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## IS Discipline in the IT Services Land: An Exploratory Study of IS in India

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### Abstract

*Information Systems (IS) research is characterized by plurality of methodologies, perspectives and contexts giving rise to various communities within the discipline. Studies of IS communities in North America, Europe and Asia-Pacific highlight the cognitive diversity, institutional distribution and research themes based on geography. While regional variations have been acknowledged, the debate on the identity and status of IS is on-going. In this paper we conduct an exploratory study of the IS research paradigm in India and contribute to IS discipline studies by bringing in the India perspective. We analyse the 'cognitive' and 'behavioural' legitimacy of IS discipline in India based on interviews conducted with Indian business school professors from IS and non-IS disciplines. The focus of the study is to understand the current state of IS research community in India. We find a need to establish a 'collective identity' of IS research in India, which will benefit both the Indian and larger IS community to work on unique research possibilities presented by the socioeconomic context of India.*

### Keywords

Information Systems, IS discipline, IS identity, Indian IS research

### INTRODUCTION

The status of Information Systems (IS) as a discipline has been debated over years. Benbasat and Zmud (2003) have argued the importance of establishing the identity and research paradigm of IS. Several others have expressed varied views on the IS identity in terms of flexibility of identity, academic legitimacy, roadmaps for future research and the relationship with reference disciplines (Lytinen and King 2004; Robey 2003). Several studies took a view that the field of IS is experiencing an identity crisis (Banville and Landry 1992; Benbasat and Zmud 2003; Khazanchi and Munkvold 2000) while others refute this argument (Galliers 2003; Grover 2012). While the issue of legitimacy of the field is still under debate, studies have identified the regional differences in the IS research paradigms, particularly focused on the North American and European researchers (Buhl et. al. 2012). It has been widely identified that researchers from different regions of the world differ in the research approaches and the research priorities adopted (Avgerou et. al. 1999; Mylonopoulos and Theoharakis 2001).

The challenges brought in by the rapid pace of change of information technology (IT) poses a threat to both IS researchers and practitioners and many times IT has subsumed IS in the course curriculums (Markus and Saunders 2007; Somers 2010). Challenges also arise from new phenomenon like e-business, knowledge management, outsourcing, globalization and social media which transcend disciplinary and regional boundaries and support activities at a global level. Hence the organizational and behavioural issues and socio-technical changes in other parts of the world, especially the developing countries are significant for IS research and practice (Avgerou 2008). North America, Europe and Australasia have well established IS journals like MIS Quarterly (MISQ), European Journal of Information Systems (EJIS) and Australasian Journal of Information Systems (AJIS), whereas the Pacific Asia region has been able to only recently establish a regional IS journal, Pacific Asia Journal of the Association for Information Systems (PAJAIS) (Liang 2009). Studies relating to the profile of IS research publications in various top IS journals and conference proceedings show that while universities and researchers from Singapore, Hong Kong, Taiwan and China are represented, Indian IS research does not show up in these studies (Chau et. al. 2005; Dwivedi and Kuljis 2008; Gallivan and Benbunan-Fich 2007). A recent study of the nine leading IS journals shows a modest number of publications from IS researchers in India (Clark et. al. 2009), while a look at the Asia Pacific journals shows very little representation from Indian IS researchers (Liang 2010). This lack of representation of Indian researchers may be due to many reasons like lack of awareness of the publication forums, journal publication policies, conference locations, mismatch between the top journal objectives and researcher interests, relevance of Indian data to the journal readers, incentives for publications etc. Some of these issues could be applicable to other disciplines and academic fields in India.

India occupies the centre stage for global IT services and is often called the "Back office to the world". But why hasn't this overwhelming success in IT services translated into vibrant IS research? India's growing domestic IT

market spurred by increased government spending on IT, penetration of mobile technologies and its position as the preferred IT/R&D sourcing location, offers unique research possibilities for IS researchers. Earlier studies on India focused on identifying the key IT management issues in India from a practitioner's perspective (Palvia and Palvia 1992). However, there is a dearth of studies looking at the IS research paradigm and IS academic curriculum in the Indian context.

