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Table of Contents

Teaching and Research

Focus on people

Esta revista é (e sempre foi) eletrônica para ajudar a proteger o meio ambiente, mas, caso deseje imprimir esse artigo, saiba que ele foi editorado com uma fonte mais ecológica, a *Eco Sans*, que gasta menos tinta.

This journal is (and has always been) electronic in order to be more environmentally friendly. Now, it is desktop edited in a single column to be easier to read on the screen. However, if you wish to print this paper, be aware that it uses Eco Sans, a printing font

CULTIVATING UNIVERSALISTIC AND SITUATED PERSPECTIVES IN THE AGE OF UBIQUITOUS COMPUTING: IMPLICATIONS FOR GLOBAL INFORMATION SYSTEMS RESEARCH

(paper submitted in February 2018)

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ABSTRACT

This paper analyzes the tension between universalistic and situated perspectives particularly in terms of the forces driving each perspective as well as other forces constraining them. This concept is discussed in general, and then applied to a set of specific topics across the range of global IS concerns. The paper then examines the tension between these perspectives in investigating emerging topics in global information systems research and concludes providing some guidance in extending research in this area.

Key-words: Global IS research; universalistic; situated research; ubiquitous computing.

1 INTRODUCTION

Any research in information systems (IS), even if not explicitly acknowledged, involves specific assumptions about the context in which its technology artefact is immersed and to which it is intended to contribute. That is the focal point of this article. The aim is to help researchers understand the need to reflect and advance our perspectives of the "context around us and our technologies."

We live in a global world where information technology (IT) is changing the way in which businesses create and capture value, how and where we work, and how we interact, communicate, and bridge social differences. Furthermore, IT is not just helping people to do things better and faster, but they are enabling new ways of control, socialization, coordination, and collaboration in the workplace throughout societies. Although the same technological artefacts are feverishly spreading around the world, their implementation, use, and impact are not homogenous.

We must also appreciate that these technologies are evolving (CASCIO & MONTEALEGRE, 2016). The initial stage of the digital era, enterprise computing, was based on mainframe computers. The focus was on improving the efficiency of the physical world by analyzing its characteristics and modifying the physical space if needed. Many users shared a single mainframe computer, and it was unfeasible at that time to supply expensive computing equipment to the multitude of potential users. The second stage of the digital era, end-user computing, was based on personal computers. The focus in this stage was on supporting productivity improvements of individuals, particularly business professionals. The notion of "one computer per person inside a company" became possible. The third stage, strategic computing, was based on communication technology. The Internet became a "global network of networks" as heterogeneous computers and communication interfaces were connected with each other, thereby linking local area networks into a single, large communication network (HAUBEN & HAUBEN, 1995). Companies combined the Internet and enterprise applications systems (such as enterprise resource planning, customer relationship management, supply chain management, material requirement planning, human resource management, and enterprise form automation systems) to support business processes and inter-organizational activities.

Today, IT is heading toward a new stage based on ubiquitous computing[1] where computational technology permeates almost everything, enabling new ways of linking people, computers, and objects. The ever-declining prices of computing devices have resulted in not only the abundant supply of personal computers, but also embedded (enabled by microminiaturization)

[1] The term "ubiquitous computing" was coined by Mark Weiser of the Xerox Palo Alto Research center in 1998. In Latin, "ubiquitas" means *being everywhere*. See also the Special Section on Ubiquitous Computing in *Communications of the ACM* (LYYTINE & YOO, 2002).

and networked (empowered by increased speed and bandwidth of communication networks) industrial sensors and processors, speech-recognition and eye-tracking devices, mobile devices, radio-frequency-identification and near-frequency-communication tags and labels, global-positioning-systems-enabled devices, smart televisions, car navigation systems, drones, wearable sensors, robots, 3D virtual reality, and so forth. The ubiquitous computing infrastructure allows collecting enormous amounts of structured and unstructured data. Ubiquitous computing blurs the boundaries between industries, nations, companies, providers, partners, competitors, employees, freelancers, outsourcers, volunteers, and customers. This new stage links the physical world directly with the electronic space,[2] thereby creating a ubiquitous space enabling complexity, speed, and quality not possible before.

