Abstract

This article is a call to arms for electronic business managers and researchers to increase their attention to the emerging "policy" frontiers and employ theories and methods integrating policy with market and technology issues. The e-business environment is growing more complex—not just economically, but socially, politically, and legally—and firms must manage this complexity with strategies that match the amount and variety of complexity in their environment. In many e-business firms, there is a notable disdain toward emerging policy developments or even a mind set that e-business is beyond emerging social conventions, politics and the law (or at least beyond the reach of regulators). In the emerging global policy landscape, few firms can afford this hands-off attitude toward policy and maintain their chance of survival. E-business firms must integrate their policy strategies with their technology and market strategies. We outline five broad questions for researchers to help e-business firms address the interdependent challenges of market, technology and policy environments. © 1999 Elsevier Science B.V. All rights reserved.

Keywords: Electronic business; Market; Technology; Policy opportunities

1. Introduction

I believe over the next few years the future of the Internet will be determined more by policy choices than technology choices.

—Steve Case, AOL Chairman (Wall Street Journal, 12 July 1999, A22)
With the Internet, we are on the cusp of driving new economies and new ways of doing business. We intend to engage in dialogue with policymakers to address the tough issues facing our industry…

—David C. Peterschmidt, CEO, Inktomi (http://www.netcoalition.com/quotes.shtml)

In the coming years we as a country will make many decisions on Internet policy, and one or two of these may well have profound and lasting effects on society as a whole.

—Jeff Bezos, chairman and CEO, Amazon.com (http://www.netcoalition.com/quotes.shtml)

The new understanding of e-business is that “policy” matters. Indeed, technology and management strategy choices are increasingly tied to the political, social and regulatory environments in which e-business finds itself. These policy environments are complex and evolving, and their effect on electronic business cannot be gainsaid. These forces can unlock or shelter markets, increase or decrease regulation, create entry barriers, affect prices, lower or raise the costs of competition, and structure interactions among firms and their customers. E-business has the choice to either respond passively as obedient regulated actors or to manage these policy frontiers as part of the overall strategy of the firm.

E-business brings customers and merchants to commercial exchange that cross physical, temporal, cultural, and legal boundaries on a scale that was previously inconceivable as it was technically infeasible. By electronic business—or e-business—we broadly refer to the automation of transactions, communication, and interaction using computer and communications technologies for commercial purposes. The definition of e-business includes inter-organizational systems such as Internet telephone and e-mail or internal computing which in support of commercial online exchange. E-business has exploded with the growth of the Internet (global collection of thousands of individual public networks around the world) and particularly the advancements of the World Wide Web.

E-business has changed the rules of the market and the role of information technology (IT). Whereas market strategy once drove IT choices, the pendulum has swung somewhat and IT now stands as a force in and of itself (Venkatraman and Henderson, 1998). Indeed, at the extreme some firms have made market strategy the handmaiden to IT. Today’s successful e-business model, however, sees the two vectors—market and technology—as intimately interwoven requiring seamless integration of the competencies and capabilities of each (Ghosh, 1998).

Tomorrow’s e-business business model will be even more complex as a third vector—the policy environment—becomes increasingly important in molding a firm’s fundamental options on their Internet operations. How e-businesses deal with governments, interest groups, activists, and the public will no longer be a predicament of strategy and technology. Instead, it will be an integral part of the strategy and IT choices of the firm. In other words, the policy environment will be managed in close concert with the strategy and technology options. Tomorrow’s e-business will need to design, structure, and create relationships that allow dynamic and cost-effective options that cut across the three vectors of market, technology and policy.
Policy is coming of age. Governmental regulators and citizen groups are unlikely to continue their wait-and-see attitude, even in such unregulated countries as the US. In many circles, there is a deep concern that e-business has increased the power of merchants, decreased the power of consumers, challenged the government’s ability to protect local industries, threatened governmental sources of income, and have left the government poorly prepared to be a guardian of their citizens’ “privacy”. E-business is not only raising economic concerns about competition and pricing, but also introducing new social and environmental threats that can be highly pervasive and viral. Moreover, one country’s regulation can have a global reach rather than being confined to a sovereign state. The platform for the policy process is also changing. More of the debate will be carried out in cyberspace itself. Finally, because the Internet has lowered the cost of organizing, there is an ever increasing number of interest groups with policy preferences of which firms have to take note. Moreover, these interest groups can form and dissolve in little time.

