

Marketing Operations Efficiency and the Internet: An Organizing Framework

Abstract

A business can leverage the potential of the Internet to enhance the *effectiveness* of its competitive strategy as well as the *efficiency* of its operations. While the former has received considerable attention in literature, there is a dearth of research on the later. This paper focuses on leveraging the Internet for enhancing the efficiency of a business' *marketing operations*. *We propose* an organizing framework that provides insights into opportunities for achieving marketing efficiency gains in the context of the *interactivity*, *personalization* and *addressability* characteristics of the Internet.

Keywords: Operations Efficiency, Marketing Operations, Internet Operations, Marketing Costs

Marketing Operations Efficiency and the Internet: An Organizing Framework

Marketing strategy effectiveness is contingent upon the appropriateness of the amount of marketing resources, types of marketing resources and pattern of deployment of marketing resources employed by a business to facilitate the achievement of competitive positional advantages and other marketing objectives. *Marketing operations efficiency* can be viewed as the ratio of the amount of marketing output generated to the amount marketing resource inputs employed to implement a marketing strategy. The evolution of the field of marketing is indicative of a greater emphasis on the *effectiveness* aspects of marketing strategy relative to *efficiency* aspects of marketing operations. However, a number of authors have highlighted the need for research on the later (Day and Montgomery, 1999; Sheth and Sisodia, 2002). Day and Montgomery (1999) note that growing concerns about the low productivity and high costs of marketing activities threaten to diminish the relative standing and influence of the marketing function in organizations. Regardless of whether the strategy pursued by a business is cost leadership, differentiation, focused cost leadership or focused differentiation, achieving and sustaining a competitive advantage in an efficient manner is an imperative for businesses. As Schendel (1985) notes, the competitive strategy of a business must deliver a competitive advantage in an efficient manner.

The Internet has become a major component of the marketing strategy and operations of businesses. In the aftermath of the evolution of the competitive market environment from a physical marketplace to one encompassing the physical and electronic marketplaces, researchers in marketing have focused on myriad issues relating to competing in the new environment. They include: (1) the role of the Internet in promoting relationships with consumers and other partners (Ansari and Mela, 2003; Hoque and Lohse, 1999), (2) the effect of the Internet on the promotion,

pricing and communication strategies of firms (Stewart and Pavlou, 2002; Zettelmeyer, 2001;), and (3) the influence of the Internet on industry structure and the marketplace (Alba et al., 1997; Varadarajan and Yadav, 2002). Contributions from allied fields such as management information systems (Bakos, 1991; Brynjolfsson and Smith, 2000) and economics (Shapiro and Varian, 1999) complement the above. Here again, relative to *enhancing the marketing strategy effectiveness using the Internet, enhancement of marketing operations efficiency* has received considerably less attention.

Against this backdrop, this paper focuses on leveraging the Internet for enhancing the efficiency of marketing operations. An organizing framework is proposed that provides insights into leveraging the Internet for achieving marketing efficiency gains in the context of *interactivity, personalization* and *addressability*. The focus on these characteristics is guided by prior research highlighting these as the distinguishing characteristics of Internet communication (Ansari and Mela 2003; Petrisson et al, 1997; Yadav and Varadarajan 2005). While prior research highlights the significant scope for efficiency gains in business-to-business (B2B) settings (Day et al 2003; Jap and Mohr 2002), efficiency gains in business-to-consumer (B2C) settings is relatively less explored. The scope of this paper includes enhancing the efficiency of a business' marketing operations in both B2B and B2C settings.

Leveraging the Internet for Enhancing Marketing Operations Efficiency: An Organizing Framework

Figure 1 presents an organizing framework for leveraging the Internet for enhancing marketing operations efficiency in the interactive, personalization and addressable environments. As shown, the costs that are impacted (lowered) include (1) decision information costs, (2) quality costs and (3) factor costs. Also shown in Figure 1 are the theoretical underpinnings of the

costs impacted, and *specific cost components* impacted by leveraging the Internet. For instance, the link “A1a→ D1, E1, F1, F2” in Figure 1 denotes that deployment of the Internet in the realm of the interactive environment for *online account management* (A1a) can enable a business to lower its marketing costs pertaining to *information processing* (D1), *error and rework* (E1), *labor* (F1) and *materials* (F2). The potential avenues for marketing efficiency improvements and costs are intended to be illustrative and not exhaustive.

Insert Figure 1 about here

Three types of saving are indicative of efficiency gains in marketing operations: (1) decision information costs, (2) quality costs and (3) factor costs. *Decision information costs* result from moving information through an organizational hierarchy to facilitate decision making (Gurbaxani and Whang, 1991) and include information processing costs. *Information processing costs* include costs of transforming information from analog form (documents) to digital form (centralized databases) (Aron and Singh, 2002). *Quality costs* are incurred to ensure that the products or operations conform to specifications (Ittner, 1996). Researchers generally distinguish between two dimensions of quality cost -- conformance costs and non-conformance costs (Crosby, 1979; Juran, 1988). *Conformance costs* refer to the cost of achieving conformance to specifications which includes prevention and appraisal costs. *Non-conformance costs* refer to the cost of failure to conform to specifications and include internal failure related costs (i.e., rework and spoilage), and external failure costs (i.e., liability charges and lost customer good will). This paper focuses on non-conformance costs. *Factor costs* increase in proportion to the level of activity (Klein, 1984). Traditionally, they are used in the context of production activities encompassing material and labor costs. Factor costs in marketing operations are comprised of labor costs, material costs and miscellaneous costs (e.g., travel and rentals). Akin to the factors of

production, costs incurred in each of these factor inputs are directly proportional to the level of marketing activity.

