Professional Associations in a Newly Emerging Sector of a Developing Economy: A Case Study of the NASSCOM Effect on the Indian Offshoring Industry

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Abstract
As important sources that shape institutional structures in an economy, professional associations play significant roles in legitimating institutional changes. This paper examines the influences of professional associations on member behaviors in an emergent, high growth economic sector of a developing economy. Such influences operate via direct effect, externality creation and indirect causal chains. In empirical terms, the paper offers an in-depth case study of India’s National Association of Software and Services Companies (NASSCOM). The NASSCOM case shows that under appropriate conditions, professional associations represent an alternative to the state in shaping the industry behavior.

Introduction
Society's course will be changed only by a change in ideas (Hayek 1954).

In a rich body of theory and empirical research, economics and management scholars have examined institutional pressures associated with professional and trade associations. Professional associations play a significant role in legitimating institutional changes (Greenwood, Suddaby, & Hinings, 2002). Such associations constitute the “most elaborate and intricate organizational arrangements” and are among the most important sources of institutional structures (Scott, 1992, p. 253).

It is widely recognized in the literature on institutional theory that institutional contexts differ in term of the relative strengths of an institutional pressure (Oliver, 1992). Notably lacking from this literature is a focus on clear contexts and attendant mechanisms associated with the relative strength of a type of institutional pressure. What remains an open question thus is how institutional contexts influence the salience of a role of a professional association in influencing member behaviors.
To improve our understanding of the influence of professional associations on organizational arrangements, we focus on the role of professional associations in shaping industry behavior in a newly developed and rapidly growing economic sector of an emerging economy. In specific terms, we examine such associations in the context of offshoring sectors in emerging economies. For empirical grounding of theoretical concepts, we provide a case study of India’s National Association of Software and Services Companies (NASSCOM) in shaping India’s offshoring sector. It is important to note that NASSCOM has been a cornerstone of the Indian offshoring industry. Although reflective pieces from the popular press and some academic articles have illustrated NASSCOM’s role, there is a dearth of theoretically oriented research on this subject.

This paper makes two contributions to the literature. First, we examine how institutional contexts influence the relative strengths of different types of institutional pressures related to direct effect, externality effect and indirect causal chains. Second, we strive to extend extant theory by offering a framework that explores in greater detail the roles of professional associations in a rapidly emerging sector of an emerging economy. In addition to broad-based theoretical and substantive interests within social science disciplines, the evolution of offshoring has been a pressing policy issue that enjoins larger political and social concerns of our society. Additionally, part of the fascinating character of this topic stems from the fact that the offshoring sector has become a low-wage-yet-affluent-lifestyle First World-type enclave in otherwise poor emerging economies (Thurow, 2004). Since most developing countries are characterized by a weak public administration and ineffective political leadership (Pugh, 1999; Saez, 1998), professional associations have the potential to play critical roles in shaping the offshoring sector.
In the remainder of the paper, we first provide an overview of the methodology used. Then, we discuss institutional contexts in emerging economies and roles of professional associations in a newly developed economic sector. Then, we provide case study of NASSCOM. This is followed by a section on discussion of the case. The final section provides discussion and implications.

**Methodology: Case study**

In broad terms, this paper employs interpretative epistemology to construct theory about contexts and mechanisms associated with professional associations’ influence on organizational arrangements in an emergent, high-growth economic sector of a developing economy (Montealegre 1999; Orlikowski and Baroudi 1991; Yin 1989). Given the uniqueness of NASSCOM’s roles in influencing behaviors of firms in India’s software and service sectors and our idiographic assumption, we consider case methods as the most appropriate approach to study this phenomenon.

Yin (1989) suggests that the epistemological efficacy of case studies is justifiable when the research question focuses on reasons behind observed phenomena, when behavioral events are not controlled, and when the emphasis is on unfolding contemporary events. Other researchers argue that case research methodology is “appropriate and essential where either theory does not yet exist or is unlikely to apply, … where theory exists but the environmental context is different … or where cause and effect are in doubt or involve time lags” (Stuart et al. 1999).

A sampling approach that focuses on theoretically useful cases is needed in case-based research (Eisenhardt, 1989, 1991; Yin, 1984). In particular, best practices models are arguably good candidates for a case research methodology (Eisenhardt, 1989, 1991; Yin, 1984). In this
connection it is worth noting that NASSCOM provides a ‘best’ practice model for professional
associations in emerging economies. Indeed, professional associations in the offshoring sector in
other emerging economies are modeled after NASSCOM. Brazil’s Associação Brasileira das
Empresas de Software e Serviços para Exportação (BRASSCOM) is such an example.

We used multiple information sources. First, we collected and analyzed extensive
secondary materials. It is important to note that there has been a good amount of media coverage
on NASSCOM. In addition, both authors made field visits to India and interviewed NAASCOM
member companies as well as policymakers.

Institutional Contexts in Emerging Economies and Professional
Associations’ Roles
All economic phenomena arguably have institutional components and implications (Parto 2005).
North (1990) defines institutions as macro-level rules of the game (p. 27). Institutional theory
can help us capture the roles and mechanisms associated with professional associations’
influence on industry behavior.

Institutions can be better understood in the context of the tasks for which they were
created (Holm, 1995). For outsourcing projects, institutions guide behaviors of concerned parties
by mediating the relationships among various stakeholders and technologies (Russo, 2001).

Before proceeding further, it is important to note that the state is arguably the most
important external institutional actor and powerful driver of institutional isomorphism, since
violations of laws and regulations can result in harsh sanctions (Bresser and Millonig, 2003).
Against this line of argument, it could be claimed that national legal systems, especially in
developing countries, are far from effective in directing organizations’ behaviors. There are
rampant instances of confusion or conflict in comprehending the meaning of the law. It is an
accepted axiom that laws-on-the-books are ambiguous (Baer et al., 1988; Madry, 2005).
Edelman and Suchman (1997) note: “the legal rules "cause" the organizational practices (or vice versa) is, at best, a gross simplification”. Given the fluid context of state-enacted legal frameworks, windows of opportunity are created for non-state actors to step in and provide order.

Pressures from professional networks and industry associations are typically framed as normative in nature (DiMaggio & Powell, 1983, 1991), which entail reliance on informal rules, codes, peer pressures and embarrassment of non-compliers (Ellickson, 1991; Greif, 1993; Hoffman, 1999; Lawrence et al. 2001; North, 1990). It is, however, suggested that professional associations also influence organizational arrangements through regulative and cognitive mechanisms (Greenwood et al., 2002; Scott 1992, p. 139).