These predictions require e-businesses to develop policy competency. Up to this point, e-businesses have been somewhat untouched by public policy which might imply that there is a low level of awareness and interest in public policy among management. Past research has found that firms who have been insulated in the past by the political process are likely to be least skillful in influencing the political process (Hillman et al., 1999).

Our viewpoint article is in the spirit of Enid Mumford’s Viewpoint article in 1998. In that article, she argued that today’s economic, political, and social environment is becoming more “contingent, erratic, unpredictable, and hard to control” (Mumford, 1998, p. 256). Her questions dealt with drug wars and cybercrime on a societal level; our questions deal with firm-level policy strategies and actions in e-business. Despite differences in the level of analysis, we use her wisdom: (1) anticipation of problems is a must; (2) complex problems require good ‘coordination’ with different groups; (3) Ashby’s (1956) law of requisite variety applies that only variety can control variety; (4) one must see the total picture (e.g. one only can understand policy if one understands the policy formulation processes); and (5) difficult problems coupled with limited information require flexible structures and methods.

The next section of our article outlines theoretical frameworks that can be useful in integrating policy strategies with technology and market strategies. The Section 3 highlights opportunities for research. The Section 4 concludes the article.

2. Theoretical frameworks

To help underpin the research agenda, we draw insight from two theoretical frameworks. The first comes from the field of policy strategy. Baron (1995a,b, 1996) argues that strategic management looks both inside the firm for distinctive competencies and outside the firm to the policy (or “non-market”) environment in which it operates. Any formulation of strategy, he contends, must integrate both market and policy considerations. The second framework is real options theory. Real options theory suggests how firms can capitalize on their strategic options in a fast changing business environment (Amram and Kulatilaka, 1999). This combined approach should be well suited to the study of
e-business strategies given both the direct impact and uncertainty of government policy on e-business behavior.

2.1. Integrated strategy framework

Baron (1996) argues that today’s business strategy model should be integrated, consisting of a market and a policy component. The market strategy is a concerted pattern of actions taken in the market environment to create value for the firm by improving its economic performance, as is the case when the firm offers a new product or lowers prices in competition with its rivals. A policy strategy is a concerted pattern of actions taken in the policy environment—i.e. the political, social, and legal-regulatory environments—to create value for the firm by improving its overall economic position. In e-business, a technology strategy must also be incorporated.

The use of integrated strategy is illustrated by the recent actions of America On-Line (AOL) in its battle to insulate its Instant Messenger system (and customers) from other Internet communications companies. Instant Messenger (“IM”) allows subscribers to communicate with each other in real time rather than waiting and checking e-mail. Various e-business firms have found ways to allow their customers to communicate with AOL subscribers on AOL’s Instant Messenger systems and protocols. Microsoft Network (MSN) has been the most aggressive of these firms. AOL has resisted, arguing that the privacy of its subscribers (and, most likely, a valuable e-business application for the future) is at stake. AOL has taken an integrated strategy to protect its Instant Messenger monopoly. First, it inked licensing deals with many ISPs to allow them to use the Instant Messenger on their systems rather than teaming up with competitor Microsoft. This falls within the market strategy. Next, AOL began to change its software protocols on Instant Messenger to throw off Microsoft who repeatedly cracked the code to allow its customers access to AOL subscribers. This was the technology strategy. The third prong of the integrated strategy was to pursue trademark rights on the terms “IM” and “Buddy List”. AOL brought legal action against AT&T who has its own instant messaging system and who was using the terms “IM” and “Buddy List” as part of its system. Preventing use of these terms by others would allow AOL to capitalize on the goodwill it had developed in those terms. AOL also made public statements about the privacy issue involved with Microsoft’s actions, which ultimately encouraged the FTC to make inquiries. These were AOL’s policy strategies. All three strategies—market, technology, and policy—amounted to an integrated effort by AOL to protect its Instant Messenger market. AOL had to decide for which competitors it would use market techniques, for which it would use technology, and for which it would use policy.

Baron notes that policy issues and the institutions through which they are mediated are sufficiently different from the normal market (Baron 1995a). For example, in market competition, those who benefit are part of the economic exchange. In contrast, in policy environments, the enfranchised include not only market participants, but government officials, interest groups, and the media as well. The medium of exchange is another example highlighting the differences between market and policy environments. In markets, money counts, whereas in the policy environment, the number of voting constituents affected or the “newsworthiness” of a media story may count. Accordingly, to
make decisions about policy strategies, managers are called upon to use paradigms and information flows different from those they have typically used in normal market strategy analysis.