The drivers of the marketing efficiency gains accrue primarily because of the unique underlying cost structures of fixed cost dominated businesses. Akin to information products (e.g., software) that are characterized by ‘unit one’ cost structures -- the cost of developing and producing the first unit being relatively high compared to the cost of reproduction (John et al, 1999) -- several marketing activities are also impacted by one time fixed costs. For example, fixed costs incurred in establishing an infrastructure for marketing over the Internet (website development, servers, databases, etc.) is largely invariant with respect to the volume of use (Sheth et al, 2000). The instant scalability of the Internet infrastructure implies that unit costs of information provision in the online environment would tend towards zero with an expansion in reach (see Zettelmeyer, 2000). The next three sections focus on the implications of the one-time fixed cost structure of the Internet enabled environment for streamlining marketing operations management in the interactive, personalization and addressable environments.

Leveraging the Interactivity Characteristic for Enhancing Marketing Operations

Efficiency

Interactivity refers to the degree to which computer-mediated communication is perceived by the communicating entities to be (a) bi-directional, (b) timely, (c) mutually controllable, and (d) responsive (Yadav and Varadarajan, 2005). By leveraging the interactivity characteristic of the Internet, firms can enhance marketing operations efficiency in areas such as post sales customer relationship management (CRM), market research, and knowledge sharing.

Post Sales CRM. With the emergence of standardized communication networks (e.g., the Internet), there has been an exponential growth in persuasion efforts by sellers to change the role

of buyers from service recipients to service co-producers. A discussion on the relevance of these trends for enhancing efficiency of post sales CRM activities follows.

Online account management: Lower decision information, quality and factor costs (A1a → D, E, F). A number of transaction intensive industries (e.g., utilities such as telephone and cable television and financial services such as banking, credit cards and insurance) are characterized by a large customer base and transactions that are repetitive in nature (e.g., periodic provision of billing information). In such industries, on average, paper based traditional billing methods, cost from \$1.00 to \$1.50 per invoice, including the cost of printing invoices and processing of payment information. The potential cost savings that could result from electronic bill presentation and payment -- switching from paper based billing to electronic billing -- can be of the order of 20 to 30 percent (Au and Kaufman, 2000).

Leveraging self-service technologies such as automated teller machines (ATMs) have enabled firms to substantially lower customer service costs (Meuter et al., 2000; Parasuraman, 1996). However, there are differences in the underlying cost structures of tools such as ATMs and the Internet. While the fixed cost of an ATM is fixed only for a certain volume of users, the fixed cost of establishing the Internet infrastructure is almost invariant with respect to the number of users. Highly scalable operations further imply that the cost of implementing certain aspects of customer retention programs (e.g., frequent flyer programs) will approach zero with an increase in the size of the customer base. Case in point:

In addition to online enrollment in frequent flyer programs and account management (i.e. customers being able to access an airline's website to check their mileage balance and review their account history), a number of airlines offer customers the ability to redeem frequent-flier miles over the Internet for awards. In order to encourage customers to redeem frequent-flier

miles for award travel and upgrades over the Internet, airlines offer incentives (e.g., 1000 bonus miles) for redeeming miles for travel awards over the Internet and levy a transaction fee when redeeming miles with the assistance of the airline's reservation agent (PR Newswire, 2007).

Online product warranty registration: Lower quality, decision information and factor costs (A1b → D, E, F). Warranties constitute an important element of the marketing mix. Sellers generally employ varying combinations of price and warranties in an effort to cater to heterogeneous consumer preferences. The importance of product warranties to businesses is underscored by the fact that about 50% of the operating profits for large consumer electronics firms are derived from marketing extended warranties (*Business Week*, 1991). Given the role of warranties in signaling product quality and enabling price discrimination, businesses need to predict and estimate the total warranty costs. Total warranty costs include costs related to product failures, referred to as *internal failure*, and costs associated with warranty claims processing, referred to as *external failure* (Miguel and Pontel, 2004). Processing warranty claims is inherently labor-intensive because of the need to enter data into several systems and sort through files of warranties on products and components. Use of multiple systems, duplication of entries, data input errors and inconsistencies in claim closure frequently result in longer reimbursement cycles and higher expenditures. Businesses can enhance the efficiency of this process by facilitating online product registration and warranty claims processing. The source of efficiency gains stem from lower labor costs (due to elimination of the need to manually input data to transform it from analog to digital form), factor material costs (cost of printing warranty cards) and quality costs (lower potential for error).