Prior to discussing professional associations’ roles, it is necessary to create a theoretical framework related to clear contexts and attendant mechanisms associated with such roles.

**Direct vs. indirect roles in influencing industry behavior**

A profession is self-regulated by a code of ethics (Claypool et al., 1990; Cohen and Pant, 1991) and is characterized by its role as a moral community (Camenisch, 1983). The codes require members to maintain higher standards of conduct than required by law (Backoff and Martin, 1991), help make professional norms visible (Frankel, 1989) and act as a vehicle to reassure the public and clients that members are competent, have integrity, and maintain and enforce high standards (Ward et al., 1993). Professional associations monitor their members’ compliance with normative and coercive expectations (Greenwood et al., 2002). These norms, informal rules, and codes of behavior can thus create order, without the coercion of law, by relying on a decentralized enforcement process where noncompliance is penalized with social and economic sanctions (Ellickson, 1991; Greif, 1993; North, 1990).
Up to this point we have devoted this section to professional associations’ direct roles in influencing their members’ behavior. Professional associations’ influences on firm behavior include not only direct effects but also indirect and externality effects (Table 1 and 2). At least two sources of indirect influences can be observed on this front. One indirect causal chain concerns professional associations’ roles in strengthening the regulative institutions. For instance, professional associations provide the state with their expertise in developing new regulatory framework and strengthen the enforcement mechanisms.

Of equal importance in the discussion of professional associations’ role that follows below are indirect effects related to externalities that arise via what DiMaggio & Powell (1983) refer as mimetic isomorphism. Mimetic pressure entails mimicking behaviors of other actors that are perceived to be exemplar and have a higher degree of effectiveness (Dickson et al. 2004, p. 83; Lawrence et al., 2001). For example, Haveman (1993) found that savings and loan organizations followed diversification strategies that resembled those of successful firms within the industry. Burns and Wholey (1993) found that the adoption of matrix management by high-prestige hospitals influenced lower-prestige hospitals in their network to do the same. Associations are likely to stimulate interaction among member companies, which is likely to facilitate mimetic isomorphism among members of the association.

**Maintaining established order vs. bringing institutional changes**

An important way to understand professional associations’ roles in influencing members’ behavior would be to classify them in terms of maintaining established order and bringing institutional changes. Prior researchers have recognized that institutional structures such as professional associations engage in activities guided by an established institutional order as well as engage in “actions geared toward creating new or changing old institutions” (Holm, 1995:
The former role entails maintaining conservative structures and traditions and ensuring compliance by members (Greenwood, et al., 2002).

While professional associations’ roles in bringing institutional changes is a comparatively young area of inquiry, scholars have examined such associations’ roles associated with bringing institutional changes (Greenwood et al., 2002). Three important institutional change mechanisms include institution formation, deinstitutionalization and reinstitutionalization (Jepperson, 1991; Scott, 2001). These mechanisms are described in terms of institutional logics, which are the organizing principles that provide guidelines for actors’ behavior (Friedland and Alford, 1991). Put differently, such logics create “distinctive categories, beliefs, expectations, and motives and thereby constitute the social identity of actors” (Rao, Monin and Durand, 2003).

Institution formation entails the birth of a new logic or governance structure (Scott, 2001). For instance, the Data Security Council of India (DSCI) is a governance structure created to influence the behavior of the offshoring industry (McCue, 2007).

In deinstitutionalization, an existing logic or governance structure is dissolved (Scott, 2001). Deinstitutionalization is related to delegitimation (Soderbaum, 2000). As an example, in 1986, India’s Department of Electronics (DOE) and the government broke 26 existing rules and processed TI’s license to open a subsidiary in Bangalore (Evans, 1992).

Finally, reinstitutionalization involves an existing logic or governance structure replaced by a new logic or governance structure (Scott, 2001). In such a case, an institution “loses ground in relation to competing institutions” (Soderbaum, 2000). For instance, until the early 1990s, Indian policy makers though that a strong IPR regime would benefit only overseas companies. NASSCOM was able to change the existing logic. The association convinced the government that in the long run strengthened IPR protection measures would encourage Indians firms to
create their own IPR (Preethi, 1999). The reinstitutionalization of existing logic related to IPR measures led to the enactment of the 1994 copyright act.

The concept of institutional entrepreneurship provides a dynamic framework to understand mechanisms associated with professional associations’ roles as institutional change agents. Daokui Li et al. (2006, p.358) define institutional entrepreneurs as those “who not only play the role of traditional entrepreneurs in the Schumpeterian sense, but also help establish market institutions in the process of their business activities”. A growing number of studies have suggested that entrepreneurs can change particular models of social or economic orders and construct new organizational fields—to institutionalize that model (Bartley, 2007; Daokui Li et al. 2006; Svejenova, Mazza and Planellas, 2007).

Professional associations differ “socially, organizationally, and institutionally” in terms of their capabilities to facilitate diffusion of new ideas and to create revolutionary changes or in performing their roles as institutional entrepreneurs (Campbell, 2004, p. 178). A natural question is how institutional entrepreneurs initiate change. A valuable lead into this question is provided by Svejenova and her colleagues (2007), who suggested four mechanisms associated with institutional changes: “creativity that generates continuous flow of new ideas; theorization that takes stock of these ideas; reputation within and outside the field that endorses ideas as worthy of attention, and dissemination that brings ideas to the public domain”. The next section explores in greater details these mechanisms in the context of NASSCOM.

**The state’s regulatory and participatory roles**

Sobel’s (1999) conceptualization of "regulatory" and "participatory" state can be very helpful in understanding the dynamics associated with the roles of professional and trade associations in shaping industry behavior. It can be argued that these factors supplement economic determinants
of the attractiveness of an economic sector of developing countries. It can thus be argued that participatory and regulatory states can reduce political risk and help attract jobs and investments in the offshoring sector. In this section we first develop a 2 x 2 typology concerning the states’ regulatory and participatory roles from the standpoint of professional associations’ influence on the industry behavior (Table 1).

**Regulatory roles**

By regulatory state, Sobel (1999) means a set of factors that influence the enforcement of contracts, the rule of law, the risk of expropriation, corruption of government, and bureaucratic quality. A country with a strong rule of law has “sound political institutions, a strong court system” and citizens that are “willing to accept the established institutions and to make and implement laws and adjudicate disputes” (International Country Risk Guide, 1996). Put differently, a strong rule of law is characterized by effective punishment of transgressors and sanctions against defectors (Oxley and Yeung, 2001).

