the digital revolution, introducing their first Coolpix in 1997, that is six years later than Kodak. Not surprisingly, when the innovation originates from another incumbent, the imitative reaction is generally quicker: think at the Nike Air and the Adidas Megabounce, for example;
- c) enterprises in the *retail system*, often belonging to Large-scale Retail Channels, which increasingly use their own tangible or intangible resources to imitate successful brand names. Think at Carrefour, for example: they market about 2000 products with different private labels: Carrefour, Carrefour Quality Line, Firstline, Frenchtouch and Bang.

Referring to the innovative standard chosen by the imitator, we will also identify three different types of conduct: (1) parasite imitation; (2) incompatible or redundant imitation; and (3) induced imitation.

The imitation game we call *parasite imitation* takes place when the imitator follows the innovator's lead by reproducing a similar, successful standard (a so-called "*dominant design*", as in Utterback, 1996). This is facilitated when there are not many legal or awareness barriers to protect the innovation or when the barriers are weak or difficult to defend thus enabling quick imitation.

* Bocconi University, Italy.

** Bocconi University, Italy.

In the parasite imitation game the imitator may in any case provide the market with a valid offer that might even be considered better because of improvements to bundling or more competitive prices, even if the product is an imitation of the innovation. Think, for example, at the SUVs (Sport Utility Vehicles), that followed each other in the automotive industry.

The game of *incompatible or redundant imitation* takes place when the imitator, in turn, answers with innovation, but is technologically incompatible with that of the innovator. Their solution is still able to satisfy the same needs and provide similar benefits. In the presence of network externalities (Katz & Shapiro, 1985, 1994) or, more in general, of *positive feedbacks*, the technologies of the innovator and imitator fight each other to become the standard taken on by the market (a well-known *war for the standard*. E.g., Shapiro & Varian, 1999). The game of incompatible or redundant imitation may end up with a truce, a duopoly, or end with the defeat of one of the fighters, which is often the case. An incompatible imitation of the Sony PlayStation was the Microsoft Xbox. Not only the applications, the accessories, and the games are incompatible: in the latest versions, even their high-definition video players are facing a war for standard: a Blu-Ray player for the PS3, and an Hd-Dvd player (optional) for the Xbox360.

The game of *induced imitation* takes place in contexts where the innovative enterprise facilitates and accelerates the game of imitation, when they realize that it is the best, most effective and perhaps least expensive to establish their standard. The history of video and electronic markets is full of well-known wars for standards, like the classic Betamax Vs Vhs. In most of cases the companies that won the war followed a strategy that gave incentives for the imitation game. They guaranteed user licenses and technological support to any rival who requested it. In that case the companies in question did not fight the other technology, they were interested in winning demand, persuading potential buyers and users it was useful and cost effective to abandon old technologies and move on to new ones able to offer higher value.

In conclusion of this first section, a further, radical distinction between imitation games should be pointed out: the imitation outlined in this paper in any case remains within the legal limits of lawful competition. Of course, imitation with unlawful intentions also exists, which we generally call counterfeit. Counterfeit is out of the scope of this work (see, among the others, Hopkins, Kontnik, & Turnage, 2003).

The Object and Entity of Imitation

Imitation may be extended to products and services generated by the innovator, as well as to its technologies, procedures, processes, organizational models and market strategies. Also, it can be the imitation of either an incremental or a radical innovation, following the common dichotomy (Abernathy, 1978).

Starting with the (lawful) imitation of products and services, this activity may be more or less original. In this sense, we have:

- ◆ *clones*: legal copies of the original product, but sold under the brand name of the imitator. In some cases the clone stands out because the quality is higher than that of the original product or the price is much lower. It can be the headphone or the AC charger for a Nokia phone, as well as the cartridge for a Canon printer;
- ◆ *marginal imitations*: it is possible to imitate an innovation by modifying marginal elements, developing a different design, reconfiguring the product, using new alternative materials or using different manufacture processes. From this point of view, the English coffee-shop chain “Costa” represents a marginal imitation of the innovator “Starbucks”;
- ◆ *incremental imitation* (also known as innovative imitation or *technological leapfrogging*): in this case the imitator enters a developing market with a significant technological contribution thereby innovating and overtaking the pioneer innovator. A remarkable example, here, is the incremental imitation of Microsoft Excel over the pioneeristic Lotus 123.