Online technical assistance: Lower decision information and factor costs (A1d → D, F). Post sales CRM activities are characterized by bi-directional information flows between a firm

and its customers. As a consequence, businesses expend considerable amounts of resources managing ongoing customer relationships. Although the costs of providing technical assistance using the Internet are considerably lower, the magnitude of gain depends on whether the product is an information product or a physical product. Recent research points out that the ability to electronically diagnose and deliver software fixes for information products (e.g., software) reduces operating expenses by as much as 50% to 90% (Geyskens et al, 2002) . In addition, information processing devices such as computers are amenable to online diagnostics via the Internet. More generally, for products at large, the high information carrying capacity of the Internet can be leveraged to reduce the cost of providing information pertaining to preventive and corrective maintenance. Case in point:

The foray of Hewlett Packard (HP), a global personal computer manufacturer, into web-enabled customer service stemmed from a crisis involving misfeeds that occurred in one of its printer lines in 1994. In an effort to provide information about the solution to owners of faulty printers, HP leveraged its web site to distribute technical manuals and provide customer support. The magnitude of the efficiency gains realized by HP has grown exponentially with the rapid growth in its Internet user base. This is evidenced by the number of inbound calls to HP's call centers dropping to below one million a month, and the number of customers visiting the web site for electronic support increasing to approximately five million a month (New York Times, 2003).

Market Research. A review of the emerging literature on marketing and e-commerce reveals that online methods such as pre-recruit web interviews cost less than traditional methods such as mall intercepts and telephone surveys, yet deliver acceptable levels of stimulus complexity (Burke et al, 1999; Miller and Dickson, 2001). A brief discussion on opportunities for leveraging the Internet for efficiency gains in conducting surveys and focus groups follows.

Online surveys: Lower decision information, quality and factor costs (A2a → D, E, F).

Lower costs are attributable to the unit one cost structure and the elimination of factor material costs (printing and mailing questionnaires), lower information processing costs (elimination of the need to key in data from questionnaires) and costs associated with lower quality (reduced data entry errors). Although upfront costs are incurred in designing Internet surveys (assembling and obtaining sampling frames, creating or buying software and supporting databases), the fact that these are one-time fixed costs implies that the marginal cost of Internet based surveys is negligible compared to traditional methods. Case in point:

Eastman Kodak Co., in addition to using market research agencies, employs the web for conducting product and customer satisfaction surveys. Business analysts at the firm found that online surveys are completed more quickly compared to conventional surveys (e.g., mall intercepts) and are more successful in gathering a large sample. While the average cost for mall surveys involving 1000 respondents is in the range of \$30,000 to \$40,000, the cost of online surveys for an identical sample size is approximately \$20,000 (Business Marketing, 1997).

Online focus groups: Lower decision information and factor costs (A2b → D, F). Market research using Internet can engender a positive group climate (e.g., text-based chat or video streamed chat) among remotely located users (Burke et al, 1999). By conducting electronic focus groups involving geographically dispersed participants, businesses can reduce information processing costs and factor costs (digital transcription and travel to focus group centers). An oft-debated issue concerning online surveys and focus groups is whether the results are generalizable to other contexts and conditions. Such concerns stem from the fact that a larger percent of Internet users are males with higher than average levels of income and education (Reibstein, 1999). While such biases could skew the results, their effect can be reduced by re-weighting the

results according to the demographics of the desired target population. Moreover, with rapid growth of the Internet user base, the population demographics and the Internet user demographics are likely to converge to a greater extent in the future.

A discussion on leveraging the Internet for enhancing marketing operations efficiency in the areas of (1) new product knowledge sharing, (2) advertising knowledge sharing, (3) service knowledge sharing, and (4) sales knowledge follows.

Online new product development knowledge sharing: Lower decision information and factor costs (A3a → D, F). The new product development literature suggests that shorter product development cycles, faster time to market and market information exploitation are among keys to new product success (Han et al, 1998; Ottum and Moore, 1997). The knowledge required for successfully implementing NPD projects, a team-based endeavor, often resides across functional boundaries. Consequently, an opportunity exists to leverage the Internet to facilitate sharing of intra-organizational knowledge.

The Internet can be integrated into different stages of NPD for information gathering and transfer, both within and outside the organization (e.g., customers, competitors and channel members). For instance, in the preliminary investigation and business case preparation stage, the Internet can be deployed to serve as a medium for concept testing, technological feasibility assessment and gaining customer insights. In the development and testing stage, project data such as engineering drawings and three-dimensional models can be shared over the Intranet between functional teams based in remote locations. Case in point:

Beckman Laboratories (BL), a specialty chemical manufacturer, in an effort to store and share the recent practical knowledge of all associates, instituted an online knowledge management system. The interactivity of this system not only facilitates conversations and interactions

between associates in different locations, but also archives the conversations for future use. By leveraging this system, new product development managers frequently exchange notes amongst themselves, offer technical advice to field personnel and stay current with issues arising in the field. Such well defined and streamlined interactive forums which facilitate sharing of emergent knowledge and editing and repackaging knowledge for future product development efforts has enabled BL to realize gains in productivity (Zack, 1999).