Our paper contributes to the study of IS discipline by bringing in the India based perspective. The current study is an attempt to explore the current IS research and education scenario in India. The primary purpose of this paper is to understand the Indian IS research community in its current state. Unlike studies which try to understand the IS research dimension by analysing the IS publications from a region, we explore the IS discipline in India by understanding the perceptions of both the IS and non-IS faculty in Indian business schools. While we do not join the IS identity debate, we analyse the state of IS in India and find a lack of "collective identity" of the Indian IS researchers, which hinders the growth of the discipline in India. A "collective identity" will make IS research contributions more visible and lead to a greater impact of research. The next section elaborates on the research question and background, followed by the methodology description in the subsequent section. We provide an overview of IS Research in India based on our (the authors') association with this community, followed by the description of the Indian academicians' perspectives on the Indian IS discipline and the analysis of the findings. We conclude by identifying the implications of this preliminary study findings for both the Indian and the global IS research community.

## RESEARCH QUESTION AND BACKGROUND

This paper attempts to throw light on the current state of academic IS discipline in India. Some of the broad questions explored are – What is the dominant IS research paradigm in India? What are the research themes pursued by the Indian IS academic community? How does the IS research in India contribute to the future and cumulative IS knowledge?

To understand the IS research paradigm, it is important to assess the status of IS in the Indian context. While knowledge of IT and its use is growing in India, does IS have an identity in the academic community? Banville and Landry (1989) have characterized the state of IS discipline to be that of 'fragmented adhococracy'. Following this, Benbasat and Zmud (2003) introduce the need to increase 'cognitive and socio-political legitimacy' of the discipline in outsider's views as a means to establish an identity for the IS discipline. De Sanctis (2003) proposed the idea of 'behavioral legitimacy' which refers to the views and actions of those within the IS field. Such opinions of both IS and non-IS researchers about IS, will help determine the position of IS field as a discipline.

The significance of country differences, the local orientation and characteristics of the IS communities have been highlighted by various studies (Avgerou et al 1999; Buhl et al 2012; Frank et. al. 2008; Sato et al 2009). As compared to the positivist quantitative approach taken by North American IS researchers, the European IS researchers were found to be predominantly interpretive in their research approach (Avgerou et al. 1999). While the Scandinavian countries adopt a 'socio-technical and humanistic' approach to technology (Avgerou et al. 1999), the German IS researchers objective is to solve business problems using technology (Buhl et. al. 2012; Frank et. al. 2008). The other English speaking IS communities are Australasian and British scholars who bring in their own diversity to the IS discipline. There was a focused study of IS discipline in Pacific Asia which covered six countries, but India was not part of that study (CAIS 2007). The various country level studies of IS research have provided a view of the state of the IS academic field in the respective country, helped plan the research agendas, identify platforms and forums for researcher interactions (CAIS 2007; Sato et al 2009; Zhang 2006).

IS in developing countries (ISDC) is another dimension of diversity in IS research. ISDC focusses on the socio-technical context and the related issues while contributing to the broader IS field (Avgerou 2008; Walsham and Sahay 2006). ISDC related research in India has attracted researchers from various disciplines across the world investigating the impact of IT (Walsham and Sahay 1999). Another dimension of IS research which brings out the region specificity is the IS/IT practitioner's issues and concerns. Palvia and Palvia (1992) was one of the first studies which focussed on IS issues faced by managers in India and found some unique differences in the top MIS issues between India and US. But there is a scarcity of studies which have looked at the IS academic discipline in India and how it compares with the rest of the world.

## METHODOLOGY

Understanding the state of a discipline is about understanding 'the social dynamics of the research community' i.e., the characteristics of the scholarly community and the communications among scholars (DeSanctis 2003; Price 1986). Drawing from these earlier studies on the IS research paradigm, the current study tries to understand the IS research paradigm in India by focusing on both the 'cognitive' and 'behavioural' legitimacies.

To get the holistic view of IS research, faculty from both IS and non-IS disciplines in business schools have been interviewed. Qualitative open-ended semi-structured interviews have been used for data collection. Qualitative interviewing is known to be a method to understand the underlying social meaning laying emphasis on 'depth, nuance, complexity and roundedness in data' (Mason 2002). This method of interactional exchange of dialogue, as used in earlier studies of IS field in specific regions (Frank et. al. 2008), helped to get the direct views of the interviewees and achieve depth in the study.

