How Technological Determinism Shapes International Marketing

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ABSTRACT

In the late 1990s, many firms - flush with cash from 'irrationally exuberant' investors - made huge investments in information and communications technologies (ICT) to extend market reach and increase revenues. Shortly after the dot com bust, only a few of these ardent technology adopters thrived, the technology investments of only a fractional few yielding substantive payoff. For many, it seemed all but certain that the concept of technological determinism was doomed. Through exploration of the (r)evolutionary role of ICT in global marketing strategies and positioning technology as an enhancer to the original four P's of marketing, this paper develops a conceptual model integrating aspects of technological advancement within the context of international marketing strategy.

Key Words: Global Management, Strategic Marketing, Technological Determinism, New Marketing Paradigm

INTRODUCTION

ll companies in global markets are continuously seeking competitive advantage, which may be described as a set of abilities and characteristics through which a firm is regularly able to convince potential customers to buy its goods and services rather than those of other competing suppliers. Some academicians (Quelch, 1999; Ojah and Monplaisir, 2003) emphasize that competitive advantage is derived from innovation. It is also sustained through creativity or from factor endowments which can generate (a) cost advantages, (b) product differentiation, or (c) a successful combination of the two (Heckscher, 1919; Porter, 1985). Further research has extended competitiveness models, suggesting the possibility of *predicting* the potential transformations of industries - especially in terms of how their products are marketed and sold - by fully understanding the capabilities of new information technologies (Rugman, 1980; Yip, 2003; Buckley and Ghauri, 2004; Gabberty and Vambery, 2007). The concept of *technological determinism* is one of the critical success factors in global marketing competitiveness. In brief, technological determinism may be described as causing (1) major social and historical changes at the *macrosocial* level of social structure and processes and/or (2) subtle but profound social and psychological influences at the *microsocial* level of the regular use of particular kinds of tools (Chandler, 1996). This paper develops a conceptual model integrating aspects of technological advancement within the context of international marketing strategy.

INNOVATION AND THE END OF TECHNOLOGICAL ASCETISM

The recent flurry of technology-driven business activity since 2000, such as consumer-led ecommerce spending, may signal a return (albeit on a smaller scale) of the frenzy of Internet activity witnessed at the end of the 20th century. Now that many of the misunderstandings surrounding what ICT can and cannot do are better understood, the move toward the strategic use of ICT in strategic marketing is likely to continue unabated as the mistakes of the past are scrutinized and strategies altered accordingly. This drive toward incorporating ICT into the

strategies of many industrial sectors is reflected in the by-lines of numerous leading business magazines, often joining the term 'technology' with the word 'innovation'.

Increasingly, senior managers view some components of ICT as commodities that may be outsourced, allowing firms to focus more on strategy and other key areas within the firm. This does not necessarily imply that ICT is not a significant part of the corporate strategic marketing mix but rather signifies that certain technology components may be constructed more cheaply and with fewer errors if non-critical components are partially outsourced. Notably, there are instances in which entire data centers are outsourced as a means to achieve a strategic leap over competing firms (Carr, 2005). While no clear blueprint for outsourcing yet exists (though many models have been offered), this trend is likely to continue.

From the managerial perspective, further research is needed into the realm of strategic planning that incorporates technology into the mindsets of top business planners. While technological determinism may have lied dormant in recent years, the notion of the strategic and competitive use of ICT and the accompanying evolution of business uses suggests a continuing trend of discovering strategic, competitive uses of technology in organizations and the use of technology to foster innovation and creativity. Further, identification of the linkages between ICT, innovation, and knowledge management also require identification and deeper examination (Gabberty & Thomas, 2007).

REVISITING TECHNOLOGICAL DETERMINISM

While some thought concerning the obsolescence of technological determinism dominated much of the research agenda during the late 1990s and early years of the new millennium, the notion of technological determinism viewed from various perspectives remain relevant (Lehman, 1986; Orlikowski, 1992; Straub et al., 1995; Brancheau et al., 1996; Venkatesh and Davis, 1996; Mason, 1997; O'Shea and McBain 1999; Orlikowski, 2001; Macdonald, 2002; Shaw, 2002). Recent spending on ICT by major corporations does not come anywhere near the unrestrained levels exhibited during the latter part of the 1990s, but spending continues as multinational corporations like Dell, IBM, Microsoft, Oracle and other technology firms consistently demonstrate annual revenue growth and impressive performance in their respective equity markets by selling increasingly more products to a world hungry for technology and all that it imparts.