- ◆ *creative imitation*: they define the most innovative copy of the pioneer product. In this case the imitator makes some changes to the original concept, with the aim of creating *new applications* for the pioneer product to meet the needs of new customer segments or to enter new markets or new sectors. So, for example, a three-wheels working vehicle like the “Ape” by Piaggio may become a unique taxi for tourists in its Indian imitation, named Tuc Tuc (this is a licensed imitation, by the way).

As said, imitation concerns not only products, but also strategies, organization models and processes that bring market success to the innovator. For instance, activities related to competitive intelligence and benchmarking are undertaken to assess the market drive capacity of rivals or excellent enterprises from other industries in order to copy them. From this point of view, even if Japanese companies are often accused of taking part in imitation warfare, it should be acknowledged that their international market success actually stimulated many European and American enterprises to study the skills and capacity behind their results in order to re-engineer their procedures and critical processes. It is without doubt that imitating a product is easier than imitating a process or a procedure. The latter are intangible resources, less obvious, fruit of constant investments in corporate culture, in its climate and organization mechanisms that make it stand out and so making it more difficult to copy. Similarly, some scholars point out how the *complexity* and *random ambiguity* of a successful strategy – “what’s behind it” – act as protection against being imitated by competitors (Lippman & Rumelt, 1982; Rivkin, 2000; Szulanski, 1996; Ounjian & Carne, 1987).

The Strategic Rationale: Behavioral Drivers

There are several reasons for enterprises to play the imitation game. It is useful to distinguish, here, between *incumbents* and *other players*, namely *new comers* and *large-scale retailers*.

New comers recognize new opportunities for diversification in the innovation of the first mover: the innovation provides these enterprises with the opportunity to overcome old barriers to enter the industry, often giving them an edge over previous incumbents: as a vintage example, we can think about when the ski industry or tennis racket industry still required skills in processing wood. Innovations in materials used, introduced by a first mover, naturally opened the door for new comers with skills and resources from the world of plastics. The same is true in how the quantum leap of digital photography opened the door for imitators from the world of electronics.

Also *large-scale retailers* increasingly exploit opportunities offered by up-stream integration through parasite imitation strategies for products and successful brand names. According to ACNielsen, in 2005 the so-called private-label phenomenon reached nearly a fifth of the market share of consumer products in North America with an average annual growth rate of 7%. The rate reached in the frozen foodstuffs segment, for example, reached 30%, while for cosmetics it is only 2% but with growth rates of over 20% (ACNielsen, 2006). The motivation of large-scale retailers is clear: capitalize on resources such as contact with end users and the loyalty they have for the retailer to exploit integration opportunities with particularly low risk, both due to the flexibility in production investments and because only goods, brands or formulas that have a proven profit potential are imitated.

Instead, motivations can be differentiated when speaking about imitation strategies adopted by *incumbents*. The following cases can be distinguished:

- a) *Reaction to the element of surprise*, when success is clear. Many enterprises are taken by surprise when a smaller and entrepreneurial innovator launches an innovative product or service. This happens when the opportunity and market potential of the new product, when first launched, are not recognized or are underestimated. This is what happened in the US with many successful e-tailers, like Amazon. In these cases, the reaction of the traditional players is put off until sales and demand clearly skyrocket. Even in these cases the enterprise does not always react and chalks up the new product’s success to a passing fad or is afraid of jeopardizing or cannibalizing sales of their current products (this was the problem of Barnes & Noble’s before reacting to Ama-

zon's success). In these cases, the imitator only reacts when the changes in the market show a clear risk of suffering a loss in market share or losing dominance.