India has more than 2500 business schools which are rated regularly by popular private rating agencies. However, since only a few top ranked schools are actively involved in research, we choose to study the websites of the top 20 Indian business schools to identify members of the IS research community, the profiles of the IS researchers, their research interests, publications and the type of IS courses being taught. We found that only the top 10 to 12 business schools have IS faculty with a research focus. We interviewed six IS researchers and ten non-IS researchers from three of the top business schools to get the views of members from both inside and outside the IS discipline. Among the non-IS researchers, we spoke to researchers from Economics, Strategy, Marketing, Finance, Public Policy, Organization Behaviour, Operations Management, Quantitative Methods, and Entrepreneurship. While all the researchers interviewed had a doctoral degree, they had varying levels of experience in academics ranging from 30 years to a few months with exposure to working in more than one university / business school and country / region in many cases. Based on the literature review of influential papers discussing IS research and identity and the information gathered from the Indian IS researchers profiles through the websites, we identified broad areas for discussion with the interviewees. We prepared a separate set of questions for the non-IS researchers. The opinions of the interviewees have been sought about the IS research in India, IS curriculum in business schools, research collaborations and the opportunities provided for IS research in the Indian environment. The interviews were conducted face to face or through conference calls over three months from February 2012 to April 2012. In a majority of the interview sessions three authors were present and notes were taken by at least two authors to ensure completeness and accuracy. The interview transcripts, the information available from faculty websites and the authors' knowledge and association with the IS discipline and IT industry in India was used to code and analyse the information gathered.

A brief profile of the authors and their background will ensure that the reader understands any biases which may have been introduced in this study. The authors have been associated with the Indian IT industry and academia and between them have an industry experience of 25 years and academic experience of 15 years. The authors have a global work experience (worked in India and outside) and collaborate with IS researchers across the world.

## **IS RESEARCH IN INDIA**

The Indian IT services and outsourcing industry has flourished in the global market for the last two decades and the domestic IT market is also growing with increased IT spending by both the government and Indian companies. This has created a huge demand for IT skills which has spurred an increase in the number of universities and graduate schools offering courses in IT. While this has brought IT to the limelight in Indian academic circles, it has always been viewed as a technical or an engineering field. The field of Information Systems has not gained similar visibility in Indian academic field and has many a times been overshadowed by the popularity of IT. In India, the management programs are broad based with students studying various management subjects as part of their coursework, and there are very few schools which offer specialization in IS. Many of the Indian business schools (or management institutes as they are called in India) offer IS courses; but there is a wide variation in the quality, content of courses taught and the faculty qualification and their research interests. We provide an overview of the IS academic field in India based on our experience and information gathered in preparation for this study.

### **Department**

Like in the rest of the world, even in India, IS as a separate department exists only in a few schools. IS research activity is found only in the top 12 business schools in India. The next tier of business schools have IS/IT courses being offered by faculty whose main focus is teaching or by using instructors from industry. In some business schools IS courses are not being offered. The name and focus of the IS department varies across business schools and has a predominant IT focus in many cases.

All the IS faculty from the top Indian business schools have a doctoral degree from premier institutes across the globe with doctoral specializations mostly in Computer Science, IS, MIS, Operations Management or Mathematics and these faculty members are actively involved in IS research in addition to teaching IS related courses. The faculty in those business schools which offer IS courses but do not have an IS research focus, usually do not have a doctoral degree but come with experience in the IT industry.

## Journals and Conferences

There are no India based IS oriented journals or conferences. Many of the conferences focussing on IT management, Software Engineering, General Management are the places where IS research gets presented and discussed. There are many practitioner oriented conferences focussing on software development processes, project management and business processes like Six Sigma. There have been rare instances of top tier IS conferences like PACIS'09 and IFIP WG 9.4 Conference -2002, being held in India.

## Professional Bodies

Most of the global professional associations in the field of IT and computing have an India based chapter like IEEE Computer Society, ACM, and Computer Society of India. But there are no professional bodies for IS researchers in India. There were about 125 AIS members (as of July 2012) from India.

## ACADEMICIANS PERCEPTIONS OF IS DISCIPLINE

The interviews capture the perceptions about IS discipline from the perspective of IS faculty and of non-IS faculty from the Indian business schools. IS faculty have been interviewed to understand the 'behavioural legitimacy' and the dynamics of research community in India. The non-IS faculty have been interviewed to understand the 'cognitive legitimacy' and their views on IS-based interdisciplinary research. Based on the interviews, the perceptions and opinions of the interviewees have been divided broadly into the categories: IS identity, IS Research and IS curriculum. As this is an exploratory study we present in many cases interview excerpts to highlight specific aspects of Indian IS discipline.