Online advertising knowledge sharing: Lower decision information and factor costs

(A3b → F, G). The dissemination of advertising related knowledge within the organization can be cost-prohibitive, especially when the content is rich and multimedia in nature. Here, the Internet offers greater potential for managing explicit content compared to interactive content (Zack, 1999). For instance, the ability to digitize advertising content (e.g., artwork, audio and video files) and share it through online databases amongst internal departments and with advertising agencies enables streamlining of brand management and considerable savings in factor costs (material). Case in point:

Coca-Cola Inc.'s digital media system, by making available a century's worth of corporate marketing and advertising icons through the Internet, allows its employees to easily access and use the material in new projects. Being a centralized location for storing, updating, managing and disseminating best advertising practices, the system is comprised of downloadable video, photographs and marketing and advertising icons. This online system is organized as three separate libraries -- an image library with more than 9000 graphical images, a document library with more than 7000 text documents and an advertising library, which contains more than 25,000 television advertisements and corporate videos. The benefit of this exhaustive online

system is that it enhances productivity gains entailed in storing, retrieving and reusing brand knowledge (Business Wire, 2001).

Online sales knowledge sharing: Lower decision information and factor costs (A3c → D, F). Interest in integrating the Internet into sales activities stems from the potential for enhancing the efficiency gains in operating the sales organization (Rivers and Dart, 1999). Sharing information about sales leads can be cumbersome, frequently results in wasted time, due to duplication of sales effort (Taylor, 1993). In this context, prospecting and qualifying sales leads and cross referencing of customers through an Internet based contact management system can help eliminate redundancy and waste. Other opportunities to streamline sales processes include updating call reports, downloading product catalogs and checking inventory availability. A study on the impact of Internet tools on sales productivity of a copying machine manufacturer points out that automating activities such as lead tracking, time scheduling and account profiling results in an average saving of one hour per day per salesperson or 26 man-days annually (Goldenberg, 1995).

Online service knowledge sharing: Lower decision information and factor costs (A3d → D, F). Organizations frequently attempt to transfer best practices (e.g., best post-sales service practices) to different units within the organization to avoid costs of reinventing solutions. Pre Internet, rule based software expert systems were employed to codify and synthesize prior knowledge to aid decision-making. The Internet offers a platform to enhance efficiency of intra-organizational learning by ensuring that (1) the problem-solution exchanges and consequences are communicated and known, and (2) there is some form of organizational memory that archives the problem-solution exchanges (Goodman, 1998). The following initiative by Xerox is illustrative in this regard.

Xerox spent almost two years evaluating how its employees were interacting with Case Point, an expert system software designed to help employees rectify problems with copiers. Attempting to explore this issue, Xerox organized a contest that rewarded employees every time they solved a customer problem. The results of this contest had an interesting characteristic. While the winner of the contest was an expert who had little experience with the software, the runner-up was a new recruit who sat across from the expert and gathered knowledge by overhearing and creating a personal collection of manuals and hand-written notes. This contest raised the question of whether it was feasible for all employees in the organization to interact with experts when faced with a problem or crisis. Responding to this dilemma, Xerox initiated a community-based knowledge sharing service in which customer service engineers exchanged ideas through e-mail lists. The result of this initiative was (a reduction in the cost of parts, time spent by engineers and length of repair time) translated into annual cost savings of \$ 10 million (Business 2.0, 2002).

Leveraging Personalization Into Marketing Operations Efficiency

Personalization refers to behaviors initiated by sellers to tailor information to individual buyers. Personalization strategies impact both customer acquisition and customer retention, and in general, enhance long-term customer relationships (Ansari and Mela, 2003). Yet, its implementation in the physical environment is constrained by several factors such as high costs of collecting customer information and high costs of managing multiple prices and products. In a physical environment, personalization and efficiency tend to be conflicting goals. For instance, in a physical environment, menu cost, the cost of changing prices in the traditional marketplace, is an impediment to frequent price changes because of the time and cost expended in attendant activities (e.g., re-labeling and informing sales personnel and customers about price changes). A study involving supermarket chains reports that menu costs average \$105,887 per year, per store

comprising 0.70 percent of revenues, 35.2 percent of net margins and \$ 0.52 per price change (Levy et al., 1997). In contrast, an ability to modify product information and manage multiple prices in a purely online setting enables businesses to cater to heterogeneous needs at relatively lower costs (Ansari and Mela, 2003). A brief discussion of opportunities to streamline marketing operations in environments characterized by personalization follows.

Price discrimination: Lower decision information and factor costs (B1 → D, F). The “*winner, take all*” characteristic of certain aspects of the Internet has encouraged a number of firms to pursue penetration-pricing strategies in order to build market share. Firms have incurred substantial losses and as a consequence some have been forced into bankruptcy. A review of extant literature in economics is indicative of multiple schemas for classifying different kinds of price discrimination prevalent in the marketplace (Pigou, 1920; Schmalensee, 1981). The underlying premise for differential pricing strategies is that, various groups, due to differences in their demand elasticity respond to prices differently. Hence, firms can extract surplus from certain groups of customers by employing price discrimination by segments. For instance, catalog retailers have generally pursued third degree price discrimination (different prices are charged to different customers based on their unique characteristics and/or purchase patterns) by setting prices on the basis of the zip codes of the addresses. Product catalogs sent to customers living in zip codes with higher buying power tend to list higher prices than zip codes with lower buying power.