Baron develops a strategy system of principles, frameworks, and action plans to deal with the issues, institutions, interests, and information that characterize the policy environment (Baron, 1995b). The system helps managers “to structure analysis and strategy formulation, theories and conceptual frameworks to guide that formulation, and issue specific strategies and action plans” (Baron, 1995b, p. 73). The end product is a policy strategy that takes advantage of the firm’s core competencies and calibrates itself to the broader market strategy of the firm.

The principles and frameworks used in policy strategy include issue analysis (what policy issues are likely to affect firm-profitability), collective action analysis (how likely a group of firms will act in concert on a policy issue), rent chain analysis (whether the supplier and customer alliances may be formed in advancing a policy agenda on behalf of the company), and political-institutional analysis (which political institutions, and key players within those institutions, matter on a policy issue). These and other frameworks help focus managers on the critical aspects of policy issues and direct them to the strategy options that may be available. These strategies could be long-term firm-specific strategies such as developing an in-house competency for lobbying on certain issues, or more short-term, such as campaign contributions to key members of government.

To broaden the integrated e-business strategy framework, we also highlight IT strategies. For example, integrated strategy formulation may lead to the selection of a technological solution (changing firm-operations or way of doing business to avoid a regulatory hurdle or taxation, for example) rather than a policy or market solution. The e-business manager calibrates the market, technology, and policy strategy mix with the overall objectives of the firm.

2.2. Real options theory

Real options theory is the application of “option” thinking from finance to non-financial assets (Amram and Kulatilaka, 1999). The theory offers an economic logic for incremental resource investments and choice processes under highly uncertain and volatile environments with complex asset structures, much like we would see in e-business. The theory is based on the assumption that “people seek to ‘keep options open’ in situations that involve an unforeseeable future” (Bowman and Hurry, 1993, p. 760). The theory suggests that the option to expand into a particular e-business operation is more valuable when there is greater uncertainty about the underlying assets and resources involved in the e-business operation. According to financial options theory, increased volatility of the underlying asset or operation increases the value of the option because the potential gains are greater while the costs to access them remain the same (McGrath, 1997). The value of an option represents the potential benefit a firm may reap in the future beyond a value that can be estimated using the current organizational capabilities and knowledge in the market. It is important to note that for a firm, an option entails the right, but not the obligation, to exercise it. Resource investments are ended under poor conditions and losses can be minimized. Investments are continued under good conditions and the gains are maximized.
Organizational learning is paramount for reaping risky, yet valuable, opportunities in a turbulent environment. A strategy is a path of related options; there is no such thing as some well thought-through overall strategy. As soon as the firm starts down the path, it must reassess. The firm must monitor continuously the value and risk of options and respond flexibly to what it has just learned about business conditions, competitors’ moves, governmental action, and so forth.

Real options theory argues that investments are phased incrementally exercising “bounded” (Williamson, 1999) or “disciplined” (Luehrman, 1998) opportunism. Real options theory advocates tight integration of strategic management, financial analysis, tactical project management, and a heavy dose of organizational learning. The real options approach ‘banks’ on foresight; foresight entails thoughtful investments to capitalize on unfolding events. According to Williamson (1999, p. 121), strategic options are “doors to the future that are created when the company undertakes pilot projects, reconnaissance, and experiments that expand its knowledge of alternative market segments and value propositions and that seed new organizational capabilities.”

To recap, an option “arise[s] from the interplay of the organization’s existing investments, its knowledge and capabilities, and its environmental opportunities” (Bowman and Hurry, 1993, p. 762). The option value increases as the environmental volatility increases. “The option to expand into ski boots is more valuable when there is greater uncertainty about the ski boot business” (Amram and Kulatilaka, 1999, p. 7). The theory advocates investments that increase the performance variance (i.e. variance in expected outcomes), without increasing the cost of the underlying investment.

Options theory suggests different strategic investments than those suggested by resource dependency theory (McGrath and Dubini, 1999). Resource dependency theory favors investments that minimize the current level of uncertainty and performance variance (Peffer and Salancik, 1978). The resource dependency theory has been criticized for advocating over-investment in existing assets and competencies that support today’s strategy, leaving firms prisoners of their past (Williamson, 1999). Options theory is seen as an alternative to resource dependency theory in situations involving irreversible decisions under high uncertainty.