For those firms that hang onto the belief that carefully planned acquisition and deployment of information and communications technology leads to a competitive advantage that affords firms a better opportunity for success than if they limited their technology investments, the future looks positive. This is especially true in the fast-paced universe of international marketing, where instantaneous access to information about ever-changing customers is a crucially independent variable perpetually sought by marketers. The perpetual cycle of pulling in information about the newest conditions about the marketplace triggers creation of another set of marketing strategies, themselves becoming the pathways to the next set of competitive successes in market retention, sales growth and market share expansion. Through the continued, controlled and effective use of ICT, these cycles can be regenerated and expanded. The results are survival, profitability and growth.

As trade agreements between nations flourish and the World Trade Organization paves the way for even more cross-border trade agreements, examination of ICT infrastructure development and scrutiny of how the application of this competitive variable enables firms to vie for market share globally becomes an important topic warranting subsequent study.

However, it is noteworthy here to remind the reader once again about the dangers inherent in maintaining a techno-populist mentality; that is, the belief that establishing an ICT-based infrastructure enabling customer access

¹ Examples include "Twenty-Five Years of Innovation", BusinessWeek October 18, 2004; "The Strategy – Darwin and the Sermon: Innovating Within Established Enterprises", Harvard Business Review, July – August 2004; "Developing a Global Chain of Innovation", MIT Sloan Management Review, Summer 2004; "Thriving in the Era of Open Innovation", Spring, 2003; "The Innovation Economy: The Technologies and New Ideas that are Changing the World", BusinessWeek, October 11, 2004; "The Innovator's Prescription: Invest Right, Scale Up, Brand Boldly, Demand Returns", Strategy + Business, Summer 2004.

to a firm's product web site automatically leads to changes in consumer behavior. In stark contrast, technology devotees know all too well that corporate relationships with customers may not improve through inclusion of globally-dispersed "netizens" who surf the net and seek suppliers offering similar goods and services at competitive prices from competing firms (Harrison-Walker, 2002).

ICT AS INFLUENCER OF ORGANIZATIONAL STRUCTURE

The incorporation of ICT into the business function has a cause and effect relationship on firm organization. The empirical research of the last thirty years (especially during the dot com era) suggests that many organizations are unable to grapple with technological issues facing the firm. One reason why this is so is because organizations that try to take advantage of ICT's inherent capabilities are not necessarily ready for the complex changes caused by ICT penetration throughout the enterprise, as well as the ability of some firms to radically realign themselves structurally. One startling statistic supporting this view is associated with the time interval between 1993 and 1995, when the failure rate of Business Process Re-engineering (BPR) was 75%. Many enthusiastic managers took on the challenge of implementing enhanced processes, but due to their suboptimal understanding of business strategy or the unforeseen consequences of instituting a BPR program, they failed to reap maximal benefits (Forgionne, 2000; Brown et al., 2003).

Today managers, politicians, and executives are increasingly faced with the challenges of worldwide operations and the need to effectively compete and coordinate far-flung centers of operation. Without the normal support systems typically available from well-developed hierarchical organizations, they are nonetheless expected to improve customer satisfaction levels, develop new customer relationships, and provide competitive strategies by using modern technologies wherever appropriate. Ideally, such changes are now being accelerated in lockstep with the proliferation of ICT. Modern *knowledge workers* are nonetheless faced with growing information needs and data obtainable from non-interoperable systems, the need to coordinate operations over longer physical distances and the challenges associated with flattened organizational structures (i.e., "do more with less"). Accordingly, they require constant training in order to be effective (Fellenstein & Wood, 2000).