The success of a pricing strategy hinges on ability of firms to leverage customer information (i.e., demographics and psychographics) in pricing decisions (Ansari and Mela, 2003; Clemons and Weber, 1994). An ability to process customer information from electronic coupons relatively easily (e.g., lower information processing costs) enables firms to frequently

fine-tune their prices at lower menu cost, and thereby efficiently optimize revenues over the long-run.

Electronic catalogs: Lower decision information, quality and factor costs (B2 → D, E, F). An electronic catalog (e-catalog) is essentially an electronic representation of information about the goods and/or services offered by an organization. While electronic catalogs for business-to-consumer (B2C) and business-to-business (B2B) applications have certain similarities, a fundamental difference between the two is that, while the former refers to seller initiated efforts to reach buyers, the latter refers to buyer initiated efforts to identify prospective sellers. The fact that catalog operations are characterized by frequent changes (in the realm of product and pricing) implies that the cost of doing business renders this industry relatively less profitable in a traditional setting. Sears' decision to exit the "Big Book" catalog business has been attributed to such adverse industry conditions (i.e., prohibitive costs) (Alba et al.1997). Yet, as the following example illustrates, the ability to effortlessly update product information and digitize transactional information (e.g., frequently purchased items and gift certificate purchases) in an electronic setting enables businesses to personalize catalogs at considerably lower costs. *AMP Inc., a world leader in the development and manufacture of electronic and electrical interconnection devices, recently created a multilingual electronic catalog of its products. This allows customers located in geographically dispersed locations to search alphabetically, by product picture or part number, for detailed information on more than 67,000 stock keeping units (SKUs). The electronic catalog, available in eight different languages, creates personalized experiences for customers across the globe. The complexity of catalog operations is evidenced by the frequency of updating product changes at AMP -- approximately 200 per day. Electronic catalogs, in this context, provide not only accurate product information, but also allow sales*

personnel to focus on new application solutions for customers. This initiative saved AMP \$ 7 million in annual costs that it used to incur on publishing and distributing product catalogs (Advertisement, 2002)

Leveraging the Addressability Characteristic for Enhancing Marketing Operations

Efficiency

Addressability refers to an ability of a business to leverage the Internet to locate users uniquely in time and space (Petrison et al, 1997). In a physical environment, the task of constructing and updating customer information (i.e., addresses) is cumbersome and time consuming. Although, the notion of addressability is widely recognized by marketing practitioners, the fact that the cost of identifying and holding addresses has fallen by a factor of one thousand is less apparent (Blattberg and Deighton, 1991). For instance, while conventional direct mail costs between 60 to 80 cents per mail for a mailing list between 60,000 and 100,000 targets, an e-mail campaign for an equivalent or even larger list costs approximately \$ 150 (Evans et al, 1995).

Closer examination of the historical evolution of direct mail points to a fundamental dilemma confronted by marketers -- the trade off between mass market and customization (Petrison et al, 1997). Traditionally, these were considered to be mutually exclusive choices for production because the high costs of customization prevented businesses from experiencing benefits that accrue from economies of scale. In contrast, the unit one cost structure of electronic mail enables execution of mass customized promotional campaigns at a fraction of the earlier costs.

E-mail promotion of trade shows: Lower decision information and factor costs (C1 → D, F). Trade shows essentially enable businesses to perform selling functions such as identifying prospects or key account personnel, and non-selling functions such as gathering competitor

intelligence. Prior research suggests that trade show promotion expenditures are the second largest item in a business marketing communications budget, accounting for about 20 percent of the budget for US firms and 25 percent for European firms (Jacobson, 1990). Pre-trade show promotions typically involve (1) creating direct mailers with detailed itinerary, (2) following up with fax and telephone confirmations, and (3) cross-promoting with other advertising and marketing communication programs. Leveraging e-mail to invite participants, seek confirmation of participants and manage the leads generated can enhance operations efficiency associated with implementing trade show promotions. Although, researchers have voiced concerns that bulk unsolicited commercial e-mail (BUCE) could be construed as intrusive, consumer dissent can be minimized by soliciting permission before the campaign (i.e., the use of *opt-in* as a method to ward off potential privacy concerns).

Conclusion

The issues addressed here provide insights into how the Internet can be leveraged to more efficiently use marketing resources. Scholarly initiatives such as the Marketing Science Institute's (MSI) sponsorship of a competition and a special section of the *Journal of Marketing* (October 2004 issue) to foster research on the topic of linking marketing to financial performance and firm value highlight the importance of marketing efficiency related issues and the need for further research in the area. A brief discussion on potential avenues for future research in the context of issues addressed in this paper follows.