Academic research on options theory has centered on formal techniques and methods for financially evaluating real options in areas such as product development (e.g. Bollen, 1999). Such techniques have been slow to diffuse in practice. But what has been found in practice is that those managers who make resource commitments to uncertain new projects (e.g. innovation projects), take option value intuitively into account (McGrath and Dubini, 1999), although laboratory research suggests that individual decision makers do exhibit variance in their perception of option value (Bushy and Pitts, 1997). Within information systems research, option models have also been shown to be applicable to making IT project investments and shedding insight on the issues of timing and scaling up IT investments under changing market and technology environments (Benaroch and Kauffman, 1999). One must note, however, that there are limitations in applying options theory to emerging technology investments because the development costs and the adoption and diffusion rates are unknown to both the developing firm and the industry at large (Benaroch and Kauffman, 1999).
2.3. Integrated strategy in a real options framework

Amram and Kulatilaka (1999) argue that the option-theoretic perspective is a new way of thinking about strategic investments. Hence, the theory’s application goes beyond financial analysis. The theory assumes an integrative strategic vision for a firm. An organization’s ability to strike options effectively requires the firm to actively manage its broader market, policy, and technological environments. This includes pre-investments to influence governmental or public action.

Policy is commonly thought of as an exogenous factor to which firms simply react (Hillman et al., 1999). Functional groups within the firm such as the legal and public relations departments are expected to keep the management knowledgeable about changing policy environments and their impacts on the businesses. But the real option logic argues that a firm must do more than react; it must shape and leverage its policy environments to create option opportunities. This means dispersing the responsibility for the firm’s policy agenda to those who are designing market and technology strategy. McGrath (1997) in extending the option-theoretic perspective to positioning strategic R&D investments argued for the importance of shaping public policy in increasing the value of technology investments. She notes that sometimes firms can maximize the value of their options more by influencing the legal agenda than by investing in technology per se.

E-business must become active on the policy frontier if firms want to be the beneficiary, rather than the victims, of regulation. But they must also be able to assess whether the benefits from regulation might be shared collectively by e-business industry at large, a subgroup of e-business firms, or selectively enjoyed by individual firms. Collective benefits occur when more than one firm benefits; that is there is a spillover of benefits to other firms (even those who were not part of the political process to pass the regulation).

The option-theoretic perspective argues that option-potential is maximized when a firm can make investments that create new knowledge, generate information or utilize existing resources in new combinations that are not available to other firms. Selective benefits allow a firm to design options that are idiosyncratic to the firm and cannot be easily imitated by other firms. Selective benefits may accrue from participating in the political process and help e-firms differentiate themselves. Collective benefits can also sometimes lead to firm-specific advantages as “when some firms are better able to take advantages of technological standards than others, especially those with previous work with the new technology” (Hillman et al., 1999, p. 70).

In summary, the shifting political sands towards Internet regulation and law are fueling additional uncertainty and volatility to Internet commerce. According to real options theory, anything that reduces uncertainty and volatility puts limits to high-variance opportunities and hence limits value creation via strategic options (McGrath, 1997). Rules set up by standards bodies, acceptance of dominant designs, as well as governmental regulations strive to relieve the industry of uncertainty, yet at the same reduce the potential of value creation. For some firms, the reduction in value creation will be sufficiently offset by the barriers these forces create for competitors. For others, the majority of the gain rests in the uncertain options. How much to invest in different outcomes of policy issues
depends on the pre-commitments firms have made to each option and the firm’s ability to recognize and act on an option at an optimal time.

3. Research agenda

Research that brings together issues of market, technology and policy can help the e-business community to meet the emerging challenges by increasing the depth of their understanding of political issues, institutions, policy alternatives, and how to participate in the policy process. Because e-business is information technology enabled, IT managers, in particular, need to understand how technology choices interact with the policy and market opportunities, to increase their firm’s maneuvering capability. Below, we discuss five research opportunities. The opportunities move from an analysis of the policy environment of the firm (macro-analysis) to the micro-analytic study of firm-strategy and the role of information technology managers. Each opportunity focuses on a distinct but related research question. Clearly, there are innumerable opportunities; we have highlighted only five.