ICT AS INFLUENCER OF RELATIONSHIP MARKETING

Market analysts and economists have identified *inter alia* three related variables that serve as mechanisms driving business growth (Porter & Sachs, 2002). The first is the efficient *allocation of resources*, based on market competition and the division of labor. The second is *capital accumulation*, whereby national savings are converted into increased capital per worker and the output per worker tends to rise. Note that productive capital includes not just the plant and equipment of the business sector, but also the human capital that results from investments in education, health, and on-the-job training. The third mechanism in business growth is *technological advancement*.

Improvements in technology (both in new products and better, more innovative ways of producing goods) can be achieved by either creating a truly new technology or by adopting a technology that has already been developed. When applied to ICT, the first option is called *technological innovation*; the second, *technological diffusion*. All three mechanisms - division of labor, capital accumulation, and technological advance - are important, but it may be argued that technological advance is the most fundamental of the three. Without technological advance, the benefits of the other two mechanisms are muted, so while they push the standard of living higher, they do not necessarily prolong the associated effects as would consistent improvements in ICT (Wolcott, 2001; Fichman, 2004).

Corporations and entire industries can enhance business growth by making ICT a core competency. Simply defined, a *core competency* is a basis for competitive advantage because it represents a specialized expertise that many or most rivals do not have or cannot readily match (Hamel & Prahalad, 1990). Understanding the emergence of telecommunications as a core competency calls attention to fundamental changes taking place in the very structure of society (Litan & Rivlin, 2001).

Advances in ICT have been self-perpetuating in many industrialized nations. Each new technological innovation triggers yet further innovation, in a kind of chain reaction that fuels long-term business growth. Boeing's use of ICT in the 1990s, for example, enabled the firm to use Computer-Aided Design and Computer Assisted Machining (CAD/CAM) to design the highly successful 777 aircraft, which flew its first test flight without a single physical mock-up version having been flown in a wind tunnel (Norris, 1995).

ICT AS INFLUENCER OF INTERNATIONAL MARKETING

There are numerous forces interplaying against (or with) each other that ultimately lead to uncertainty in international marketing. These are the (1) social forces which affect people and their behavioral patterns, (2) political forces which apply pressure to global [re: business] relations, (3) technical forces that influence the perceived need of technology users, and the (4) economic forces that govern the supply of capital used to purchase goods and services (Gabberty & Vambery, 2003).

In the context of the four forces exerting pressures on international marketing, the most radical change in marketing is the shift in power from the producer to the merchant to the consumer (Dicken, 2003). Such a radical shift is supported by the widespread reach of the Internet, whose extent is virtually limitless yet is still underutilized. It may be posited that only a handful of multinational corporations continually monitor newsgroups, mailing lists and chat rooms to determine the likes, dislikes and preferences of regional and global consumers. Accordingly, the Internet presents global businesses with the ability to directly communicate with consumers and as such, represents a critical tool available to support the marketing function. The Internet also offers the promise of delivering products and services directly to the customer in a one-to-one real-time relationship. This global reach by producers frees the user from the pervasive marketing, advertising, and sales intermediaries that heretofore controlled and channeled information by acting on behalf of producers and other intermediaries to the benefit of consumers and potentially to the disadvantage of firms operating in the global marketplace (Schiller, 2000).

Most businesses have the capacity to compete in two parallel universes: the physical world of the *marketplace* and the loosely-defined electronic *marketspace*. Unlike current marketplaces such as retail stores, marketspace encompasses electronic, informational, or technological arenas in which business activity occurs, margin is created, and value can be extracted using new marketing channels. Some of the throttling mechanisms that govern its growth are:

- The cost of ICT: In developed economies, communication channels are mature and can handle the extra traffic generated by e-commerce activity. In some developing or underdeveloped economies, this is not the case and communication is often carried out using slow dialup modem lines and Internet service providers are few.
- Payment methods associated with e-Commerce: By virtue of the insecure way in which payments are
 made, some ethnic groups shunning credit cards are less likely to participate in e-Commerce transactions.
 In Asia for example, credit cards are not as widely used for international transactions as they are in North
 America. Also, users both in the U.S. and Asia share the common fear of sacrificing security when entering
 credit card account numbers over the Internet.
- Concerns over demographic data: Many marketers in sophisticated firms have taken advantage of the 'cookie' that is used to collect information about Internet users and the sites they frequent. These firms often make the claim that they do not sell this information to third parties. Nevertheless, there are very few regulatory agencies that police this often overlooked aspect of ICT and therefore the consumer is obliged to instill trust in those companies that use cookies as part of their marketing strategy. For users in some nations, this is even more of a problem since fear of government reprisal may pervade the emotions of ICT users.
- Consumers' desire to touch and feel the products they buy: Though not a major issue with electronic devices such as computers or DVD players, this human desire remains problematic for users contemplating items such as garments and other soft products whose intangible features are difficult to describe. Some companies marketing these kinds of products have applied solutions to the problem by employing sophisticated software such as that used by clothing purveyor Lane Bryant, whose Me@LB application

allows customers to shop its virtual store and try on various clothes using electronic models whose physical attributes are user-defined and allow the consumer to 'look' before they buy.

THE EXPANDING UNIVERSE OF THE INTERNATIONAL MARKETER

As the expansion of the *marketspace* is no longer limited to a particular geographic area or consumer segment, the role of global marketers is widening in scope and deepening in complexity. Catering to a diverse buyer base becomes increasingly complicated as marketers face the need to bridge the social and cultural gaps to effectively reach out to their customers spread around the world.

The associated global competitiveness resulting from increased numbers of firms vying for the same pool of consumers causes marketers to change their business strategies. As shoppers are increasingly cost sensitized, smaller retailers that were previously able to charge higher prices for similar products are forced to rethink the way they conduct business. Further, as firms opt to enter global markets, their ability to transfer knowledge about those markets is influenced by their ability to leverage ICT assets to their network of subsidiaries operating within these markets (Martin & Salomon, 2003).

Not only are shoppers chasing lower prices for the goods and services they buy, they are also more knowledgeable and more cost conscious than ever before. The explosion of available information on the World Wide Web is providing customers with yardsticks to measure and compare similar goods and services online, abilities they lacked prior to the opening up of the Internet for commercial endeavors (McKnight and Bailey, 2000). As such, the Internet and its associated e-commerce activities have become the crucial leveraging devices for many consumers.

The gradual maturation of ICT from the early 1980s to its dispersed global reach in the new millennium has radically affected the world of international marketing. In this electronically-mediated marketing world, practitioners are challenged with the need to increase their product awareness just to maintain the same customer base they commanded for years while simultaneously exploiting the Internet's global reach to attract more consumers. In Figure 1 the prevailing ICT prerequisites are illustrated and identify the essential international marketing capabilities and optimal process flows that global marketers must be aware of when considering marketing to a globally-dispersed consumer base. [INSERT FIGURE 1 HERE]

The customer has now become king and this reality holds for many households with access to the Internet (Keen & McDonald, 2000). Consumers dictate what they want, where they want it, in the quantity they want, and what price they are willing to pay for it. If products from firm 'A' become unavailable – regardless of the reason – then consumers point their browser to the web site of firm 'B' and continue shopping. Gone are many customer loyalties, developed by merchants and enjoyed for many years until recently; gone too is recidivism, the tendency to lapse into repetitive patterns of behavior from which marketers have derived benefit but which they may have interpreted as customer loyalty (Feeny, 2001).

A PROPOSED MODIFICATION TO THE MARKETING PARADIGM

The science and practice of strategic and managerial marketing have gone through many advances since the days when the key components of the marketing mix were identified by the "four P's": <u>Product, Place, Price</u>, and <u>Promotion</u> (Grönroos, 1994)

Despite the many evolutionary changes that have become important components of the world of global business, the four P's remain critical components of the fundamental international marketing mix. However, the early years of the twenty-first century are seeing the incorporation of a revolutionary variable with deterministic impacts on marketing competitiveness; it is the adaptation of information and communications technology and the deliberate and aggressive use of these technologies as tools for marketing and business development.

As enterprises move further into the twenty-first century, global marketing fundamentals are enriched by this evolving and essentially deterministic variable. Both strategists and practitioners have and will have to continue to plan, create, and make excellent use of the fifth variable, ICT, or more succinctly, *technology*.