Many developing countries are characterized by weak public administration and ineffective political leadership in the implementation of economic and social policies (Pugh, 1999). Such countries are characterized by the state’s weak regulatory roles.

In particular, it is important to emphasize that if business partners are engaged in relationships that are not long and deep, the recognition of contract law helps produce trust by providing recourse in the event of failure to honor a contract and thus lowers the transaction costs (Humphrey & Schmitz, 1998; Nichols, 1999; Stiglitz & Squire, 1998; Reed, 2001). An increased involvement in international business activities is likely to lead to shift from property transactions based on relationships to those based on formal and legal contracts (Nichols, 1999).
Most obviously, the newness of the offshoring sector means that established and entrenched relationships are rare.

In this regard, it is important to note that while policymakers of many developing nations reassure the international business community of the commitment to the rule of law (Reed, 2001), the overriding reality seems far from satisfactory. In a survey of 23 African countries, Sievers (2001) found that governmental and judicial institutions were “lower than needed for sustained high growth”. Factors such as corruption, the quality of the rule of law, and the effectiveness of the national legal system in enforcing contracts acted as barriers hindering the development (Sievers, 2001). This reality is fundamental to the painfully low rate of FDI inflow in these economies.

Some researchers argue that professional associations represent an alternative to the coercive state (Vinogradova, 2006; Walzer, 1993). Note that one of the roles of professional associations is to monitor its members’ compliance with normative and coercive expectations (Greenwood et al., 2002). Most obviously, when the state’s regulatory roles are weak, professional associations may fill the regulatory vacuum. To put things in context, for instance, developed world-based offshoring clients are more likely to rely on trade associations such as NASSCOM than on the weak, ineffective domestic state.

It is important to note that in nascent, formative sectors such as biotechnology, there is no developed network of regulatory agencies comparable to established industrial sectors (Powell, 1993). As a consequence, there is no stipulated template for organizing, and thus pressures for conformity are much less pronounced (Greenwood and Hinings, 1996). In such cases, professional associations may prove effective in developing such templates compared to the state.
Finally, many developing countries are characterized by inadequate technical competence in the implementation of economic policies (Pugh, 1999). Moreover, even if the development of an economic sector (e.g., offshoring) is a national priority, a lack of funds and resources results in the failure of implementation efforts (Saez, 1998). In sum, in a state characterized by a weak regulatory power, while the government tends to lack resources, expertise and legitimacy required in developing new template and monitoring industry behavior, for organizing, professional associations’ influences are likely to be more readily apparent.

**Participatory roles**

The term “participatory state” captures the extent to which policies and institutions represent the wishes of the members of society (Sobel, 1999). To put things in context, in a participatory state, professional and trade associations carry enormous power to “bridge or link” their members’ interests “with the formal and coercive decision-making power of the central state” (Hunter, 1993:123-124). These associations do so through “dialogue, litigation, and mimesis” (Edelman and Suchman, 1997).

Prior research indicates that professional associations can work closely with state agencies to promulgate and protect the self-regulating independence and autonomy (Greenwood and Hinings, 1996). In some situations, the nation state will collaborate with professionals in attempting to rationalize an arena of activity (Scott 1992, p. 211).

Professional and trade associations’ participation in national policy making arena is critical for the success of the industries represented by such associations (Wood and Bloch, 1995). Yet developing nations vary widely in terms of such participation. In Russia, for instance, business groups and professional associations can offer private arbitration services and may establish private arbitration courts (Greif and Kandel, 1995; Vinogradova, 2006). This
enforcement mechanism has become a legal alternative to state courts (Vinogradova, 2006). In China, on the other hand, professional associations are sanctioned by the state and many have party or government officials in their leadership (Dickson, 2003). Such structures are arguably designed to maintain the party’s strong grip on the population.

**A Case Study: The NASSCOM Effect on the Indian Offshoring Industry**

A number of indicators such as those related to export performance and security and privacy in Indian IT industry point to the fact that India has made a significant progress on the offshoring front. Indian IT industry's revenue grew from $4.8 billion in fiscal year 1997-98 to $47.8 billion in 2006-07 (Indo-Asian News Service, 2007). One would not typically expect developing country-based firms to have better security practices than those in the developed world. In light of the stereotypically different expectations that surround privacy and security in developing countries, it is important to note that security practices in India matched or exceeded those at most U.S. call centers (Engardio, Puliyenthuruthel and Kripalani 2004). Studies conducted by Forrester Research and by the UK’s Banking Code Standards Board indicated that standards in Indian call centers are among the best in the world and there were more security breaches in and US in 2005 than in India (Precision Marketing, 2006). Much of the credit of the remarkable progress in Indian offshoring firms’ success goes to NASSCOM, which has played a phenomenal role in monitoring the industry behavior and bringing significant institutional changes.

Leahy (2004) notes that “… in contrast to China’s success in manufacturing, India’s success in services has come in spite of the government rather than because of it”. In the vacuum of weak state-crafted frameworks, non-state actors have found openings. NASSCOM has helped establish responsible industry behavior and its role in representing Indian software companies has been “exemplary” both abroad and at home (Express Computer, 2003).
NASSCOM is a non-profit organization established in 1988 to facilitate software and services business and to encourage R&D. Table 3 provides a timeline with important events, milestones, shocks and rebounds in NASSCOM’s nearly two-decade long history at the time of this writing. It is probably the most fully developed example of a professional associations found in the offshoring sector of developing economies.

Initially, 38 members started NASSCOM, which accounted for 65 percent of the revenue of the software industry at that time. Professional associations’ importance increases as a large number of businesses become aware of their existence, and the benefits offered by their membership (Vinogradova, 2006). NASSCOM’s success in guiding the industry and monitoring its members’ behaviors has created a virtual circle. As of 2007, NASSCOM’s membership grew to 1100, which accounted for over 95 percent of the revenues of the Indian software industry. NASSCOM’s members also include over 200 global companies from the U.S, Europe, Japan, China and other countries. Members' annual fees are based on their IT software and services revenue. The fee ranged from $700-18,000 in 2004 (Ticoll, 2004).

NASSCOM has established international affiliates in a number of countries including Australia and the UK (Ticoll, 2004). NASSCOM also has full time personnel in the Indian Embassy in Washington, DC to lobby for the association (Rana, 2004).