3.1. What is the current and future landscape of policy affecting e-business?

The first opportunity is to understand the emerging policy landscape in states, countries, and different regions of the world as well as the international context. One must understand which policy issues and institutions will be most critical for e-business in the coming years. Understanding the issue requires that one knows why the regulation was initiated, how it was designed to address the problem, who designed it and who will be executing it (and the motivations and behaviors of these players).

A policy issue, that at least some parts of e-business community support, concerns universal standards for digital signatures. At the current time, there are substantial differences among the various state laws involving digital signatures, leaving both the merchant and the consumer unprotected. In a recent Internet Law conference, an attendee asked a question on how to maneuver in the maze of digital signatures, for which a well-respected expert on digital signatures responded: “only contract with people with whom you have a trusting relationship”.

In other areas legislation is being proposed to constrain behavior that has become rather commonplace among certain web businesses. Ghosh (1998) in his Harvard Business Article on e-business evinced admiration how “the Internet search-service Yahoo! also sells hardware and software through its site by linking seamlessly to partners’ sites” (p. 130). Current legal cases involving trademark violations suggest that in order to avoid false impression of association, firms should only link to other’s home sites and it is paramount to make it clear for the consumer when he/she has left one site and have arrived on another site.

The proposed Anticybersquatting Consumer Protection Act in the US is another potential example that may affect e-business behavior. Proposed recently by Senator Spencer Abraham of Michigan, this bill would allow business and individuals to recover

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damages from others who register domain names in bad faith. Expanded civil and criminal penalties in the legislation would allow a person or company to recover statutory damages between US$ 1000 and US$ 100,000 (or at least between US$ 3000 and US$ 300,000, if the court finds the defendant’s use of the trademark was willful.) In addition, criminal penalties could be imposed in egregious cases.

On the international level, privacy is a good example of social regulation, where one country’s or a cluster of countries’ actions can have a global effect. The European Union’s Directive on Privacy has rejected technological solutions to privacy and instead requires unambiguous written consent from any individual before data on her or him can be used for purposes other than fulfilling the specific commercial transaction. The directive also calls into question the firm’s right to keep the personal data after services or goods have been delivered. The European law affects any e-business based in another country that has a web server or any other equipment in a European Union member country that processes personal data. In the US, government institutions, such as the Federal Trade Commission, have been actively considering privacy regulations that will affect the way e-businesses collect and distribute customer information. So far, no new US laws have been passed, although many have been proposed. The pressure for legislative action is mounting, however, as web businesses limit the rights of consumers and/or their liability. For example, visitors to Disney’s chat rooms waive their rights to any information they share. Moreover, Disney constrains the legal jurisdiction where a consumer can litigate.

The European Union has passed directives on consumer protection that outlines the jurisdictional responsibilities of merchants (Financial Times, 21 July 1999). The European countries have also taken a different approach from the US courts in outlining the responsibilities of Internet Service Providers. In the US, the Internet Service Providers (ISPs) have been freed of defamation liability of their users, whereas in a recent legal case in UK, the ISP was found liable. Also, European governments have on a occasion taken a heavy-handed law enforcement approach as it has become clear how the new e-businesses are taking advantage of the discrepant regulations and policies in neighboring countries (e.g. value added tax differences, regulations on alcohol sales).

As the growth of e-business continues, governments, established businesses, social and policy institutions are realizing that the next three to five years are critical moments and will carve out influence and a role for themselves. Important voices will also be provided by various lobby firms, and even e-business consulting practices and IT research firms. IT research firms might play a role by accumulating research data and results and testifying at government hearings.

Different policy issues might unify and divide the e-business industry. There might be some issue such as taxation where the whole e-business industry unites particularly against the incumbent retail chains. For other issues such as privacy, the e-business community might be divided, because the issue creates competitive advantages/disadvantages for one group of e-business businesses over another. Once firms are more knowledgeable of the issues at large, and their industry and industrial segment specifically, firms can become more proactive regarding a specific policy issue, be more aware of what are the best vehicles to use in addressing the issue, and whom to contact.

How will established firms and newly formed web businesses integrate market strategy,
technology, and policy in making resource investments and strategic choices in Internet commerce?