- *Enhancements and refinement of the proposed organizing framework.* In general, marketing operations efficiency improvements can be achieved either through a *decrease* in the amount of marketing resources expended to implement a marketing strategy, an *increase* in the level of output for a given level of marketing resource outlay, or a

combination of the two. Since the Internet offers a wide range of opportunities for firms to achieve marketing efficiency gains by lowering costs, our primary focus was on this aspect in our paper. A potential avenue for further enhancement of the proposed organizing framework would be to incorporate potential avenues for increasing the level of output for a given level of input

- *Alternative complementing organizing frameworks.* The organizing framework presented in Figure 1 provides insights into how firms can leverage the Internet in the *interactive*, *personalization* and *addressable* environments to lower costs and thereby enhance marketing operations efficiency gains. Developing organizing frameworks that provide insights into opportunities for leveraging the Internet for enhancing marketing operations efficiency from other vantage points constitutes a second potential avenue for further research in the conceptual domain. Figure 2, a marketing mix centered organizing framework constitutes a step in that direction. Here, the product, promotion, price and distribution elements of the marketing mix and CRM are delineated in box “A” as the domains in which the Internet can be leveraged for enhancing marketing operations efficiency. Potential avenues for realizing marketing efficiency gains by *lowering costs* for a given level of output and *a higher level output* for a given amount of input are presented in the boxes labeled “B” and “C”, respectively. The net effects of lower costs and higher output on marketing operations efficiency gains are shown in the box labeled “D”.

Insert Figure 2 about Here

- *Marketing operations efficiency and intra-firm knowledge sharing.* In general, intra-firm knowledge sharing can enhance marketing operations efficiency. However, since

knowledge sharing requires trust and commitment, impediments to engendering trust and commitment can offset efficiency gains. For instance, anecdotal evidence suggests that implementation of sales force automation (SFA) technologies within organizations are marked by high failure rates (Petersen, 1997). Researchers have explored whether individual characteristics (e.g., traits, self-efficacy and role perceptions) and organizational characteristics (e.g., organizational commitment and facilitating conditions) erode the benefits of technology (Jones et al, 2002; Speier and Venkatesh, 2002). These considerations highlight the need for research on issues relating to fostering a spirit of cooperation and trust within an organization in an Internet-enabled market environment.

- *Marketing operations efficiency and higher order effects.* A higher order effect that a business might be able to realize by leveraging the Internet for efficiency gains in the realm of marketing operations is the effectiveness of its marketing strategy. For example, the vast amount of information that a business accumulates in reference to actions initiated (such as shown in Boxes A, B and C in Figure 1) can enable more effective competition in the marketplace. However some companies, in their quest to lower costs by using the Internet have managed their relationships with customers (see Hindo 2006). Such case histories point to the need to guard against the initiatives a business undertakes to increase marketing operations efficiency having an adverse effect on the implementation of marketing strategy. Collectively, these considerations highlight the need for research focusing on organizational and environmental conditions under which leveraging the Internet for efficiency gains in marketing operations is likely to have a positive versus adverse effect on marketing strategy effectiveness.

References

- Advertisement. E-Commerce gets savvy at AMP 2002; (June)
- Alba JW, Lynch J, Weitz B, Janiszewski C, Lutz R, Sawyer A, and Wood S. Interactive home shopping: Consumer, retailer, and manufacturer incentives to participate in electronic marketplaces. *Journal of Marketing* 1997; 61(July): 38-53.
- Ansari A, Mela CF. E-Customization. *Journal of Marketing Research* 2003; 40(May): 131-146.
- Aron R, Singh J. IT enabled strategic outsourcing: Knowledge intensive firms, information work and the extended organizational form. Working Paper University of Pennsylvania: 2002.
- Au Y, Kaufman RJ. Should we wait? Network externalities and electronic billing adoption. In: Sprague R, Editor. *Proceedings of the 34th Hawaii International Conference on Systems Sciences*, Los Alamitos, CA: IEEE Computer University Press, 2001.
- Baker WE, Sinkula JM. Synergistic effect of market orientation and learning orientation on organizational performance. *Journal of the Academy of Marketing Science* 1999; 27(Fall): 411-427.
- Bakos YJ. A strategic analysis of electronic Marketplaces. *MIS Quarterly* 1991. 15(September): 295-311.
- Blattberg RC, Deighton J. Interactive marketing: Exploiting the age of addressability. *Sloan Management Review* 1991; 33(Fall): 5-15.
- Brynjolfsson E, Smith MD. Frictionless commerce? A comparison of internet and conventional retailers. *Management Science* 2000; 46(April): 563-586.
- Burke RR, Rangaswamy A, Gupta S. Marketing research in the digital age. MSI Working Paper, 1999.
- Business 2.0*. The case against knowledge management. 2002; (February 7).
- Business Marketing*. Alliance mines marketing data online. 1997; (November 6).
- Business Week*. Electronic stores get a cruel shock. 1991; (January 14).
- Business Wire*. The Coca-Cola company and IBM create unique digital media management system. 2001; (December 10).
- Clemons E, Weber BW. Segmentation, differentiation and flexible pricing. *Journal of Management Information Systems* 1994; 11(Fall): 28-37.
- Crosby PB. *Quality is free*. New York City, NY: McGraw-Hill, 1979.