### IS Identity

The IS researchers felt that there is a lack of IS knowledge in India due to the excessive focus on IT. The common opinion was that identity of IS department in their institution is surrounded by ambiguity in that other discipline faculty are not clear about what IS means. As IS does not exist as an independent department in most of the business schools, the identity of IS loses clarity among students and even at the institution level. One of the IS researchers mentioned that the loss of IS identity can be attributed to the pervasiveness of IT ... *"everyone uses IT tools. IS and IT are used interchangeably ... because IT can be self-learnt it is assumed IS too can be..."* In many business schools since IS is combined with other disciplines, the number of core IS courses that can be floated is restricted as there is a department level cap on the number of core course offerings. So IS courses like MIS are being offered only as electives even in some top Indian business schools *"...Administrative issues are impacting academic issues. Questions about IS being a separate area and offering IS as a core course should be seen as different issues..."*

Many of the non-IS researchers were not aware of what exactly constituted the IS discipline and viewed IS as being synonymous with IT. For them, the immediate significance of IS was that IS made a lot of shared information available based on their experience of using IT tools for data extraction and analysis of large data sets. Some of them were unable to differentiate between the business school's IT group and IS faculty responsibilities.

However, some of the non-IS researchers interviewed were knowledgeable about IS. They had experience working with IS deployment in organizations and appreciated the benefits and impact of IS. *"...IS is being applied in society; social interactions and people relations are changing in a big way due to IS"*. Some of the research interests of non-IS faculty focussed on IT-enabled service delivery, e-governance, study of Indian IT industry, inclusive business models (with IT playing a role), how Indian IT can move up the value chain. The lack of core IS theories did not appear to concern these non-IS faculty. They acknowledged that IS has many frameworks and is an applied discipline. *"...IS is a hybrid evolving domain, this is not a deficiency but the beauty of the field..."*. They pointed out areas where IS could play an important role such as IT-enabled product changes, strategic role of IT, IT in helping the bottom of pyramid markets, challenges of building IT system based on predictive behaviour and crowd sourcing. Some of them mentioned that the "IS" focus is missing in the e-government projects and IT is portrayed as "panacea for all problems". Majority of the research areas mentioned by the non-IS interviewees were related to the use of IT/IS at the organization or government level.

The IS researchers interviewed were of the opinion that IS scholars are uniquely qualified to handle questions like open source development, legal issues related to IT usage in business and society, design of systems and policies related to open innovation and social computing and so on. *"..Issues and opportunities brought about by IS/IT usage should be handled by IS researchers as it needs IT/IS domain knowledge"*. These multidisciplinary research issues are better handled by IS researchers due to their ability to appreciate technology and its impact on organizational behaviour. Though there are issues due to ambiguity of the IS discipline, they were of the opinion that many research problems exist where IS researchers can bring in unique insights which influence managerial decisions and policy making.

## IS Research

All IS faculty interviewed have been trained in positivist research, but most of them acknowledge the importance of other research methodologies as well. The research methodologies adopted are found to be dependent on the epistemological and ontological inclinations. “...my research paradigms align to radical structuralism by ideology, logical positivist by training and social relativist in terms of most recent research and the thesis guided so far...” (drawing from Hirschheim and Klein’s (1989) four paradigms of IS development). Some of the IS researchers are of the opinion that in IS areas where theories have not evolved, it is required to adopt an interpretive or critical approach as positivist methods do not provide any new insights. ‘...quantitative surveys just scratch the surface of the problem...’.

Qualitative methods, especially case studies, appeared to be favoured by most of IS researchers interviewed. But they were unanimous in their advice to doctoral students to adopt a quantitative approach for their doctoral thesis to ensure they complete their graduation on time. They mentioned that their fellow researchers adopted other approaches like design sciences, system dynamics, surveys and algorithms.