NASSCOM monitors member companies to ensure they adhere to the standards. For instance, NASSCOM requires member companies to self-police and provide additional layers of security. Non-compliant companies would lose their memberships (Trombly, 2006). NASSCOM also coordinates and collaborates with other entities for its monitoring efforts. For instance, in the early 1990s, NASSCOM teamed up with the Manufacturers Association for Information Technology, which represents the hardware makers--to launch a firm called the
Indian Federation Against Software Theft (InFAST) to curb software piracy and take pirates to court (Sharma, 1994). Similarly, NASSCOM announced its plan to have security practices of its members audited by international accounting firms (Engardio et al., 2004). Industry leaders also advocated the adoption of certification under the information security management systems (ISMS) of the British Standards Institution. The certification covers issues such as network security, data sanctity and terms of data utilization (Ravindran, 2004).

NASSCOM Foundation, the Corporate Social Responsibility division of NASSCOM, teamed up with TechSoup, a San Francisco-based non-profit organization, to launch a technology assistance program for India’s non-profit and non-governmental organizations (Business Line, 2007). NASSCOM has also developed partnership with the government, companies, social organizations, policymakers and other stakeholders to develop public-private participation (myiris.com, 2006).

Most obviously, the software and services businesses of Indian firms depend on heavy investment in sales, marketing and branding (The Economist, 2003). As is the case of most developing country-based firms (Choi, 1992; Lall, 1991), branding has been one of the major weaknesses facing NASSCOM members. Strengthening the brand associated with software and services offered by Indian firms has been of paramount importance to NASSCOM. NASSCOM lobbied with the Indian government in order to enhance brand equity for Indian software and service industry (rediff.com, 2001). These efforts have paid off brilliantly. India has succeeded in branding itself as the world's leading destination for not only relatively low end business process outsourcing (BPO) but also high-end offshoring operations. For instance, multinationals such as GE medical labs and Hewlett-Packard research facilities are outsourcing high-end operations to India (Khanna and Mohan, 2006).
NASSCOM’S roles as an institutional entrepreneur
This section analyses NASSCOM’S roles as an institutional entrepreneur in terms of the four mechanisms as noted a moment ago.

Creativity
Creativity is related to the production of new ideas (Drazin, Glynn, & Kazanjian, 1999). One aspect of offshoring sector in emerging economies that renders it interesting to us is the fact that the industry is rapidly evolving. While all professional associations define and redefine the domain of their professions—“the portfolios of activities and services over which members claim jurisdictional exclusivity” (Greenwood et al., 2002)—through a reiterative processes, these processes are of greatest relevance for the offshoring sector in the developing world. NASSCOM has played the central role on this front. In 2003, for instance, NASSCOM identified six untapped areas that were “hot” (Siliconindia, 2003).

Special creative ideas such as deployment of full time personnel in the Indian Embassy in Washington, DC, to lobby for the association (Rana, 2004), inviting different stakeholder groups over cocktails to exchange information and ideas (Parthasarathy, 2004). Other highly creative ideas are demonstrated in dissemination measures such as CyberSafety Week (Saravade and Saravade, 2007) and measures taken to counter the negative image of outsourcing in origination countries (Express Computer, 2003).

Theorization
Theorization is related to conceptualization and understanding of failings in organizations and connecting them with potential solutions (Greenwood et al., 2002). Theorization is a key stage in institutional change. As institutional entrepreneurs, professional associations may engage in theorization activities to “justify their actions, acquire legitimacy, and ensure their diffusion” (Mylonadis, 2006).
Proactive programs involving outreach activities directed towards multiple communities have also contributed to the theorization of offshoring. Such activities have contributed to the objectification process or the development of a growing consensus of the value of a social structure and its increasing diffusion (Tolbert & Zucker, 1996). Speaking of lobbying efforts to enhance India’s IPR regime, Dewang Mehta noted:

We lobbied with the government for changes in the Copyright Law. Although, the government at that stage, wanted to understand as to why we wanted these changes - as they thought it would benefit only the overseas companies. We said, maybe initially it would, but in the long run it would encourage Indians to create their own IPR. The government saw our point and in 1994, the copyright act was amended. On 10 May 1995 it was enforced (Preethi 1999).

It is important to note that offshoring has raised the ire of the public in the originating economies such as the U.S. In 2003, NASSCOM widely publicized its study that IT outsourcing to India had improved U.S. employment figures (Communications of the ACM, 2003). To help counter the negative image of outsourcing, NASSCOM also hired the public relations firm Hill & Knowlton and worked the latter to educate lawmakers about the negative implications of such measures and emphasized potential burden to US taxpayers (Express Computer, 2003).

NASSCOM also hired a former senior White House adviser, a former U.S. ambassador to India, as its chief Washington lobbyist (Giridharadas, 2007). In 2007, NASSCOM drew the attention of U.S. lawmakers to an Immigration Bill prohibiting companies with over 50 people from hiring H-1B employees if they have more than 50% employees with H-1B visas (Hindustan Times, 2007). A letter stated: “NASSCOM and the Indian IT industry clearly see this as a protectionist measure that will affect Indian IT companies, reduce the number of H1-B holders going to the US and reduce the competitiveness of the IT industry in the US” (Hindustan Times, 2007).

**Reputation**

Reputation is about recognition by multiple communities and audiences. NASSCOM members and its management teams have had some distinctive advantages leading to the associations’
reputation. For instance, Dewang Mehta, who was the head of NASSCOM from 1991 to 2001, was named by Computerworld Magazine as "Software Evangelist of the Year" for three years in a row and "IT Man of the Year" in 2000. In 2000, he was also named by the World Economic Forum as one of the “100 Global Leaders of Tomorrow” (Parasher and Chatterjee 2001).

**Dissemination**
To be effective as an institutional entrepreneur, it is critical for professional associations to communicate with the other institutional actors so that their initiatives are perceived positively (Groenewegen and van der Steen 2007). NASSCOM engages in dissemination activities directed toward multiple communities and audiences. For instance, NASSCOM-BSA alliance works with software resellers to educate end-customers and companies about the negative effects of piracy (sify.com 2005). Likewise, NASSCOM launched CyberSafety Week, an awareness campaign, which aimed to educate computer users about cybercrimes (Saravade and Saravade 2007). NASSCOM also holds regular “club” meetings in major cities. Dewang Mehta, ex-head of NASSCOM noted:

…”[W]e invite the member companies, government officials, the press, leading IT users, politicians, bureaucrats, diplomats. It is a meeting ground where a lot of information is exchanged, people are able to talk frankly [over cocktails]. It creates a good understanding between people across segments, not only among members. We hold meetings very often, about six club meetings per year per city”iii.