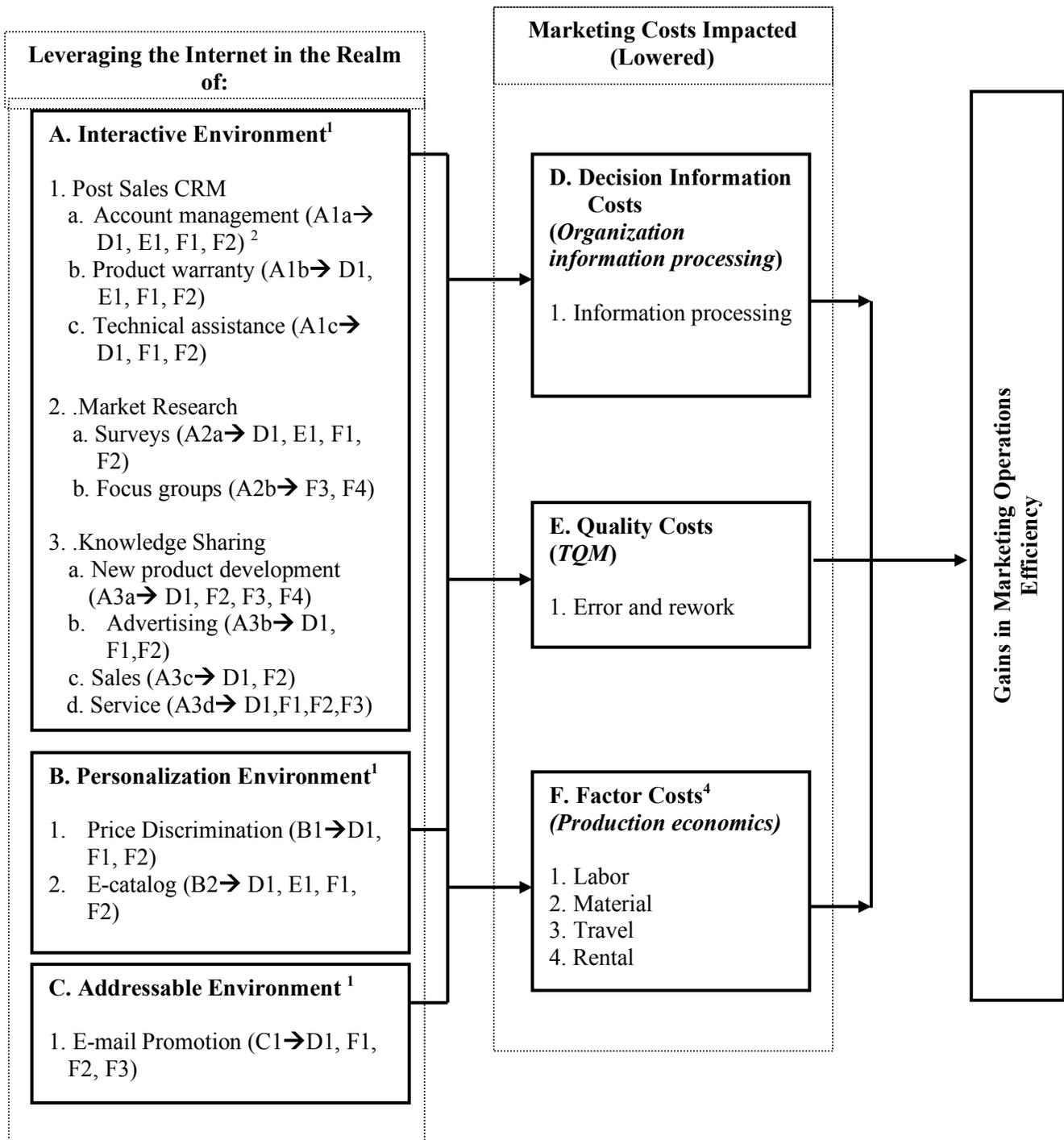
- Day GS, Montgomery DB. Charting new directions for marketing. *Journal of Marketing* 1999; 63(October): 3-17.
- , Fein AJ, Ruppertsberger J. Shakeouts in digital markets: Lessons from B2B exchanges. *California Management Review* 2003; 45(Winter): 131-150.
- Evans M, O'Malley L, Patterson M. Direct marketing: Rise and rise or rise and fall. *Marketing Intelligence and Planning* 1995; 13(6): 16-23.
- Geyskens I, Gielens K, Dekimpe MG. The market valuation of internet channel additions. *Journal of Marketing* 2002; 66(April): 102-119.
- Goldenberg B. Re-Engineering sales and marketing with advanced information delivery systems. *Sales and Marketing Management* 1995; 147(April): 1-31.
- Goodman PS. Computer-Aided systems and communities, mechanisms for organizational learning in distributed environments. *MIS Quarterly* 1998; 22(December): 417-441.
- Gurbaxani V, Whang S. The impact of communication on organizations and markets. *Communications of the ACM* 1991; 34(January): 59-74.
- Han JK, Namwoon K, Srivastava R. Market orientation and organizational performance: Is innovation a missing link, *Journal of Marketing* 1995; 62(October): 30-45.
- Hindo B, Satisfaction not guaranteed, *Business Week* 2006; June 19: 32-36.
- Hoque AY, Lohse GL. An information search cost perspective for designing interfaces for electronic commerce. *Journal of Marketing Research* 1999; 36(August): 387-94.
- Ittner CD. Exploratory evidence on the behavior of quality costs. *Operations Research* 1996; 44(January/February): 114-130.
- Jacobson D. Marketers say they'll boost spending. *Business Marketing* 1990; 75 (March): 31-32.
- Jap, SD, Mohr JJ. Leveraging internet technologies in B2B relationships. *California Management Review* 2002; 44(April):24-38.
- John G, Weiss AM, Dutta S. Marketing in technology intensive markets: Toward a conceptual framework. *Journal of Marketing* 1999; 63(October): 78-91.
- Jones E, Sundaram S, Chin W. Factors leading to sales force automation use: A longitudinal analysis. *Journal of Personal Selling and Sales Management* 2002; 22(Summer): 145-157.
- Juran JM. *Juran on planning for quality*. New York City, NY: The Free Press, 1988.