There are a few clusters of research areas which are favoured by the faculty who were interviewed. We verified this with the research interests available on the websites of other Indian IS researchers and found it to be similar. The following is a list of the current topics of interest among IS researchers:

- *Information Systems Development*: Agile methodologies, cloud computing, open source software
- *IT Management*: IT governance, IT strategy, sustainability of IT projects, IT outsourcing
- *ICT for Development*: e-governance, e-health services, IT for education, citizen participation
- *Global distributed work*: Global software teams, open collaboration, motivations for social computing
- *IT and Society*: Data privacy and ethics, IT for the unreachable, ICT intervention and impact on people’s livelihood, mobile based interventions
- *IT artefact*: Course management software, education technologies, Enterprise Information Systems (ERP/EIS), Business Process Management (BPM)

The research interests appear to be more towards organizational issues and behavioural aspects of IT usage rather than the design and performance of the IT artefact under consideration. The individual level aspects like usability, perceptions and attitudes and IS professionals do not seem to be the focus of IS researchers. This research setting at a business or e-government level is very different from that of neighbouring China’s IS community which includes the individual level and focusses on design and system related research issues (Zhang et. al. 2006). The North American influence on the Indian IS researchers due to their doctoral education and training may explain this research leaning towards organizational and group settings. Being part of an emerging economy, a majority of the IS researchers have an interest in the development paradigm and e-government topics.

Some IS faculty expressed the view that irrespective of the discipline, research in India lacks a research ecosystem that fosters collaboration among researchers within and across disciplines. However, this opinion has not affected their collaboration with researchers from other disciplines and with other IS researchers within and outside their institution and even outside India. Some of the collaborations were also at the inter-institutional level in the form of government-sponsored research and linkages with foreign universities. Collaborations for academic research with non-IS researchers ranged across disciplines of Sociology, Developmental Economics, Public Policy, Finance, Strategy and Organization Behavior. Most of the collaborations outside India were with researchers from Europe and US.

The non-IS interviewees had minimal collaboration with IS researchers. A few of them mentioned that their only exposure to the IS research is by being part of the dissertation committee of IS PhD students. Some have expressed that though they are not against the idea of inter-disciplinary collaboration their research interests were more inclined to their parent disciplines.

Many of the IS researchers mentioned that they worked with Indian industry on research projects based on their personal networks. There are no industry funded research projects in which the IS faculty in India are currently involved. This is similar to Hong Kong, where research funding from industry is rare (CAIS 2007). One of the interviewees mentioned that it was difficult to work with industry partners as the industry partners usually are unwilling to share and publish the research results. But a few other interviewees mentioned that the problem was from both sides “*IS faculty have not educated the industry on the benefits of research collaboration. They have not spent time to understand the problems faced by the industry.*” While this lack of interactions with the Indian IT industry may explain the absence of focus on design and system level issues within the IS community in

India, a huge opportunity for interesting and unique research projects within growing Indian industry remains unexplored.

Interviewees were actively engaged in research with the government organizations at the state level in the e-government space. All of them were of the opinion that the demographic, social and economic scenarios in India give uniqueness to the e-government issues in India. *"...People will find workarounds to sabotage technology .....the Indian context is about informal economies, no documentation is maintained..."* While there are many research problems at the Indian industry and government level, there are no formal mechanisms for research collaboration. *"...ecosystem is missing in Indian institutes to work on these problems; hence you work as an individual researcher..."* The Indian academic institutions are focussed on producing good students and hence are more oriented towards teaching than research; this may be another reason for the low level of research collaborations. Sato et. al. (2009) identify this as an issue even in the Japanese academic community which has a similar focus on teaching. While there has been a shift towards research and publications in the last few years, with economic incentives for publications in top-tier journals etc., tenure and promotion decisions are still not linked to publications in a majority of the business schools.

All the IS researchers interviewed followed a couple of the top international journals like MISQ, ISR and AIS journals regularly and a few others based on need. Some of the other journals which were mentioned were Electronic Journal of Information Systems in Developing Countries (EJISDC), Communications of the ACM (CACM), Information Technology and People (ITP) and Information Technology for Development (ITD).

Few of the Indian IS researchers raised concerns about submitting their work to the top IS journals (MISQ and EJIS were named). They mentioned multiple cases where journals have rejected their papers as *"...the Indian data and issues are not of interest to their journal audience"*. This has made them vary of submitting to these journals. Many have expressed that management journals like Management Science, are more receptive to papers from Indian researchers. Yet, it is noticed that there is not much representation of Indian IS researchers even in these favouring journals. Unlike the Chinese IS community which publishes in China based management journals in the absence of a Chinese IS journal (CAIS 2007), none of the IS interviewees mentioned any Indian journals which they regularly follow or publish in.