- b) *Strategic choice to wait until success is clear.* In this case the enterprise makes a conscious choice to wait patiently for the innovation's market development. This is the usual choice of a company that, with a significant stock of resources and skills, prefers to leave the cost of market development to the innovating company. This was the strategy adopted by TIM and Vodafone for the Italian third-generation mobile market, where the first mover was the new comer Hutchison3G.

Firms that choose this way, strategically plan their entrance for the first error or when sales of the new product begin to take off so they exploit their speed in reacting and ability to imitate. It is clear that the critical element of this choice is time. The enterprises, even if they avoid typical risks entailed with being the first mover, are still open to a different risk, i.e. waiting too long: indeed, their imitation may be too late, when margins, economies of experience or the number of early imitators have already seized most of the opportunities opened up by the innovator. Ideally, from this standpoint, the desired logic should be to study the probability of an innovation's success by time t and the potential profits obtainable from an imitation strategy in that scenario and in that moment (Levitt, 2006). So imitation may become a systematic choice. In any case it should be accompanied by fine-tuning superior skills in exploiting imitation-speed economies, both in terms of technical and production development and in terms of process flexibility and, more in general, in terms of time-to-market. An excellent example of this is the clothing company Zara. A systematic imitation, on the contrary, runs the risk of being less effective if the innovations have many set-up issues, considerable need for capital and products not easy or unable to copy quickly.

- c) Strategic choice for imitation even when success is not yet certain. In this interesting case, actually very common, there may be several reasons behind such a choice (Lieberman & Asaba, 2006):

c-1) *Imitation based on implicit information.* Where there is high uncertainty some enterprises may observe the actions of the first movers and, especially if the latter are well-known players, they may decide to imitate them regardless of the private information in their possession. Naturally, the assumption of imitators is that the first movers have better information. For this reason, once a critical mass of imitating enterprises is reached, there may be what some economists refer to as "information cascades" (Bikhchandani, Hirshleifer & Welch, 1992). A clear example is when so many companies quickly entered the e-business market until the bubble burst at the beginning of 2000s. Where there are information cascades, since the imitation process is essentially based on the theory that the first movers are going in the right direction, an industry is exposed to high risks and when that direction is proven to be wrong society as a whole may suffer considerable costs.

A similar phenomenon, again under environmental uncertainty, is *mimetic isomorphism*, studied by several organizational sociologists (see, in particular, the Institutional Theory put forth by DiMaggio & Powell, 1983). In this case the organizational model is imitated. The strategy, again, would enable savings in costs for research for the best solution as an answer to existing uncertainty. However, the process often becomes more ritual than rational. Indeed, even here the imitated structure may not be the best even if it is much slower and more difficult to assess this than assessing the imitation of a product for instance.

c-2) Legitimization or status. As above, certain enterprises – or certain managers – follow the behavior of others, first of all to seek legitimacy from institutions and their public, i.e. to attach their status to other operators, clearly well-established (Institutional Theory). It is the same as emulation and aspiration in social consumption mechanisms. In this sense the imitation becomes a signal, in order to avoid gaining a negative reputation on the market (economic theory of herd behavior). When situations remain uncertain, some studies have shown how the first imitators are guided

by more rational motivations, as above, whereas later imitators have more symbolic motivations, such as the ones just outlined (e.g., Fligstein, 1985, 1991).

c-3) Preemptive defense of the status quo and reducing rivalry levels. Another reason for an incumbent to decide to follow an innovator even before knowing the outcome of their moves is, using an analogy from football, to keep them covered very closely. If an innovator decides, for instance, to explore a new market segment or a new geographical area, the imitator may assess whether to do the same immediately so, regardless of the action's success, the relative positions would remain the same. The aim of this line of action, undertaken to defend competitive equality preemptively, is naturally to reduce risk for the enterprise. We can observe a similar behavior within the car industry. Toyota is currently the leader in marketing hybrid technologies and, even if the success of this trajectory is still uncertain, its direct competitors are starting to invest in the same direction.