**The state’s regulatory and participatory roles in India and NASSCOM’s influence**
India arguably has a stronger rule of law compared to China (Varshney, 2007). Yet, having said this, it is also apparent that – like most developing countries – the applied dimensions of the legal system in India are highly underdeveloped (Engardio et al., 2004). Most of the Indian economy is “backward looking, corrupted and poverty stricken” (MacDonald 2006). Indian law on computer crime, for instance is “fuzzy”, and privacy enforcement is weak. As of 2006, no one charged for data fraud in India was convicted (Ribeiro, 2006).
A key point related to a weak rule of law is that some of rules can be broken. For instance, in 1986 when Texas Instruments (TI) proposed to establish a 100% export-oriented, foreign owned and operated subsidiary (its first outside the U.S.), India’s Department of Electronics (DOE) and the government quickly processed the license, laws that prohibited such licensing notwithstanding. Evans quotes a DOE official: “We broke 26 separate rules to accommodate TI’s Bangalore subsidiary and are willing to break more” (1992, p. 7). In this way, even before the 1991 liberalization, businesses in India had formed an intriguing partnership with key decision makers in the government.

As to the participative role, it is important to note that the economic liberalization undertaken in 1991 has been a major driving force behind the growth and increased importance of trade and professional associations. Since the 1990s, there has been a shift from a state-dominated economic policy framework towards a decentralized one. Religious, social, economic and political associations have offered a viable set of examples encouraging the development of many new trade and professional associations (Frankel, 2006). A strong mutual interdependence between the state and the private economic actors, particularly organized business groups has developed very quickly. The liberalization thus resulted in the shift of trade and professional associations’ institutional location from Cell III to IV in Table 1.

There has been an increase in leadership support for NASSCOM. This has changed NASSCOM’s pattern of interaction with the government and member companies, thereby enhancing its institutional centrality (Campbell, 2004; Scott et al., 2000). The economy is less centralized with more room for associations to flourish and to have a strong voice (Frankel, 2006).
Officials from NASSCOM member companies are among the most influential members of the Indian political elite. For instance, NASSCOM has representatives in various committees in the Central Government of India including the Ministry of Information Technology, Ministry of Commerce, the Ministry of Finance, Department of Telecommunication, Ministry of Human Resources Development, Ministry of Labor and the Ministry of External Affairs. NASSCOM also acts as a consulting body for various State Governments. Ex-NASSCOM head, Dewang Mehta was a member of the National Task Force on IT and Software Development and also a member of various bodies including IT ministry's advisory group, state planning board and Indian Institute of Information Technology in Bangalore and Hyderabad (rediff.com 2001). NASSCOM’s voice is thus heard in the government (Ticoll, 2004).

A comparison of NASSCOM and China Software Industry Association (CSIA) can be very helpful in understanding how professional associations differ in terms of “social, organizational, and institutional locations” (Campbell, 2004, p. 187) and hence the degree of eliteness. In China, special interest groups and non-government entities are organized loosely (Li et al., 2004) and there is little room for these groups to influence national policymaking (Su and Yang, 2000). Chinese government’s control arguably is a major obstacle to the autonomy and growth of associations in the country (Dickson, 2003; Frankel, 2006). Compared to NASSCOM, CSIA has thus played a relatively minor role in transforming structure and practices of Chinese companies (Shen, 2005).

**The state’s regulatory role and NASSCOM’s influence**

We noted earlier that, as is the case of many developing economies, India has a relatively weak rule of law. In this context, NASSCOM’s influence can be divided into two broad categories: strengthening the rule of law and performing some of the regulative functions.

*Strengthening the rule of law*
NASSCOM partnered with the Ministry of Information Technology to draft data protection and data-privacy laws to respond to privacy concerns of offshore clients (Hazelwood et al., 2005,Engardio et al., 2004). The goal is to bring Indian data protection laws to the same level as European and U.S. standards (India Abroad, 2004). In 2006, NASSCOM drafted plans for new legal measures to safeguard intellectual property and prevent data theft (IT Week, 2006).

NASSCOM works with police officers, lawyers and industry bodies to ensure enforcement. NASSCOM meets with bar councils in different cities to educate legal communities, meeting with police officers to educate cyber security and how to recognize and prosecute cybercrimes (Ticoll, 2004). NASSCOM is working with the Indian government and organizations in terms of crafting and enforcing laws to tackle computer crime (IT Week, 2006). NASSCOM started working with Mumbai police since 2003 (Saravade and Saravade, 2007). NASSCOM helped police departments of Bombay and Thane in establishing a cybercrime unit and in training officers to investigate data theft (Indo-Asian News Service, 2006). Similar units were planned for other cities (Engardio et al., 2004). In 2005, NASSCOM promptly announced a training initiative for Pune’s cybercrime unit, which caught data crime perpetrators from MphasiS, a major ICT company (Cone, 2005). NASSCOM also offered to work with authorities in the U.K. and India to investigate cases involving identity theft (tribuneindia.com 2005). The Data Security Council of India (DSCI), a self-regulatory member organization set up by NASSCOM, has the ability to expel non-compliant members or call in police — another example of the association’s growing regulative role (McCue, 2007).

NASSCOM asked the Indian government to create a special court to try people accused of cybercrimes and other violations of the country’s Information Technology Act. The Indian government is considering NASSCOM’s request in establishing such courts (Ribeiro, 2006).
Performing some of the regulative functions

Some of NASSCOM’s roles are associated with India’s weak regulatory environment. Countries with weak rule of law lack standard identifier like the U.S. Social security number making it difficult to check potential employees’ background. In some countries, it costs up to $1,000 per employee to check background thoroughly (Schwartz 2005). Likewise, India has no law requiring the protections of personal data. For instance, while India’s Information Technology Act of 2000 has set up criminal penalties for certain violations of confidentiality and privacy, these privacy standards do not apply to businesses or commercial enterprises (GAO, 2006). The act also doesn’t include a general data protection.

In an attempt to fill the regulatory vacuum, NASSCOM has introduced "assessment and certification" programs for would-be employees, which are expected to discourage illegal and unethical behaviors (The Economist 2005, 2006a). The National Skill Registry launched by NASSCOM in January 2006 is a voluntary registry for call center employees, which allows employers to perform background checks on existing or prospective employees (Trombly, 2006; Trombly and Yu, 2006). Creation of criminal and public records databases has been a part of the program (Fest, 2005). Potential employees can register their details in the database (Sawas, 2005).