The crucial interface between marketing on the one hand and information and communication technologies on the other hand has merged into an integral and indispensable part of the global marketing mix. Therefore, it is proposed that the "four P's" acronym of marketing fundamentals be enhanced, updated, and contemporized for the twenty first century with the addition of "information and communications technology".

Thus, the new acronym reference to the basic marketing mix becomes **P-P-P-T**. In this context, "T" encompasses all aspects associated with the more recognized term, ICT.

Likewise, in order to gain competitive advantage, a nation and its domestic marketers should extend their ICT infrastructures and capabilities as extensively as possible to affect the addition of technology (**T**) to the basic **P-P-P** of their respective marketing mixes, yielding a more appropriate globally competitive acronym, **P-P-P-T**.

To emphasize, the conclusion and message of this paper is that ICT is no longer just an *essential* tool for marketing victories. Rather, the "T" variable has matured into a crucial strategic component of the marketing mix and is evolving into one of the five deterministic variables of global marketing strategy, impacting the probability of success of marketing campaigns, and aligning the firm on a path toward sustainable global marketing competitiveness (SGMC), as demonstrated in Figure 2. [INSERT FIGURE 2 HERE] By proposing technology as a separate element of the marketing mix, the paper does not advocate the view that traditional marketing elements are not affected by technological change. Rather, it is put forth that "technology" and "ICT" have advanced from the status of essential tools aiding nearly all marketing functions to the status of *strategic drivers*. As such "technology" complements the other recognized strategic drivers as well as national and firm-specific competitive advantages and managerial leadership capabilities in enhancing the development of sustainable competitiveness in global markets. Similarly, the addition of T to the "four P's" of the marketing mix does not imply that T replaces or de-emphasizes any of the previously established marketing or organizational success determinants. Rather, technology, with its new higher-order role, needs to be and has evolved to become one of the deterministic marketing strategy components.

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Figures

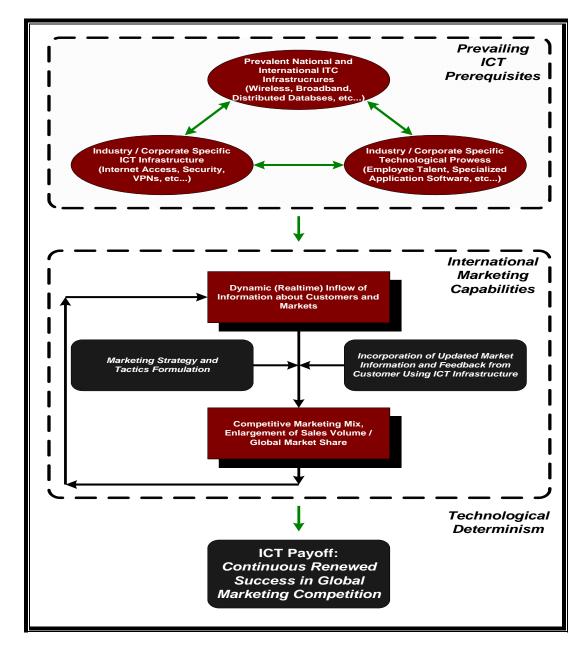


Figure 1: ICT-Influenced Dynamism Affecting Optimal Process Flow for Strategic Global Marketing Competitiveness

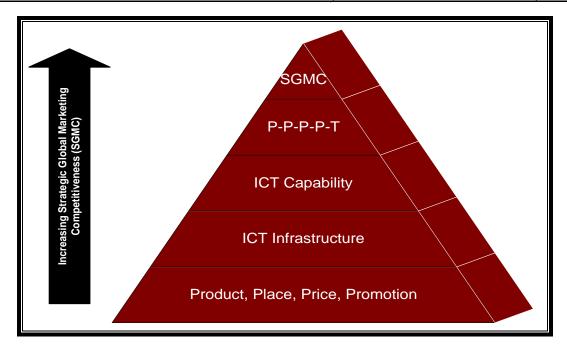


Figure 2: ICT Enhancers of Strategic Global Marketing Competitiveness

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