In some cases, especially in concentrated markets, mutual imitation may become a form of tacit tolerance: "divergent strategies reduce the ability of the oligopolists to coordinate their actions tacitly (...) reducing average industry profitability" (Porter, 1979, p. 217. Quoted in Lieberman & Asaba, 2006). The more recent idea of "*mutual forbearance*" (Bernheim & Whinston, 1990) comes from this: certain enterprises would imitate mutual presence in different markets to have more points of contact which would facilitate collusion since it would increase the possibility for counter measures (at present, there is not much empirical evidence on the effectiveness of this strategy).

In all the cases of imitation examined above, it may happen that the imitators are the ones that gain advantage from the initial efforts of the innovative enterprise, in terms of finance and market domination. For example, many innovations in the domestic electronics market (HiFi, VCR, etc.) were developed in the laboratories of Philips, however, their competitors, induced imitators, were the ones able to take advantage of the new technologies extensively.

The reasons for this are shown below. They provide the core motivation for the imitation game, to add to the specific considerations outlined above.

First of all, the enterprises that justify the imitation game back their arguments with the explorer metaphor, arguing that the pioneer, like the explorer, should sustain the high risks and uncertainties related to their research in unknown territories and in many cases, hostile territories. So the explorer may acquire public recognition for their discoveries, but the benefits of their research may actually be reaped by those who are able to take advantage of the discoveries.

Indeed, the imitator may:

- ◆ *learn from the mistakes of the innovator* and not spend their resources on developing products without market potential and instead draw on the experience of others, i.e. their products and services which better meet the needs and benefits expressed by customers;
- ◆ *avoid or reduce financial efforts* which are instead sustained by the first mover during the initial phases of their research and development and in systems engineering;
- ◆ *focus attention and resources on the development of the technological process* instead of focusing on the technology of the product or service, and in doing so improve both quality and production efficiency;
- ◆ avoid the trap of inertia innovators may fall into where they are less inclined to make improvements and incremental moves to the innovation;
- ◆ *avoid costs for customer education and awareness* of new products, which are instead sustained by the innovator;
- ◆ *take advantage of experience gained in other markets*. The ease of an imitator entering a new market also depends on the experience and knowledge gained in the manufacture and sales of products related or near the innovation. These experiences, technologies, of marketing and reputation increase the ability and speed of reaction to the initiative of the first mover;

- ◆ also have *more freedom of movement*, attempting to change the rules of the competition game set by the innovator. Because of its size and resources available, the pioneer is often forced to cater to a certain market segment. Later developments in demand may create new opportunities for later entrants, who may take up more desirable and attractive positions and invest in all the other segments of the market that are not covered and guarantee large sales volumes.

The imitation game is also justified when acknowledging that the idea of the innovation can be assimilated into a process of *incremental improvements* rather than a radical technological discontinuation, fruit of an inventor's creativity, who dreams up the product or service and then develops it on his own from both a technological and commercial standpoint. Even if that may happen, it should be noted that it is rather rare. Products resulting from radical technological breakthroughs are not dropped on the market. They are usually the result of a long incremental process, the fruit of constant technological and production improvements that follow up until the launch of the first product offered by the pioneer who invented it. This is because in the beginning pioneer products have technical imperfections and are still primitive in their features and design. They can not guarantee performance levels that satisfy the expectations of target customers. These defects allow the imitator (*later entrant*) to enter at a later stage with products and services that can compensate and satisfy market needs with innovations and improvements.

Enabling Factors: What Favors Imitation

The speed in which newcomers or incumbents can copy the innovation generated and spread by the first mover depends on several factors:

- ◆ absence of legislation to protect manufacturing secrets or patents for the innovation;
- ◆ encouragement from customers for other manufacturers to become secondary or third tier sources for their procurement;
- ◆ suppliers that may provide and spread raw materials and critical technologies for the manufacture of the new product or service;
- ◆ difficulty in imitating the production process;
- ◆ spreading and gaining knowledge of the innovation;
- ◆ inability (or will, for induced imitation) of the first mover to build entrance barriers against potential rivals.

In addition, as mentioned, also environmental uncertainty is a factor that may favor imitation as seen in mimetic isomorphism and information cascades. The last condition that may favor particular imitation strategies is a concentrated or static competition context: it has been shown how the reason is in preemptive defense of the status quo that a systematic and mutual imitation can guarantee under these circumstances.