The second opportunity resides in understanding what strategies either individually or collectively, are developing to confront policy issues and institutions. A recent example of a collective strategy influenced by policy developments is the organization of NetCoalition.com. Nine of the world’s leading Internet companies (Amazon.com, America Online, DoubleClick, eBay, Excite@Home, Inktomi, Lycos, theglobe.com and Yahoo!) formed NetCoalition.com, a lobbying organization that claims to speak for the singular interests of the Internet industry. The organization plans to have an active dialog with policy makers to “promote responsible market-driven solutions to challenges facing the industry, while working to build consumer confidence and preserve the competitive environment that has allowed the Internet to flourish”. According to its coordinator Daniel Ebert, NetCoalition.com is a response “to members of Congress who tell us they need innovative online approaches to the unique challenges facing the Internet”.

The Online Privacy Alliance is already a proven example of the industry’s collective lobbying. The coalition was recently credited for influencing the US Federal Trade Commission’s report in support of the Internet industry’s self-regulation (New York Times, 13 July 1999). The FTC report encouraged Congress to hold off on legislation that would regulate how companies collect and use consumer data. This was a big win for the alliance. The alliance promotes self-regulation in lieu of governmental regulation by encouraging Internet companies to post privacy policies at their websites and allow consumers to choose and control the information collected about them over the Internet. Last year, only 14% of Internet websites posted privacy policies. To date 66% of the websites post privacy policies, although only 10% give consumers choice and control over their personal information (New York Times, 13 July 1999). The Internet companies have used numbers such as these to suggest that the Internet community is indeed committed to fair information and business practices. Ironically, for the consumer and citizens advocacy groups the numbers tell more about the lack of concern for privacy rather than the commitment to the preservation of privacy.

An example of a firm-specific action to address privacy concerns would be the decision of a firm to use SET over SSL payment methods for collection in order to avoid customer data privacy issues. That would be a technological solution to a policy issue. Consider another firm-specific example involving business strategy. Bank of America recently announced new rules for financial privacy of its customers. No longer would Bank of America share any customer information with outside companies. Rather, Bank of America would reposition itself as an information intermediary for businesses that had complementary financial services with its customers (New York Times, 12 June 1999).

3.2. How does e-business structure its assets and resources to take advantage of the uncertain policy environment?

The third opportunity addresses the firm’s organizing strategy. Bowman and Hurry (1993) noted that an organization’s ability to strike options effectively is influenced by its structure. In a highly uncertain and turbulent environment, no one manager can see all the relevant contingencies. Those who see opportunities need to have a decision authority
to act. Functional stovepipes and other forms of organizational fragmentation make it hard to bring different parties together, let alone agree on the value generating options and whether, how, and when they should be exercised. The real options approach argues for a highly flexible organizational form.

The literature offers little consensus as to how a flexible organization is designed and managed so that it remains flexible. From an organizational theory perspective, Vorberda (1996) proposed an organization form that strives for external strategic flexibility. By strategic flexibility, Vorberda means that firms are freed from their past decisions and routines and can respond to high variety and speed of change in the environment. According to Vorberda, firms that build their capability of strategic flexibility build competencies to influence consumers, use market power to control competitors and engage in political activities to influence regulation. These competencies allow the firm not just to respond to the environment but control that environment.

Venkatraman and Henderson (1998) take the organizing question further. They suggest that it may no longer make sense to talk about structures. Structures inherently imply some form of stability. Rather, firms must continuously experiment with new forms to overcome the limitations of the existing ones. That is, strategic flexibility requires dynamic forms of an organization that are continuously changing.

Venkatraman and Henderson are silent about managing the political environment; Vorberda explicitly includes policy competency as part of repertoire of skills of a flexible firm. How are e-business firms sourcing policy competency? The resource based view of the firm tells us that socially complex capabilities are beyond the ability of managers to change in the short term (Barney, 1997). Here incumbent firms with e-businesses might be in an advantageous position, compared to new web-based businesses. InfoSel, Mexico’s largest private Internet Access provider, was able to gain its market position partly because of the ability to leverage its parent company’s policy networks (Jarvenpaa and Leidner, 1998).

3.3. How does the policy environment affect the relationship between the e-merchant and a consumer?

Another research area of great potential is how the policy environment affects the relationships between a customer and a merchant. Here we will focus on a consumer as a customer. While the business-to-business side of e-business has been striving, the consumer business growth has been much more uneven in terms of consumer response as well as merchant success. Many of the early promises of the Internet lowering consumer prices and leveling the playing field between new and established brands, conglomerates versus niche players, small and large merchants, and the death of middlemen have not materialized (Quelch and Klein, 1996; Gallaugher, 1999).