NASSCOM worked for over a year and invested $300,000 to launch an independent self-regulatory agency to improve privacy and data protection standards for the country's offshore IT services and BPO clients (Precision Marketing, 2006). The Data Security Council of India (DSCI), a self-regulatory member organization set up by NASSCOM, can expel non-compliant members or call police (McCue, 2007). The agency is funded by membership fees (Information Management Journal, 2006). In addition to speeding up the process of background checks, the
new system – administered by an impartial third party-- would make background checks easier to accomplish, less expensive, and more accurate (Schwartz, 2005).

A professional association’s enforcement strategy becomes efficient and powerful if a large number of firms in the industry join the association (Vinogradova, 2006). NASSCOM members supported the new body enthusiastically. Over 1,000 companies accounting for 98% of the Indian IT industry agreed to take membership of the new body (MarketWatch: Global Round-up, 2006). As to the importance of the membership in the new body, NASSCOM President, Kiran Karnik put the issue this way: "While it would be voluntary for the members to be part of the body, it would ensure at the same time that market forces make it mandatory for companies to register themselves” (Business Line, 2007).

Finally, it is important to note that an organization is more likely to bring changes if it has a clear understanding of the new destination and the way to reach the destination (Greenwood and Hinings, 1996). Professional associations play important role in the theorization process by facilitating the formation and reproduction of shared meanings and understandings (e.g., Ruer & Scott, 1998; Scott & Backman, 1990; Greenwood et al., 2002). In this regard, it is important to note that NASSCOM’s self-regulatory measures also include a training component to help BPO companies comply with new regulations (Trombly, 2006).

**The state’s participatory role and NASSCOM’s influence**

From the perspective of the development of modern economic sectors (e.g., offshoring industry) in a developing economy, which resembles the First World-type economy (Thurow, 2004), a participatory state cuts both sides. On the one hand, the government has fulfilled the wishes of NASSCOM members. For instance, the government responded favorably to NASSCOM’s lobbying efforts against income tax on profits (Table 3). Links between industry and government has helped ensure new policy proposals that are ‘enterprise-friendly’ policies (Tessler et al.,
NASSCOM has been active in providing inputs to the government, seeking improvements in infrastructure for producing software, and promoting exports (Nidumolu and Goodman, 1993). There has also been political support for collective infrastructure needs (Pingle, 1999). In the late 1990s, NASSCOM’s lobbying efforts with the government led to the announcement of guidelines for call centers to operate in the country. Nonetheless, the initial guidelines were not comprehensive and did not address all the relevant issues. NASSCOM thus continued its lobbying efforts for more comprehensive guidelines (Preethi, 1999).

The population depending on the traditional economy, however, also has a voice in the national policy making. While the outsourcing sector has become a new low-wage First World economy (Thurow, 2004), thanks to education and technology (Ali, 2006), the traditional sector is economically disadvantaged. Most of the Indian economy is “backward looking, corrupted and poverty stricken” (MacDonald, 2006). Offshoring has arguably deepened social divisions in emerging economies (Aspden, 2006).

The overriding reality thus is that even if policymakers are interested in developing a modern economic sector (e.g., offshoring), the backwardness of competing economic sectors doesn’t allow them to have a focused priority. In India, there have been controversies with regard to the impact of India’s recent economic reforms, particularly the effect on the poor (Frankel, 2006). Indian journalist Lionel Messias points out: "Government officials do not hesitate to point out that with IT gaining precedence over all other sectors in [Andhra Pradesh Chief Minister Chandrababu] Naidu's scheme of things, little attention is being paid to agriculture, the main and proven base of [Andhra Pradesh's] economy" (cf. Malhotra, 2001).

As it happened in the Andhra Pradesh (AP) state of India in the late 1990s and the early 2000s, if policymakers allocate disproportionately more resources to develop the offshoring
sector, they face stiff opposition from the mass of population that depends on the traditional economy. Political opponents attacked Naidu’s decision to raise rice and electricity prices by cutting subsidies as “anti-people”, and branded as elitist his cultivation of technology and foreign capital (Chanda, 2000). In the case of the AP, for instance, the so-described “laptop” Chief Minister who played a pivotal role in the development of the state’s information technology industry including the offshoring sector was voted out of the office in the May 2004 election. In such situations, most obviously professional associations are in a better position to bring institutional changes.

**Discussion**

Before proceeding, it is important to note one thing: NASSCOM is not a typical professional association. Although there are many developing world based professional associations established to bring institutional changes, few have done their jobs more skillfully than by NASSCOM. The association unfailingly showed its capability to monitor the members’ behaviors. Indeed, NASSCOM is described as “one of the most powerful trade bodies in India” (Mukhi, 2001).

Most of NASSCOM’s success can be attributed to its effective management team. NASSCOM has been led by representatives from India’s high performing organizations. Dewang Mehta, who was the head of NASSCOM from 1991 to 2001, was known as “one of the best lobbyists” in India (Mukhi, 2001).

Prior researchers have noted that associations have to depend on the state to achieve some of their goals (Walzer, 1993). The NASSCOM case shows that due to the relatively weak coercive power of professional associations, such associations may turn to stronger regulative institutions such as the court systems and police to enforce the substance of legal claims.
As noted above, starting the early 1990s, NASSCOM took a wide variety of measures intended to strengthen the country’s intellectual property rights (IPR) regime. These measures have paid off brilliantly. Strong copyright laws have facilitated firm-level innovations in the country (Varshney 2007). It is important to note that foreign MNCs are more confident to outsource activities involving IPR and sensitive business information to India than to China (The Economist, 2006). A similar point can be made about the development of capital market (Varshney, 2007). In China, local politicians hinder mergers and consolidation, especially the ones involving firms outside their regions, while NASSCOM encourages such activities in India to help the industry (The Economist, 2006). The China-India difference on this aspect is powerfully illustrated in industry structures in the two countries. For instance, average size of software firms in terms of the number of employees is 25 in China compared to 174 in India (Kshetri 2005). Likewise, most companies in the Chinese offshoring sector have fewer than 1,000 employees compared to 292,000 combined headcount at India’s top-5 firms – with the top firm TCS employing 83,500 people representing 60 nationalities (Press Trust of India, 2007). As noted above, the existence of high performing and exemplar organizations has helped transform the behaviors of firms in the Indian offshoring sector. In fact, NASSCOM’s role in India goes much beyond the domain of software and services. For instance, NASSCOM officials have provided powerful lobbying for the Indian venture capital industry (Uttam, 2005).