### **IS Curriculum**

The lack of clarity about IS affected the decisions of the institutes about whether the IS courses are to be offered and whether they should be core or elective courses. While the IS courses receive moderate registrations, some of the interviewees mentioned that the knowledge of IS gained in the core course attracts the students to sign up for other IS electives in the subsequent terms. But in the business schools where it is offered as a core course, the course title and content varied widely. Some of the interviewees mentioned that IS oriented courses are also being taught by faculty from other disciplines depending upon the popularity. *"... faculty from non-IS departments floated courses on e-commerce, when it was the buzz word during the dot.com boom. However, IS was not interested in offering these buzz-word driven courses..."* Student preferences were also seen as crucial in determining the continuity of and enrolment in IS courses. Most of the IS interviewees had strong opinions on what IS courses should be taught in Indian business schools. It was opined that one of the reasons IS registration declined in US was due to outsourcing. As India is on the other side of this outsourcing phenomenon, IS can be studied as an inter-organizational transnational entity. *"..In India, the business school curriculum has been drawn from the top 10 US B-schools, and the same stand is taken on IS courses as in the US b-schools, which is a mistake..."* One of the senior IS researchers opined that *'...we lost an opportunity to make the curriculum relevant and useful to the Indian students.'* This view was reinforced by another interviewee who elucidated the need for incorporating the developing country context into the Indian IS curriculum. It was stressed that business schools have a mandate to educate managers on the latest trends and capabilities of IS. Hence IS should team up with other disciplines and offer courses like social media, cloud computing and Green IT, which help understand the reach and impacts of IT on business and society. The other opinion was that as technology has changed and become embedded in the lives of individuals it is changing many aspects of how business is conducted like e-commerce, online group buying, online reputation management, and social networks in business. There is an opportunity for IS faculty to inform their colleagues in other disciplines and work on updating the courses.

One of the interviewees mentioned that corporates do not recruit for IS jobs from business schools. *"..Who recruits IS folks? IT companies recruit them for consulting and management positions, but non-IT companies do not look at recruiting IS folks..."* While it appears that the Indian industry does not look at business schools to fill their IS Management roles, it is also quite evident that the business schools and IS departments do not have a goal of creating CIOs and techno-strategists, unlike the focus in Singapore (CAIS 2007).

Very diverse opinions were obtained from the non-IS interviewees about the IS curriculum based on their knowledge of IS. Some of them felt that at the graduate level MIS can be 'self-learnt' and not all students may be interested in taking up IS courses. While some of the non-IS faculty viewed spread sheet usage and

programming as IS courses, others were of the opinion that courses like economics of IT should be taught. Keeping in mind the societal impacts of computing and the uniqueness of India being an outsourcing hub, some opined that IS core courses should have content like information age, technology and society, open source movement, application for managers like big data, social media, cloud, energy efficient computing , and IT change management.

One of the faculty had an interesting suggestion to conduct IS workshops focussed on managerial applications and issues of importance. Such focussed workshops can be on various themes like use of IT tools for business decision making, IT innovation for economic and business growth, intellectual property rights, motivations for IS innovation for companies. “.. *how does one incentivize IS innovation in Indian industry?*” All interviewees were of the opinion that currently business schools do not have any role in IS innovation in India.

## ANALYSIS AND DISCUSSION

The issue of legitimacy of IS discipline has been widely studied and is not an India-specific issue. The current study, we believe, is the first of its kind focussing on exploring the state of IS academic discipline in India. The IS discipline in India has the same issues as the rest of the global IS community with respect to the IS identity. Some of the reasons, as understood from the interviews, appear to be due to mimicking the North American business school practices, while others are unique to India like the excessive focus on IT due to the successful IT industry, lack of awareness and exposure to IS due to the slow penetration of IT in the domestic market. Based on the current study we summarize the characteristics of the Indian IS academic community in Table 1.