Given that ubiquitous computing is opening a new stage, we argue that more than ever before, we need to draw lessons and knowledge from all available sources –universal and local, new and old—as the demand has changed from distinct technology artefacts to integrated technical and social solutions customized for specific contexts. In addressing issues of the context, two distinguishable orientations have been present in IS research: universalistic and situated research traditions. While both of these traditions recognize that the context of IS innovations is a source of influences on the shaping of technologies and their consequences, they have important epistemological differences that have given rise to different discourses in IS research[3].

The universalistic perspective focuses on the information, IT, and processes of IS innovation through which such value can be realized in terms of general technology, social, and economic reasoning, independently from the particular circumstances of the actors involved. Researchers in this tradition highlight the relevance of general IS knowledge and practice models and tend to look for “best practices,” “appropriate” context, or “suitable” organizational forms (FULK & DeSANCTIS, 1999; SCOTT MORTON, 1991). They often acknowledge contextual contingencies but assume an overriding rationality that determines universal goals of IS innovation, and a single logic of action toward their satisfaction (PORTER & MILLER, 1984). Such researchers enrich the transferability of generic know-how and professional practices by working out modifications to accommodate various local circumstances and assume that such localization is enough. They retain, however, the general assumptions on the validity of purpose of the IT innovation, for example efficiency and competitiveness, as well as

[2] It may, in fact, be argued that the physical and electronic space are becoming more than linked but actually integrated so that the distinction between them is disappearing and we are evolving toward a single physical/electronic space.

[3] The term “discourse” is used here to refer to research approaches (including the research language of concepts, theories, and methods) stemming from different assumptions on about the nature context where the IT artefact is embedded.

the validity of the underlying rationality of the transferred method regardless of context.

The situated perspective, in contrast, considers IT innovation as enacted by social actors and emphasizes the construction of meaning and practices within the immediate setting of the technology artefact (ORLIKOWSKI *et al.*, 1996, SUCHMAN, 1994). That is, technology is viewed as fundamentally social, grounded in specific historical and cultural contexts, and dependent on specific meanings and contingent processes. The focus is on the dynamic interactions between people (or organizations) and technology over time. Researchers that adopt this perspective have been criticized for minimizing the role of technology, in particular, the physical characteristics and capabilities entailed in particular technological objects (FAULKNER & RUNDE, 2009) especially in terms of how they constrain or enable particular usage. They tend to downplay specific technological properties, focusing primarily on human interpretations and social actions. More generally, by focusing on the specifics of situated micro-interactions, they are unable to offer widely applicable insights into the ways in which technologies broadly shape organizations and societies.

We believe that despite the theoretical contributions of each of these perspectives, IS research remains weak in forming convincing arguments on the role played by and the nature of the context within which a technology is immersed. We claim here that these perspectives should not be "either-or" but "both-and," as they are conceptually distinct but closely related. We see a "partnership" between universalistic characteristics that transcend situated application with the contextual specifics the interaction of which leads to experienced outcomes. Further, we see potential for linking specific universalistic and situated perspectives into aligned and holistic understandings. For example, "grand theories" about diffusion of technology may provide universal but limited guidance, however, specifics supplemented with knowledge about particular technologies and particular cultures may surface additional patterns enriching and supporting the broader universalistic theory.

2 UNIVERSALISTIC AND SITUATED PERSPECTIVES: DRIVING AND RESISTING FORCES

One approach to better understand the interplay of these perspectives on IS usage is to consider global business and technological forces tending to propel or constrain them. In this section we exemplify a number of forces that may drive or constrain a tendency toward universalistic and situated perspectives.