Many have argued that the primary barrier to the growth of the consumer side of e-business is the lack of consumer trust in the Internet (Quelch and Klein, 1996; Keen, 1997; Jarvenpaa et al., 1999). Hoffman et al. (1999) make a case that the lack of trust is engendered by e-businesses’ failure to respond satisfactorily to consumers’ concerns over privacy. The general distrust toward e-businesses is fueled by the merchant tactics that have shifted the balance of power toward a merchant and away from the customer.
Hoffman et al. argue that to increase consumer trust, the power needs to shift toward more cooperative interactions between the merchants and their customers.

Cooperation is known to increase trust (Mayer et al., 1995). But cooperation assumes a past history of a relationship and would not be applicable to a new merchant with whom the consumer has had no prior interaction. McKnight et al. (1998) advocate, that in new relationships, institutional factors can provide a valuable basis for an initial trust. Institutional factors include legalistic remedies (i.e. consumer protection laws). Hence, trust in the relationship is likely to be influenced by various governmental safeguards. The effects are likely to vary by different cultures.

3.4. What is the role of IT professionals in policy choices and policy implementation?

Finally, the research community can help e-businesses understand the possible roles of the information technology manager in determining the relevant policy issues for the firm, communicating policy concerns to corporate management, designing technological solutions to policy issues, and organizing efforts to defeat or advance particular policy initiatives. An understanding of this level of activity is predicated on our understanding of macro-policy environment, firm-strategies, and firm-level policy competency.

IT professionals design and deliver the critical operations capability for e-business. These capabilities cover the basic trade functions and processes, e.g. search, valuation, logistics, authentication, communications, product representation, legitimization, influence, and dispute resolution (see Kambil and van Heck, 1998). Policy can have facilitating or inhibiting effects on these functions and processes. For example, a software firm in Silicon Valley decided to divest its distribution center in Europe and consolidate all of its product sales, updates and patches from one website in the US. The firm designed its European back office web operations to take advantage of the discrepancies in the governmental policies and regulations in Europe, yet all controlled from the US site. The European country in which a person was downloading the software could be bypassed for registration and tax purposes. The registration could occur in another country that has favorable regulations in terms of liability, fraud, and intellectual property protection; or the sale transaction could be recorded in the server of the country with the lowest corporate taxes. This company strategy, however, created many internal problems as it expanded. The highly centralized systems did not provide the local responsiveness that the large corporate customers were looking for, particularly as the company’s suite of software increased in number and complexity. The firm adjusted by setting up a sales network in Europe comprised largely of subcontractors. But, the firm had no way of reporting back to the salesperson for commissions not of communicating to the local person that a customer in their region had just purchased and registered a product. This type of complexity will become more common place as e-business expands. The political competency of the IT manager might be a key determinant of the severity of the problems resulting from this type of complexity.

We do not know of any research that has broadly surveyed IT managers with e-businesses in terms of their level of interest, awareness, involvement, and influence on the policy agenda. For example, do IT managers sit on corporate policy teams dealing with policy environments? Are IT professionals asked by corporate management to adapt
operations in any way to account for perceived legal, regulatory, ethical, or public perception concerns (i.e. privacy issues)? Finally, it is not clear what is the responsibility of IT managers in regards to policy implementation involving technological solutions.

Research pursuing such questions might sample different set of firms depending on the evolving policy landscape (Research opportunity 1). If the policy issues appear to divide the industries, one needs to sample from the different industry divisions. At a minimum, we would expect differing findings on IT managers from regulated (e.g. financial services) and unregulated industries (e.g. software) and from older multinational firms as well as new web-based companies that transact with customers outside the state and country domicile of the company. Such a survey might also provide broader insights about how different policy issues could be handled organizationally, managerially, and technically. For example, technological solutions might be developed in response to regulatory threats.

4. Conclusion

E-strategies and business models have been traditionally driven by technology and market insight, but increasingly the strategies need to take into account policy concerns as well. There is a growing global concern for policy issues such as consumer privacy, taxation, fraud, conflicts of international law, and intellectual property protection. The ability of high technology companies to manage these policy frontiers is becoming ever more crucial to their business success all around the world. This article argues that firm-level innovations and investments in e-business must involve a tight integration of market, technology, and policy opportunities and has outlined a research agenda to shed further light on these key issues.

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