Lawrence et al. (2002) argue that generation of proto-institutions —“new practices, rules, and technologies that transcend a particular collaborative relationship and may become new institutions” — is important for bring institutional changes. The research literature provides abundant evidence that an institutional change measure is more likely to be successful if attention is paid as to how the measure is embedded in the “wider institutional field” (Lawrence
et al. 2002). In this regard, it is important to note that NASSCOM’s institutional change measures are viewed as a part of larger and more complex policymaking arenas that transcend the offshoring sector. NASSCOM has emphasized the importance of the Indian ICT industry’s economic contribution. NASSCOM has emphasized the potential of offshoring sector as an avenue of job creation for a seemingly bottomless source of the Indian labor force. In a study, NASSCOM estimated that call center and back office operations would create one million jobs by 2008 (Ghosh, 2001). The NASSCOM Foundation’s measures and its partnership with the government, companies, social organizations, policymakers and other stakeholders to develop public-private participation as noted above illustrate the generation of proto-institutions. Prior researchers have also noted that “dissemination that brings ideas to the public domain” is critical to bring institutional changes (Svejenova et al., 2007). In this regard, dissemination measures such as CyberSafety Week (Saravade and Saravade, 2007) and those related to counter the negative image of outsourcing in origination countries (Express Computer, 2003) are have strengthened proto-institutions. NASSCOM ex-head, Dewang Mehta put the issue this way:

"In 1991, when I used to say, we are a lobby group, people used to take offence. How can you call an association a lobby group? But we were honest. We were not lobbying for something that was a vested interest. We were lobbying for something that was good for the entire industry, good for the country as well as good for the people of the country. That is the philosophy at Nasscom. We do not lobby for something that is only good for the industry, but is not good enough for the country or the people of our country (Preethi, 1999).

Different institutional sources differ in terms of the nature of legitimacy and power. For instance, Vinogradova (2006) argues that formal associations’ legitimacy can be mapped with “strategies of positive incentive” which entail “threat of exclusion from future transactions” while entities such as courts, security firms, private arbitration, use of criminals and/or connections work by “strategies of coercion”, which are related to threat of physical and financial punishment (Vinogradova, 2006). In this regard, one of the most straightforward explanations for NASSCOM’s success in promoting and reinforcing desired industry behavior is
its employment of diverse strategies. In addition to its role in developing and enforcing industry
codes and standards, NASSCOM has successfully collaborated with the government and law
enforcement strategies. In this way, “strategies of positive incentive” are combined with
“strategies of coercion” (Vinogradova, 2006).

**Conclusion and Implications**

This paper provided novel and unique insights related to professional associations’ roles in a
rapidly emerging economic sector of a developing economy. The overarching message conveyed
by our theory is that in a rapidly developing economic sector of emerging economies, under
certain conditions, professional associations are likely to be relatively more effective than the
government in developing templates and have powerful impact on members’ behaviors. With
well-focused priorities, professional associations are likely to be better, more effective and more
efficient institutions. For instance, NASSCOM has conceived what type of industry behavior is
acceptable to clients based in the developed world. In addition to direct influences, professional
associations influence industry behaviors through longer causal chains and externality
mechanisms. For instance, India’s offshoring sector has some successful firms. Externalities
unique to the offshoring industry have helped improve industry behavior.

It is an accepted axiom that an industry’s success is a function of its ability to re-align
and adapt with the changes in major shifts in technology, market and other external factors
(Kumerasan and Miyazaki, 2001). As noted above, due to the inadequate technical competence
(Pugh, 1999) and a lack of funds and resources (Saez, 1998), developing country governments
are ill prepared to help industries re-align and adapt with the changes in the environment.

Institutional changes discussed above have different degrees of substantiveness. For
instance, as noted above, the Indian government is considering NASSCOM's request to create a
special court to try people accused of cybercrimes and other violations of the country's
Information Technology Act (Ribeiro, 2006). Likewise, NASSCOM has gained political support for collective infrastructure needs (Pingle, 1999). This means that the government has taken at least symbolic actions. Theorists argue that a symbolic change may lead to more substantive changes subsequently (Campbell, 2004, p. 43, Edelman, 1990, 1436-37, Forbes and Jermier, 2002, 208, Guthrie, 1999, xii, Oakes et al., 1998).

Future research on this topic should help us better understand the phenomenon of professional associations that are becoming pervasive in the rapidly growing global offshoring industry, and perhaps to find better ways of managing it. Future research based on the present framework can be extended to other emerging economies and/or economic sectors. They might differ from the offshoring sector examined in this paper in terms of factors such as the degree of newness, development of regulatory frameworks and pressure for customer-centric behaviors.

Different theoretical contributions and various empirical studies have led to the accepted view that the government’s supportive role through such mechanisms as new laws, investment incentives, foreign technology transfer, and other supply-push and demand-pull forces (King et al 1994; Montealegre, 1999; Kraemer et al., 1992; Wong, 1998) play an important role in the development of an ICT industry. In this initial model, we did not extensively pursue this line of reasoning for the sake of simplicity. It may, however, be an area to examine in the future when constructing more complete and complex model of professional associations’ influence in industry behaviors.

Research conducted across various settings (e.g., American brewery population (Baron, 1962) and the Argentine newspaper population (Carroll, 1987: 135)) indicate that organizations established in an adverse environment are able to experience collective learning and possess capacity to survive after the “adolescence” stage (Swaminathan, 1996). It is important to note
that many NASSCOM members also dealt with adverse conditions. For instance, visa regulations against Indian software professionals, particularly in the U.S. in the early 1990s, forced Indian companies to opt out of the “body-shopping practice” and to do works in India (Behari, 1994). This helped enhance their IT skills thereby bringing competitiveness in its IT exports. These external factors’ influence on NASSCOM members’ performance might also be worthwhile target of study.