2.1 FORCES DRIVING THE UNIVERSALISTIC PERSPECTIVE

2.1.1 Emerging standards for the business environment

Numerous business practices in recent decades have become *de facto* standards in global business. We see two examples of this in the increasing

use of English as a business standard, particularly for multinational organizations and those involved in multinational activities. Given that languages have a bounded, though permeable, vocabulary, use of a particular language tends to structure the format in which human and computer interactions are conducted. Moving toward technology, a significant amount of computer technology has been developed using common, often English based, coding. For example, computer languages from COBOL through Java and APIs use English vocabulary for capturing operational commands. The pervasiveness of technologies that are largely designed and built from single perspectives drive a movement toward universalistic tendencies in how they are applied without regard to their particular location.

2.1.2 Migration of work and workers

At least two related forces are pushing toward a universalistic inventory of specialists working with information technology. On the one hand, work through offshore outsourcing across the range of applications and positions in “the stack” of computer technologies is being done without reliance on a particular location. Global firms like IBM or Infosys may assign any tasks they need accomplished to workers with appropriate skills wherever they may be. End-user firms like General Electric or Nestle may outsource particular jobs to an increasingly wide range of locations where capabilities exist for performing those tasks. Rapid advances and increased reliance on technology are creating opportunities for people around the world to interact and collaborate in ways that change the way work is done. Consider, for example, expatriation practices that many organizations are providing, which is when an individual lives and works outside his or her country of citizenship (CARPENTER *et al.*, 2001; INKSON *et al.*, 1997; REUBER & FISCHER, 1997; SAMBHARYA, 1996; TAKEUCHI *et al.*, 2005). Expatriation is a particular type of practice in which the individual applies universal knowledge, but at the same time is expose to factors in a specific context (and different from his/her original setting). These assignments are considered valuable for many reason including knowledge sharing (MAKELA, 2007; MANEV & STEVENSON, 2001) and it is believed that they can create a competitive advantage for a firm (CARPENTER *et al.* 2000, 2001), but there may be other benefits that have not been explored. Expatriate assignments, however, have been found to be costly (Krell 2005; McNULTY & THARENOU, 2004; WELCH, 2003) and the cost of failure are notably high (FORSTER, 1997; JOHNSON *et al.*, 2006). Yet, many of these assignments often fail (JOHNSON *et al.*, 2006; TUNG, 1982) and some report that failure rates are as high as 83% (McFARLAND, 2006). So, determining more effective methods of integrating universalistic and situated knowledge and lowering the chance of failure is critical.

Both of these forces push IT toward universalistic tendencies. As a result of these, research into the development and deployment of IS around the world may focus on single sets of precursors or outcomes to explain universally applicable influences and relationships. We see this

approach with a preponderance of published IS research, however, we expect that this is less due to the existence of these forces but rather the assumption that patterns, rules, and theories almost by definition must be applied universally. Below we discuss forces of resistance to universalistic tendencies and the importance of situated local influence.

2.2 FORCES DRIVING THE SITUATED PERSPECTIVE

2.2.1 Differentiated tastes, preferences, and precedents

Much research on the effects of website content on commercial and non-commercial users shows differentiation in preferences generally attributed to differences in demographics or culture. Some content is clearly viewed as inappropriate by large groups in some locations while not considered inappropriate in others. Issues of dress, language, humor, and other cultural manifestations will produce different reactions whether they are consistent with or contrasting to local norms. Pictures of religious symbols will evoke sympathetic or hostile reactions if shown among the same religion's followers or members of a different group. In more narrowly local cultures people perform similar tasks in different ways and are more likely to respond positively to those consistent with rather than challenging of their particular methods, even if these are in some sense arbitrary.

2.2.2 The quest for flexibility

Flexibility is a quest in many industries and organizations (TALLON *et al.*, 2016). A number of IS researchers have been seeking to define the processes by which flexibility enabled by IS technical choices can generate organizational flexibility with the result of firms being able to more quickly respond to changes in customer needs and preferences. Achieving such flexibility can be attained by the shifting of resources among different departments in a firm (TALLON *et al.*, 2016) and by customizing generic tools to match the needs of particular customers and unique business processes.