- Klein BH. Prices, Wages and Business Cycle: A dynamic theory. New York City, New York: Pergamon Press, 1984.
- Levy D, Bergen M, Dutta S, Venable R. The magnitude of menu costs: Direct evidence from large U.S. supermarket chains. *Quarterly Journal of Economics* 1997; 112(August): 791-825
- Meuter ML, Ostrum AL, Roundtree RI, Bitner MJ. Self-Service technologies: Understanding customer satisfaction with technology-based service encounters. *Journal of Marketing* 2000; 64(July): 50-64.
- Miguel C, Pontel S. Assessing quality costs of external failures (Warranty Claims). *International Journal of Quality and Reliability Management* 2004; 21(3): 309-318.
- Miller TW, Dickson PR. Online market research. *International Journal of Electronic Commerce* 2001; 5(3): 139-167.
- New York Times. Customer service at a price, 2003; (February 24).
- Ottum BD, WL Moore. The role of market information in new product success/failure. *Journal of Product Innovation Management* 1997; 14(July): 258-273.
- Parasuraman A. Understanding and leveraging the role of customer service in external, interactive and internal Marketing. paper presented at Frontiers in Service Conference, Nashville: TN. 1996; (October).
- Petersen GS. High impact sales force automation. Boca Raton, FL: St. Lucie Press, 1997.
- Peterson LA., Blattberg RC, Wang P. Database Marketing: Past, present and future. *Journal of Direct Marketing* 1997; 11(Fall):109-125.
- Pigou AC. The economics of welfare. London: Macmillan, 1920.
- PR Newswire*. American Airlines unveils a new and easy way to book AAdvantage award travel. 2007; (February 28)
- Reibstein DJ. Who is buying on the internet. In: Wind J, Mahajan V, Editors. *Digital Marketing*, New York City, NY: Wiley and Sons, 2001. pp. 201-225
- Rivers ML, Dart J. The acquisition and use of sales force automation by mid-sized manufacturers. *Journal of Personal Selling and Sales Management* 1999; 19(Spring): 59-74.
- Schendel D. Strategic Management and Strategic Marketing: What is strategic about either one?. In: Thomas H, Gardner D, Editors. *Strategic Marketing and Management*, New York City, NY: Wiley and Sons, 1985. pp 41-63.

- Schmalensee R. Output and Welfare Implications of monopolistic third-degree price discrimination. *American Economic Review* 1981; 71(March): 242-247.
- Shapiro C, Varian HR. *Information rules-A strategic guide to the network economy*. Boston, MA: Harvard Business School Press, 1999.
- Sheth JN, Sisodia RS, Sharma A. The antecedents and consequences of customer-centric marketing. *Journal of the Academy of Marketing Science* 2000; 28(Winter): 55-66.
- and ----. Marketing productivity: Issues and analysis. *Journal of Business Research* 2002; 55(May): 349-362.
- Speier C, Venkatesh V. The hidden minefields in the adoption of sales force automation technologies. *Journal of Marketing* 2002; 66(July): 98-113.
- Stewart DW, Pavlou PA. From consumer response to active consumer: Measuring the effectiveness of interactive media. *Journal of the Academy of Marketing Science* 2002; 30(Fall): 376-397.
- Taylor TC. "Computers bring quick return. *Sales and Marketing Management* 1993; 145(September): 22-25.
- Varadarajan RP, Yadav MS. Marketing strategy and the internet: An organizing framework. *Journal of the Academy of Marketing Science* 2002; 30(Fall): 296-313.
- Yadav MS, Varadarajan RP. Interactivity in the electronic marketplace: An exposition of the concept and implications for research. *Journal of the Academy of Marketing Science* 2005; 33(Fall): 585-603.
- Zack MH. Managing codified knowledge. *Sloan Management Review* 1999; 40(Summer): 67-71.
- Zettelmeyer F. Expanding the internet: Pricing and communications strategies when firms compete on multiple channels. *Journal of Marketing Research* 2000; 37 (August): 292-308.

FIGURE 1

Leveraging the Internet for Enhancing Marketing Operations Efficiency: An Organizing Framework



1. Avenues for leveraging the Internet for enhancing marketing operations efficiency shown are intended to be illustrative and not exhaustive.
2. The linkages (→) shown in parentheses are to be interpreted along the following lines:
Leveraging the Internet in the realm of the interactive environment for post sales CRM activities such as account management (A1a) can enable a business to lower costs pertaining to information processing (D1), quality (E1), labor (F1) and material (F2).
3. The relevant literature base for cost elements delineated in boxes D, E and F are shown in parentheses.
4. Factor costs listed are intended to be representative and not exhaustive

FIGURE 2
Leveraging the Potential of the Internet for Enhancing Marketing Operations Efficiency: A Marketing Mix Centered Organizing Framework