One issue that was raised in this article but not fully developed was effects on the industry behavior via mimetic isomorphism. It is reasonable to expect that professional associations facilitate mimetic isomorphism. For instance, several prominent theories argue that normlike institutions such as those associated with professional associations are effective if behaviors are observable (Bendor & Swistak, 2001; Ostrom, 2000; Weiss, 2000). A related point is that learning from the experiences of others is a sensible and optimal strategy when means-end relations are not well understood (Strang and Meyer, 1993). Most obviously exemplar firms serve as models for smaller firms to imitate. In such a case, knowledge flow takes place by externalities (Audretsch and Stephan, 1996; Feldman, 1999; Niosi and Banik, 2005). It is important to emphasize that while mimetic isomorphism may take place in the absence of a professional association, the association is likely to accelerate the process. Beyond all that, the existence of exemplar firms also facilitates population-level learning. Miner and Haunschild define population level learning as "systemic change in the nature and mix of organizational action routines in a population of organizations, arising from experience" (1995: 118). One avenue for future research thus would be to examine the difference in the nature of mimetic isomorphism in companies that are members in professional associations (e.g., NASSCOM) and those that are not members.
The NASSCOM case shows that the association helped the government develop new regulatory frameworks and enforce laws while performing some of the regulative roles. In this regard, our work also opens new areas of research related to a typology in terms of the regulative roles that are enforced by the government versus those that are enforced by the professional associations.

Finally, one of the important goals of NASSCOM was to enhance the brand equity related to the Indian offshoring sector. Researchers could also look at NASSCOM’s activities from a collective brand building perspective.
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Table 1: Professional associations’ influence in members’ behaviors under different conditions of the state’s regulatory and participatory tendencies

<table>
<thead>
<tr>
<th>State’s Regulatory Tendencies and Mechanisms</th>
<th>State’s Participatory Tendencies</th>
<th>Strong</th>
<th>Weak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>I</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>• Influence on industry behavior via direct as well as indirect effects (e.g., professional association in the U.S. such as ACLU)\textsuperscript{iv}.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td></td>
<td>• Associations’ impact on industry behavior is relatively lower compared to the state’s coercive roles (e.g., professional associations in China).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Associations’ direct effects are more prominent than indirect effects (e.g., NASSCOM in the post-1991 India).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Room for breaking laws: Associations can play roles as institutional entrepreneurs (e.g., NASSCOM in the pre-1991 India).</td>
<td></td>
<td></td>
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</tbody>
</table>

Table 2: Professional associations’ influence in maintaining established orders and creating new orders

<table>
<thead>
<tr>
<th></th>
<th>Direct effects</th>
<th>Effects associated with indirect causal chains and externality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintaining established orders</td>
<td>• Enforcing industry codes</td>
<td>• Providing law enforcement agencies with expertise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mimetic effects associated with high performing members</td>
</tr>
<tr>
<td>Bringing institutional changes</td>
<td>• Developing new industry codes and norms to account for shifts in technology, market and other external factors</td>
<td>• Help develop national regulative framework</td>
</tr>
</tbody>
</table>
### Table 3: NASSCOM’s evolution: A timeline

<table>
<thead>
<tr>
<th>Time</th>
<th>Milestone</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>NASSCOM was established by 38 members.</td>
<td>The 38 members accounted for 65 percent of the revenue of the software industry at that time.</td>
</tr>
<tr>
<td>1990</td>
<td>NASSCOM began a public awareness campaign to educate software users and to encourage lawful use.</td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td>NASSCOM lobbying efforts led the Government to introduce Section 80 HHE in the Income Tax Act.</td>
<td>This allowed profits from software exports to be exempted from income tax (Preethi 1999).</td>
</tr>
<tr>
<td>1991</td>
<td>NASSCOM lobbied with VSNL / STP and got high-speed data communications links (Preethi 1999).</td>
<td>The high speed links helped to increase offshore development as a delivery model for software exports.</td>
</tr>
<tr>
<td>Early 1990s</td>
<td>NASSCOM teamed up with the Manufacturers Association for Information Technology to launch the Indian Federation Against Software Theft (InFAST).</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>NASSCOM and BSA setup the Anti-Piracy Hotline at New Delhi and a toll free number.</td>
<td></td>
</tr>
<tr>
<td>May 1998</td>
<td>NASSCOM head Dewang Mehta was appointed as a member and spokesman of the high-power IT Task Force.</td>
<td>The Task Force was set up by the Prime Minister to draft a national IT policy.</td>
</tr>
<tr>
<td>1998</td>
<td>NASSCOM lobbied with the National IT Task Force to increase IT spending by government departments.</td>
<td>In 1999, the government issued guidelines, which required the government departments to spend 1-3% of their budgets in computerization.</td>
</tr>
<tr>
<td>May 1999</td>
<td>NASSCOM organized the first Indian conference on `IT Enabled Services’ in New Delhi.</td>
<td>The conference was attended by more than 800 people.</td>
</tr>
<tr>
<td>April 2001</td>
<td>Dewang Mehta, the NASSCOM chief, died.</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>NASSCOM announced its plan to have security practices of its members audited by international accounting firms (Engardio et al. 2004).</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>NASSCOM drafted plans for new legal measures to safeguard intellectual property and prevent data theft.</td>
<td></td>
</tr>
<tr>
<td>January 2006</td>
<td>The National Skill Registry was launched, which allows employers to perform background checks on existing or prospective employees.</td>
<td>It is a voluntary registry for call center employees.</td>
</tr>
<tr>
<td>2007</td>
<td>NASSCOM’s membership grew to 1100 including over 200 global companies.</td>
<td>They accounted for over 95 percent of the revenues of the Indian software and service industry.</td>
</tr>
</tbody>
</table>
Endnotes

iii Parthasarathy’s (2004) interview with the late Dewang Mehta, former Secretary, NASSCOM.
iv In the U.S., in the early 2001, technology-industry lobbyists and consumer and civil-liberties activists including the American Civil Library Association, Electronic Privacy Information Centre and Consumer Federation of America circulated a letter to members of Congress and the president calling for a stronger set of privacy rules (Benson and Simpson 2001).
Founded in 1892, the University of Rhode Island is one of eight land, urban, and sea grant universities in the United States. The 1,200-acre rural campus is less than ten miles from Narragansett Bay and highlights its traditions of natural resource, marine and urban related research. There are over 14,000 undergraduate and graduate students enrolled in seven degree-granting colleges representing 48 states and the District of Columbia. More than 500 international students represent 59 different countries. Eighteen percent of the freshman class graduated in the top ten percent of their high school classes. The teaching and research faculty numbers over 600 and the University offers 101 undergraduate programs and 86 advanced degree programs. URI students have received Rhodes, Fulbright, Truman, Goldwater, and Udall scholarships. There are over 80,000 active alumnae.

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