Both forces push information technology toward situated studies focusing on the particularities within a context. As a result, research into the development and deployment of IS around the world may focus on relationships and influences that occur in unique or smaller numbers of instances. There are examples of such study in IS research, particularly where a universalistic study is examined in a particular application in global IS research, we see this with technology adoption model (TAM) studies replicated or extended in alternative locations. Elbeltagi *et al.* (2005), for example, found positive relationships between perceived ease of use but negative ones between perceived usefulness and intent to use. Chan & Lu (2004) relative to internet banking found indirect effects of perceived ease of use through perceived usefulness, but no direct effect on intention to adopt or use this ecommerce technology. Standard results would lend weight to a universalistic interpretation of such studies, but

variation by location would indicate either the predominance of situated experience or a co-existence of some subset of universal tendencies that are augmented or reshaped by local conditions. This leads us to consider forces toward a hybrid understanding of how universalistic and situated forces work in conjunction with one another.

2.3 FORCES DRIVING THE INTEGRATION OF UNIVERSALISTIC AND SITUATED PERSPECTIVES

2.3.1 Federated governance

In numerous arenas of IS we see a growing number of arrangements that can be termed “federated”. Such governance systems differentiate domains for universalistic standardization through centralized application of standards and processes, central processing and procurement, for example, but also enable situated local prioritization of projects based on more immediate needs and resource availability.

2.3.2 Increasing access through mobile computing.

The explosion of mobile and intelligent phone capabilities allows an increasing access to common universalistic collections of data and content while enabling increased unique and local application. The ability, for example, of individuals to program geographic applications atop tools like Google maps allows for bridging universalistic and situated perspectives. On one hand the underlying platform provides access to immense but not unconstrained resources, on the other hand tools can be configured and reconfigured in countless ways for local application. Crowdsourcing and crowdfunding provide another example of universalistic tendencies – in providing common sets of rules and governance of contribution processes – and situated tendencies in terms of the rich variance among projects and initiatives.

Such integrative forces are likely to continue to grow in numbers and importance. We appreciate the opportunity to both study the effects of each force – those toward the universal or situated and how they influence emerging phenomena. But we also see a strong role for direct observation and examination of the processes and tensions in integration of these forces as they play out in new computing domains. Below we discuss some of the on-going global IS research topics and how we view extant universalistic and situated tendencies already in play or emerging.

3 UNIVERSALISTIC AND SITUATED PERSPECTIVES: EXTANT GLOBAL IS TOPICS

The Journal of Global Information Management (JGIM) has been publishing research articles for more than 20 years regarding aspects of information systems that address global, multi-cultural and international issues. A study published in JGIM in 2012 addressed what has been

learned from the research studies published in that journal's 20 years of publication (to that point) (NIEDERMAN *et al.*, 2012) (see Table 1).

	Topic (alphabetical order)	Universalist	Situated
1	Adoption and diffusion	Rogers' constructs Processes for individual/organizational adoption	Variation of construct influence by people/types, tasks, technology affordances, learning opportunities Adoption of technology created with "alien" cultural assumptions
2	Culture	General issues when multiple cultural perspectives interact	Specifics of individual cultural preferences
3	E-commerce	General human marketing tendencies – trust, exploration, impatience	Translation of particular market tendencies into technical affordances to fulfill these
4	E-government	Principles for providing public services	Differentiation by local participation preferences and constraints
5	IT in developing countries	Principles for applying IT for development across location	Cases and examples of particular trajectories
6	IT in multinational firms	Principles relative to complexity, governance, and integration across boundaries	Issues from particular kinds of locations Software development *versus* software use
7	Knowledge management	Principles related to the nature of knowledge and its handling	Transfer of knowledge between different sorts of locations
8	Managerial behavior/attitudes and workforce	Principles of hiring, retention, motivation	Differences in workforce opportunities and preferences based on differences in culture or market forces
9	National infrastructure	Key elements for any infrastructure	Differences in individual infrastructures, how they enable and constrain, and how they change over time
10	Offshoring	Principles of establishing and guiding these types of relationships; developing productivity	Competition among offshoring vendors in different sites; differentiation in product offerings and growth patterns
11	Virtual teams	Principles guiding project management and tool use regardless of location	Details of matching tools and tasks under many different combinations of constraint