The benefits gained by the innovator, in any case, are not substantial if there are no solid and strong barriers to stop rival imitation. From this point of view, the effectiveness of mechanisms to protect innovation benefits is the most troubling aspect for the innovative enterprise. Empirical studies have shown that legal protection based on patents or licenses are less effective. In the opinion of enterprises belonging to 12 industries, these forms of protection are suitable to defend innovations from imitation in the following cases (Teece, 1987): 65%, pharmaceuticals industry; 30%, chemicals industry; 10-20%, oil and steel industries; less than 10%, in the industries of industrial machinery, textiles, automotive, tires, office supplies, etc.

Other studies have shown that 60% of the innovations and patents registered are imitated in a span of four years and the development costs of the imitator are less than 35% of those sustained by the innovator (Mansfield, Schwartz, & Wagner, 1981). Further studies show that for innovations not protected by law, imitation time is reduced to less than a year (Jacobson, 1992).

Successful Strategies for Product Imitation

Imitation can be pursued with several ways of market conduct necessary for the follower to stimulate and persuade customers to run the risk of abandoning the products or services of the innovator (Schnaars, 1994). Successful strategies can be reduced to the following ones:

- 1) *Exercise power*, market power that enables competing with a product and the same position as that of the innovator.
- 2) *Repositioning the innovator's product*. The product is essentially the same, but it is positioned based on one of the following: *lower price and/or quality; higher quality; new applications;*
- 3) *Lateral entrance*, i.e. competing with a similar products, but in different markets.

The options introduced are outlined below:

1) The use of market power, as the primary conduct of the imitator is when the follower decides to enter the market, created by the innovator, breaking down the barriers set up for protection, using all the critical mass of their resources and market drive. A perfect example is the reaction of Microsoft to Netscape Navigator. They used all their market power to diffuse their browser Explorer.

2.1) Repositioning can first of all take place with a move based on *lower price and/or quality* following three different conducts:

- ◆ *some quality, lower price*: the imitator offers the market a replica of the innovator's product but at a more competitive price. This is the strategy of Lexus, that imitates Mercedes and BMW, provides similar quality, but for relatively lower prices;
- ◆ *downgrading*: instead of imitating the innovator, the imitator downgrades features in order to offer certain large market segments a version of the innovator's product at a more accessible price. It is the strategy of Funai, for example, offering LCD and other electronics at discounted prices, sometimes under the Emerson, Sylvania, and Symphonic brands. Funai recently became the supplier for TVs manufactured under Walmart's house brand, Durabrand.

2.2) For repositioning with higher quality, the goal of the imitator is to be considered as the second best. To this end, their strategy is not to clone the innovator's products, nor to compete based on price, but to arouse the interest of customers through incremental improvements to the pioneer's product. This is usually the case of second generation: the efforts of the imitator are geared towards searching for ways to strengthen features or performance levels of the product or service, then launching on the market a second generation of products known for their improvements made over previous versions. Google, for example, was a second generation search engine, organizing its results by peer ranking. Providing better performances, they overcame the first generation products, like Yahoo;

2.3) Another way to reposition an imitation is through product reconceptualization: the imitator exploits the innovation of the product, but changes its intended use and application. This is possible by redefining the structural features or performance of the product being imitated. As anticipated, this is the case of the Indian Tuc Tuc, as a reconceptualization of the Italian Ape Piaggio;

3) Lateral entrance, as mentioned, is the strategy followed by the challenging imitator that attempts to satisfy the same needs, but in markets still untapped by the innovator. "Lino's Coffee", for instance, is a new chain following the strategy of "Starbucks", but in Italy, that is the only western market untapped by the American giant.

Conclusion

The moves made by the imitator, as seen, are made with a wide range of options that require market drive and resources that help the follower in eroding and breaking down the competitive advantage acquired by the innovator. The first movers, according to their market position, can pre-

vent or defend their market dominance by building or raising preemptive barriers. Nonetheless, the article reviewed a certain number of real cases, circumstances and strategies that may still favor the imitator, which, eventually, will lead the competition.