Table 1: Characteristics of Indian IS Academic Community

Dimension	Characteristics
Identity and Legitimacy	<ul style="list-style-type: none"> <li>• Lacks a ‘collective identity’ of the community</li> <li>• Enjoys a certain degree of ‘cognitive legitimacy’ with the outsiders</li> <li>• Research agenda and curriculum not under any political pressure</li> </ul>
Research Focus	<ul style="list-style-type: none"> <li>• Focus slowly shifting from teaching to research and publications</li> <li>• Inclined towards interpretive studies and qualitative case studies</li> <li>• Predominant research setting of e-government and organizations</li> <li>• Minimal focus on design science and individual level issues</li> <li>• Diverse research topics and interests</li> </ul>
Interface with Society	<ul style="list-style-type: none"> <li>• Lack of interaction with IT industry and the domestic market</li> <li>• No visible contribution towards building the required IS skills and capabilities</li> </ul>

Though the identity of IS discipline is yet to be strengthened in India, there is a certain degree of ‘cognitive legitimacy’ for the IS discipline in India as non-IS researchers acknowledge the unique contribution IS discipline can bring to Indian business school curriculum and multidisciplinary research problems in India. The extant literature about the academic legitimacy of IS has reported that lack of legitimacy leads to issues pertaining to tenure, incentives and research funding. In the Indian scenario, the issues that arise due to lack of legitimacy are very different, since the notion of ‘tenure’ is almost non-existent in India and a nominal period of probation acts as a token-equivalent. In general, the academic career in India is not totally based on the publications since the prime focus of many business schools has been to produce high quality managers. The main issues that legitimacy of IS discipline in India leads to are attracting doctoral students to enrol in IS, fostering industry-academic ties for research and elucidating the importance of IS to students and industry, which are important for the continuity and growth of the Indian IS research community.

The IS research community in India (in the top business schools) while displaying a diversity in research methodologies, methods and epistemologies, is inclined towards interpretive studies using qualitative case study approach. Though quantitative methods are being employed we did not find any IS faculty mention usage of India specific databases for conducting research. Certain research paradigms do not find a supportive ecosystem in the Indian context. For example, IS researchers with a radical structuralism paradigm do not find forums that represent the employees in the corporate sector. This may explain the scarcity of critical studies related to employees in the IT, BPO and other IT enabled services.

The IS researchers are very optimistic about the areas and problems available for investigation. The predominant areas of research focus appear to be e-government and IT related opportunities and issues at the organization level. The current study identified that there are areas where research potential exists but not addressed currently, like the Indian IT industry related questions, IT and its use by individuals, usage of IT in small, medium and cottage industries and so on. There exist opportunities to develop cognitive IS research (Davern et. al. 2012) especially in the areas of human computer interaction given the Indian user base context. Interesting research opportunities are also present in the design of IT systems to address accessibility issues that arise due to constraints like illiteracy, multiple local languages, access to ICT, lack of connectivity, power shortage and



remote locations. Another critical area which presents an opportunity for IS researchers in India is to influence public policy in areas where e-government initiatives are being taken up.

Strong research collaborations exist in the Indian IS research community. But these are at an individual level and developed mostly based on personal networks. The lack of a forum or platform in the form of an Indian IS professional society, India based IS conferences or journals make it difficult to find IS researchers with similar interests in India. Countries like China, Japan and Hong Kong where the IS community has set up their own professional bodies and forums for interactions have been able to establish international collaboration within the IS academic and practitioner communities (CAIS 2007; Sato et. al. 2009; Zhang et. al. 2006). In addition to building a research ecosystem within individual schools, there is a need for institutional support at various levels of collaboration like industry-academic, government-academic and so on, on the lines of the National Science Foundation and Australian Research Council in USA and Australia. These institutions provide opportunities for collaboration and joint funding by the government and industry and help improve the relevance and participation of various stakeholders through research project governance (Rosemann and Vessey 2008).

Given the dynamic nature of IT, the role and identity of IS field has evolved rapidly in the last two decades (Hirschheim and Klein 2012). Even as researchers in the IS area, we sometimes found it difficult to provide a simple answer to the question, "What is IS?" while interviewing the non-IS faculty members. Given the ubiquitousness of IS and the embedded nature of IT in academic circles, the onus lies with the IS community to create awareness on the identity and role of IS. The IS community needs to create opportunities for researchers from other disciplines, industry practitioners and prospective students to interact with the IS community to understand the diversity and opportunities in the IS discipline. This is in line with the recommendations related to branding IS (Watson et. al. 2000) and the interventions required for increasing IS awareness and enrolments (Choudhury et. al. 2010).