Table 1. Universality and situated perspectives present in the main research topics published in the *Journal of Global Information* Management's 20 years of existence
(adapted from Niederman *et al.*, 2012)

Much of the discussion regarding **adoption and diffusion** of technologies has been framed in universalistic terms and the search for universal constructs that influence acceptance at individual firms and the rate of spread of technology. Some studies focus on the diffusion of a technology within a firm, which is particularly relevant to multi-national firms where a frequent implementation tactic is to pilot a new technology in one or a few locations then roll it out to the rest of the organization. This approach allows for technical issues to be resolved, training methods to be developed, and documentation to be refined in relatively small scale where mistakes are relatively low cost. An initial universalistic approach would recommend general states of constructs that suggest higher or lower likelihood of positive outcomes. A more sophisticated approach would suggest particular processes that can be applied across sites to institute the implementation. A synthesis of the two approaches is likely to reveal factors that are generally influential across settings, but where the specifics of technology or cultures favor some factors over others in particular situations. Moreover, the universalistic view may need to be supplemented with additional factors only influential in particular circumstances (e.g. incentive structures may be critical in highly competitive societies but recede to less than significant influence elsewhere).

The study of **culture**, in general, has often focused on the interplay of universalistic and situated perspectives. Universal issues in culture pertain the identification of elemental units form or define culture (e.g., HOFSTEDE, 1991). From another perspective, though, such identification of key dimensions blends the universalistic dimensions with the situating of each national culture reflecting its own unique score across the set of dimensions. Individual firms and even individual people can further be situated by reflecting on the demographics, norms, and values that mark their particular cultural tendencies. IS researchers tend to examine whether these cultural dimensions can be used to better understand and predict outcomes in local instances. For example, Kock *et al.* (2009) provided evidence that power distance better predicted difficulties with information overload than did more traditional precursor variables. Conversely, researchers may investigate what, if any, effects there are from the implied or explicit culture represented by the software tools or approaches on the local culture of one or more implementation sites. Mason (2003) and Kersten *et al.* (2002) each looked at the relationship between knowledge management systems and culture finding that they can suppress cultural diversity in one instance, while embedding cultural sensitivity in another. In these studies, culture is locally represented by specific attributes of the organization or team rather than globally applicable dimensions. Without consideration of the varied ways that culture and technology interact, there is a danger that factors important, but contingent on circumstance, may statistically cancel out important contributions across a heterogeneous sample.

The research domain pertaining to **e-commerce** and **e-government** suggests universalistic principles relative to how customers react to computer

mediated commercial opportunities and citizens to computer mediated government services. Universalistic tendencies are manifest in common platforms and principles. For example, it is likely that influences on and results of “trust” operate at some level systematically across settings. It is clear, however, that particular systems and processes will enhance trust in some settings and erode it in others. In a simple way templates or documentation written for universal instruction in particular technologies may need to be translated to local language for widespread use. Conversely knowledge of how constituents in particular settings are likely to view such applications may provide guidance in applying universalistic lessons in designing particular instances.

IT in developing countries presents an interesting opportunity to take two different paths. One is to test the applicability of universalistic findings from so-called developed countries as they may be applied in developing realms. Such testing promises a more nuanced set of theories perhaps indicating a set of constructs generally applicable with specification of which apply under what conditions. The second is to develop universalistic principles across developing countries that pertain to methods for economic development *per se*. We see such work exemplified by Ein-Dor *et al.* (2004) who contrast software development industries in New Zealand, Singapore, and Israel. We would expect that constraint of resources, which might characterize application of technology in developing countries can provide leadership in suggesting new approaches that provide benefits in developing countries as well where savings on technologies can be transformed into better customer service or increased profit. Lessons pertaining, for example, to first movers and establishing competitive advantage may compete with lessons for creating new industries such that second, third, and fourth movers may have different experiences in taking advantage of new technologies as they emerge. Countries seeking development may have to look for successful ways to enter mature markets with extant technologies as well as consider how their particular advantages may generate innovative first mover products.