References

1. ACNielsen. (2006). *The Power of Private Label 2005*, Schaumburg, IL: Author.
2. Abernathy, W.J. (1978). *The Productivity Dilemma*. Baltimore, MD: The Johns Hopkins Press.
3. Bernheim, B., & Whinston, M.D. (1990). Multimarket Contact and Collusive Behavior. *Rand Journal of Economics*, 21, 1-26.
4. Bikhchandani, S., Hirshleifer, D., & Welch, I. (1992). A Theory of Fads, Fashion, Custom, and Cultural Change as Informational Cascades. *Journal of Political Economy*, 100, 992-1026.
5. Christensen, C.M. (1997). *The Innovator's Dilemma*. Boston, MA: Harvard Business School Press.
6. DiMaggio, P.J., & Powell, W.W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48, 147-160.
7. Fligstein, N. (1985). The Spread of the Multidivisional Form among Large Firms, 1919-1979. *American Sociological Review*, 50, 377-391.
8. Fligstein, N. (1991). The Structural Transformation of American Industry: an Institutional Account of the Causes of Diversification in the Largest Firms, 1919-1979. In Powell, W.W. & DiMaggio, P.J. (Eds.). *The New Institutionalism in Organizational Analysis*. Chicago & London: The University of Chicago Press.
9. Hopkins, D.M., Kontnik, L.T., Turnage, M.T (2003). *Counterfeiting Exposed: Protecting Your Brand And Customers*. Hoboken, NJ: John Wiley and Sons, Inc.
10. Jacobson, R. (1992). The Austrian School of Strategy. *Academy of Management Review*, 17(4), 782-807.
11. Katz, M.L., & Shapiro, C. (1985). Network Externalities, Competition, and Compatibility. *The American Economic Review*, 75(3), 424-440.
12. Katz, M.L., & Shapiro, C. (1994). Systems Competition and Network Effects. *Journal of Economic Perspectives*, 8(2), 93-115.
13. Levitt, S.D. (2006). An Economist Sells Bagels: A Case Study in Profit Maximization. *NBER Working Papers*, 12152. Washington, DC: National Bureau of Economic Research, Inc.
14. Lieberman, M. B., & Asaba, S. (2006). Why Do Firms Imitate Each Other. *Academy of Management Review*, 31(2), 366-385.
15. Lippman, S.A., & Rumelt, R.P. (1982). Uncertain Imitability: An Analysis of Interfirm Differences in Efficiency under Competition. *Bell Journal of Economics*, 13(2), 418-438.
16. Mansfield, E., Schwartz, M., & Wagner, S. (1981). Imitation Costs and Patents: An Empirical Study, *The Economic Journal*, 91, 907-918.
17. Ounjian, M.L., & Carne, E.B. (1987). A Study of the Factors Which Affect Technology Transfer in a Multi-location Multi-business unit Corporation, *IEEE Transaction on Engineering Management*, 34(3), 194-201.
18. Porter, M.E. (1979). The Structure within Industries and Companies' Performance. *Review of Economics and Statistics*, 61, 214-227.
19. Rivkin, J.W. (2000). Imitation of Complex Strategies. *Management Science*, 46, 824-844.
20. Schnaars, S.P. (1994). *Managing Imitation Strategies*. New York, NY: The Free Press.
21. Shapiro, C., & Varian, H.R. (1999). *Information Rules: A Strategic Guide to the Network Economy*. Boston, MA: Harvard Business School Press.
22. Szulanski, G. (1996). Exploring Internal Stickiness: Impediments to the Transfer of Best Practice Within the Firm. *Strategic Management Journal*, 17, 27-43.
23. Teece, D.J. (1987). Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy. In D.J. Teece (Ed.), *The Competitive Challenge: Strategies for Industrial Innovation and Renewal* (pp. 185-220). Cambridge, MA: Ballinger.
24. Utterback, J.M. (1996). *Mastering the Dynamics of Innovation*. Boston, MA: Harvard