In line with the recommendation by Watson et.al (2000) to strive for more consistency in IS courses across universities, we compared the course curriculum and outlines gathered from IS faculty and IS course outlines published online by the business schools for their various programs. We found that IS course offerings at the top ranked business schools in India are not uniform and have wide variation in both number and range of offerings. We also found that while the IS research findings are reflected in the course offerings, improvements can be made to increase relevance to the Indian domestic industry. The expectations and issues faced by the Indian domestic IT market are different compared to other regions (NASSCOM 2011). A study of the entry level job advertisements in India may provide inputs to design a relevant IS curriculum (Kennan et. al. 2009).

On the whole, Indian IS researchers need to take concrete steps to establish a strong voice as a community both within and outside their institutions and contemplate on ways to make IS part of the mainstream business research in India. Based on initiatives taken up in other countries (CAIS 2007) and our analysis we provide some high level recommendations for the Indian IS community in Table 2.

Table 2: Recommendations for the Indian IS research Community

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|---|
| <ul style="list-style-type: none"><li>• <b>Create a platform or forum for interaction:</b> India based IS conferences, India based professional society, Build an IS directory. This will help create a collective identity and encourage collaboration and knowledge sharing on publications and research.</li><li>• <b>Explore India based IS journals:</b> This provides a channel for research publications from Indian IS researchers and establishes channel to their Indian stakeholders to access content relevant to the Indian context. This addresses the lack of acceptance of India based research publication by other international journals.</li><li>• <b>Focus on IS research capacity building:</b> Create mechanisms for mentoring and guiding doctoral students and junior IS researchers by senior researchers. This will help address the collective identity, improve research capability and publication output.</li><li>• <b>Identify an India based research agenda:</b> Identify research areas relevant to the Indian stakeholders and build a cumulative body of knowledge. This will address the IS identity and relevance of research.</li><li>• <b>Create an IS curriculum for the Indian context:</b> Create an IS curriculum relevant to the Indian context. This will address the ambiguity of IS identity with students and the departmental level challenges faced by individual business school faculty.</li><li>• <b>Create platforms for funding and collaborative research with industry and government:</b> Create institutions which can govern and fund the IS research. This will address the relevance of IS research, provide a platform for collaboration and access to relevant research problems.</li></ul> |
|---|

#### Benefits for the larger IS research community

A strong Indian IS research community benefits the larger IS community. The India based forums and platforms, when created, will provide a means for IS researchers world over to identify opportunities and researchers to collaborate with and study phenomena in unique socio-economic contexts of India. Knowledge of

the Indian IS research trends available through the India based IS conferences and publications with help identify future research opportunities and contribute to the cumulative tradition.

## CONCLUSION AND FUTURE WORK

The issues related to IS discipline in India mirror those highlighted by IS researchers in other regions. But with the growing Indian IT market and rapidly maturing IT awareness among the users, there are opportunities to redefine the IS discipline and its identity. We find that the Indian IS researchers are positive about the future of IS research in India, but continue to battle for visibility when it comes to IS curriculum. There is a general consensus on the need to establish a collective identity of IS research in India. The paper has presented a view of the IS research in India based on the interviews conducted of business school faculty across IS and non-IS disciplines. Based on this picture, high level recommendations have been provided for the Indian IS research community and benefits for the larger IS community have been highlighted. We perceive the future 'Indian School' of IS research as focussing on e-government from development perspectives, IT outsourcing from the outsourcing provider viewpoint, IT workforce representation, improving access to technology, cost reduction using technology and inclusive business models.

We recognize the limitations of our study as it covers only a few IS researchers from the top business schools in the country and their perceptions. However, we believe the insights from this study are sound as the perceptions of the IS faculty are counter-balanced with inputs from non-IS researchers. We feel there is enough evidence to suggest the need for IS researchers to come together and debate on the future roadmap for IS research in India. This will help build a strong research ecosystem, means to collaborate with government and industry partners and deliver research outputs relevant to the Indian context. Further work on the IS research in India can be conducted to expand the current study to other top business schools and the second tier schools using the methodological learnings discussed by Gable and Smyth (CAIS 2007). The IS research paradigm can also be studied by analysing the research outputs and publications of the Indian IS researchers. Another dimension to the IS research in India can be to study the involvement of private IS research institutions and research groups within industry.

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