IT in multinational firms is a good example of the difficulty in clearly differentiating universalistic and situated approaches. Universalistic research may seek principles or findings that pertain to all multinational firms. Some of this may target best practices in supporting global functional areas like human resource management or supply chain. In both cases, functional area issues focus on balancing common standards and practices (largely for efficiency) with customization to address local constraints and opportunities. In international business there is some recognition of different types of multinational based size, for example the number of countries where business is done, but also on types of cross border activity such as simply exporting, maintaining sales functions, and creating products and/or services across borders. We have found little research that provides such differentiation in how to use IT to support multinational firms.

Knowledge management pertains to organizational efforts to create, retain, distribute, and utilize knowledge in pursuit of its activities. As framed many years ago by Alavi & Leidner (2002), a universalistic view of such knowledge management can be viewed through an input-process-output lens. An additional layer of questions, however, pertains to processes by which knowledge developed in a particular location has embedded the context of that location and how that context needs to be recognized and accounted for in application in a new location. In agriculture knowledge in regard to farming in predominantly clay soil needs translation when being applied in another region of sandy soil (and many other differences in variable). Current data analytics and machine learning studies in agricultural science are aimed at using universalistic principles to gather and organize knowledge that pertains to local conditions and enriches nuanced views of overall principles. Universalistic rules for organizing data analytics programs within firms (or across firms in a community) may prove helpful even if trial and error are necessary for developing solutions to particular problems.

Managerial behavior/attitudes issues represent something of a catch basin for topics ranging from individual attitudes and behaviors (things like trust as applied to consumers of e-commerce or as applied to virtual teams operating across the globe). Most of these topics represent a mix of basic human psychological traits and their appearance and/or influence in particular settings like ecommerce, e-government, or MNCs. While universal tendencies toward particular human reactions may apply, it is also possible they trigger different reactions across settings. One might think that un-trustworthy behavior may always lower trust within a relationship, but in some settings such behavior might be considered normal and different actions might be considered naïve or provocative. Much of this discussion as it pertains to human behavior may use IS as a setting but really address deeper issues that extend beyond the relationship of people and technology, in a manner similar to the discussion of culture

National infrastructure is a particularly interesting topic to consider issues of universality and locality. Some obvious factors that will influence local infrastructure for computing include non-computer related infrastructure like roads, power grids, and marketing networks. However, some infra-structure issues may be relatively universally applied, for example, the design of data centers, planning for redundancy, and approaches to privacy and security. Techniques such as leapfrogging come to mind as a possible universal tactic for benefit over cost, but that result in potentially a wide diversity of information systems infrastructures in different locations at a point in time. As with many of these topics, lessons learned in building the infrastructure of one nation might be deserving of diffusion to other locations, if the tendency toward competition among rival nations does not overwhelm the benefits of all advancing in capacity and capability. On the other hand, how infrastructure designs are groups (which dimensions are used to sort them) may be critical to making comparisons among them and prescriptions for taking them to new levels.

Offshoring has been a fruitful area for organizations in practice over the past few decades and much has been learned about best practices with offshoring. Work by Lacity and Willcocks (1998), for example, highlights the importance of phasing in relationships from pilot tests through greater integration and collaboration. They also suggest developing management structures that enhance collaboration while decoupling dependencies. For example, they describe successful operations that used liaison managers to translate communication and help focus activities on both or multiple sides of the offshoring relationship. We expect that a variety of general principles will apply to many or most offshoring cases pertaining to contracts and governance, mechanics of work allocation, and human resource management practices. However, we doubt that many of these can be applied in one standard fashion across the globe.

Virtual teams also has a deep and rich literature in the broader IS community which is informed by studies of face to face group performance using computer mediated tools and a vast set of studies on groups and teams without regard to technology. It is likely that much of the literature about organizing, monitoring, and managing distributed groups holds sway whether or not such location is across the street or around the world. More often than not groups comprised of people around the world will be more diverse in culture, but consider a multinational firm like SAP with German nationals working around the world collaborating in contrast to a domestic firm in the U.S. with collaborators located nearby but representing a multitude of cultural backgrounds and nations of origin. We expect some issues regarding the integration of video-conference, project management, and repository software tools across countries will be more difficult, even within a single firm, then such integration within any given country across firms.

In addition to considering these topical areas, we'd like to suggest that there are emerging topics of concern to global IS and mention them briefly. **Crowdsourcing and crowdfunding** are largely enabled and constrained by computer mediated technology. We assume some general principles for how these can and should work may be observed, but that local conditions will provide both opportunities and challenges in practice. **Digital entrepreneurship** in the sense of supporting general entrepreneurial efforts as well as developing new IS products, services, and firms will also display a useful tension regarding the interplay of universalistic and situated viewpoints. **Multi-organizational alliances** increasingly represent conduits of business activity. We see this as a third rich area for examining the interaction of universalistic and situated concerns pushed by driving and constraining forces.

In summary, we find value in establishing universalistic principles that broadly apply across settings. But we equally find value in understanding the situated observations that indicate principles that apply in particular cases. With the particular, the potential exists to find common patterns that apply to subsets of the population (e.g. all English or French speaking

countries, but that do not translate across the two), thus forming a mid-range level of knowledge. At the same time, the temptation to think of systems as unique and falsely assume that patterns or generalizations while imperfect cannot be of value is also mistaken. In creating an e-government platform in a developing country, why not at least start with universalistic principles and reformulate them as needed rather than consider every application as a completely custom job (with the associated extra costs)? We think the direct examination and questioning of the interplay between universalistic and situated findings might also lead to some understanding of how and why they combine. A good model of this is provided in Leonardi's (2011) discussion of imbrication and the investigation of processes by which technology and business routines are intermingled, though adjusted for the intermingling of less flexible technologies with less flexible cultural norms. Observing changes in these processes as both technologies and cultural norms become more flexible by design and implementation (assuming they do) will also be an interesting avenue for future investigation.

4 CONCLUSION

As researchers continue to study the effects of IT, we offer some guidance in better understanding its context. First select your philosophical stance. Is the purpose of the research to study the dynamic interactions between people (or organizations) and technology over time? This is Orlikowski's (2009) *emergent-force* perspective. Or is the purpose to focus on how technology is intrinsic to everyday activities and relations (Orlikowski's *entanglement-in-practice* perspective)? In either case, it is helpful to study *in situ* to better understand the broad range of effects of the context that may affect individual, teams, organizations, communities, or societies. Once local findings are established, it is also worth considering generalizations in case they are applicable in whole or in part for others in situations which follow.

Another consideration is research methodologies. Although the dominant research methods in IS research involve the use of statistical testing for explaining and predicting, other methods are also needed to derive situated conceptual and theoretical fundamentals. Ethnography, for example, provides insights about who interacts with whom, and potentially about what, but not how they enact their relationships (BARLEY, 2015). To study the context where a technology is being used, researchers need to document repetitive patterns of typical encounters. A method that facilitates this is dramaturgical analysis (GOFFMAN, 1959, 1983). Relying on observations rather than interviews, dramaturgy highlights roles, scripts, interactions, and role relations, including those with whom users interact regardless of whether they also use the technology. Dramaturgy asks a simple question, namely, has the technology shaped role relations within the context in which it is immersed? The combination of role theory and dramaturgical analysis allows researchers to address holistically yet

systematically both social as well as material features of technology-based changes.

Mainstream IS research to date has been primarily oriented toward a universalistic perspective. Positivistic, variance-oriented IS research aiming generalizing theories and practices around the world is still much prevalent today in terms of frequency of publications. Less attention tends to be paid to situated differences. Publication of journal articles is influenced by editorial polices that aim to achieve high article citations, therefore, expect their articles to appeal to large numbers of their readers. In order to publish, authors have to stick to a simplified “consistent” vocabulary of accurately defined terms and theoretical associations so that an imaginary typical reader of the journal can follow the paper. In other words, IS research is expected to be accessible by readers who are not experts/ aware of local differences (AVGEROU, 2010). This surely is not the most helpful way that the peer-reviewed system can stretch authors’ potential and improve research outcomes. However, difficulties to publish well-founded situated research are examples of institutional obstacles.

REFERENCES

ALAVI, M., & LEIDNER, D. E. (2001). Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues. *Management Information Systems Quarterly*, 25(1), 107–137.

AVGEROU, C. (2010). Comments on Allen Lee's article 'Retrospect and prospect': information systems research in the last and next 25 years' from a socio-theoretical IS research perspective. *Journal of Information Technology*, 25(4), 355-357.

BARLEY, S. R. (2015). Why the Internet makes buying a car less loathsome: how technologies change role relations. *Academy of Management Discoveries,* 1, 31-60.

CARPENTER, M. A, SANDERS, W. G., & GREGERSEN H. B. (2000). International assignment experience at the top can make a bottom-line difference. *Human Resource Management*, 39(2/3), 277–85.

CARPENTER, M. A, SANDERS, W. G., & GREGERSEN H. B. (2001). Bundling human capital with organizational context: the impact of international assignment experience on multinational firm performance and CEO pay. *Academy of Management Journal,* 44(3), 493–511.

CASCIO, F. W., & MONTEALEGRE, R. (2016). How technology is changing work and organizations. *Annual Review of Organizational Psychology and Organizational Behavior,* 3(6), 349-375.

CHAN, S.-C., & LU, M.-T. (2004). Understanding internet banking adoption and use behavior: a Hong Kong perspective. *Journal of Global Information Management*, *12*(3), 21–43.

EIN-DOR, P., MYERS, M., & RAMAN, K. S. (2004). IT industry development and the knowledge economy: A four country study. *Journal of Global Information Management*, 12(4), 23–49.

ELBELTAGI, I., McBRIDE, N., & HARDAKER, G. (2005). Evaluating the factors affecting DSS usage by senior managers in local authorities in Egypt. *Journal of Global Information Management*, *13*(2), 42–65.

FAULKNER, P., & RUNDE J. (2009). On the identity of technological objects and user innovations in function, *Academy of Management Review*, 34(3), 442–62.

FORSTER, N. (1997). The persistent myth of high expatriate failure rates': a reappraisal. *International Journal of Human Resource Management,* 8(4), 414–33.

FULK, J., & DESANCTIS, G. (1999). Articulation of communication technology and organizational form." In: *Shaping Organization Form: Communication, Connection, and Community*, G. DeSanctis and J. Fulk (eds.), Sage, Thousand Oaks, California, pp. 5-32.

GOFFMAN, E. (1959). *The presentation of self in everyday life.* Garden City, NY: Doubleday.

GOFFMAN, E. (1983). The interaction order. *American Sociological Review,* 48, 1-17.

HAUBEN, M., & HAUBEN, R. (1995). The netizens and the world of the net: an anthology on the history and impact of the net. Available at: www.cc.columbia.edu/~hauben/project_book.html

HOFSTEDE, G. H. (1991). Cultures and organizations: software of the mind. London; New York: McGraw-Hill.

INKSON K., ARTHUR, M. B., PRINGLE, J., & BARRY, S. (1997) Expatriate assignment versus overseas experience: contrasting models of international human. *Journal of World Business,* 32(4), 351–68.

JOHNSON, J. P., LENARTOWICZ, T. & APUD, S. (2006). Cross-cultural competence in international business: toward a definition and a model. *Journal of International Business Studies,* 37(4), 525–43.

KERSTEN, G. E., KERSTEN, M. A., & RAKOWSKI, W. M. (2002). Software and culture: beyond the internationalization of the interface. *Journal of Global Information Management*, 10(4), 86-101.

LEONARDI, P. (2011). When flexible routines meet flexible technologies: affordance, constraint, and the imbrication of human and material agencies. *MIS Quarterly*, 35(1), 147-168.

LACITY, M.C. & WILLCOCKS, L.P (1998). An empirical investigation of information technology sourcing practices: Lessons from experience. *MIS Quarterly*; 22(3), 363-408.

LYYTINEN, K. & YOO, Y. (2002). Issues and Challenges in Ubiquitous Computing. *Communications of the ACM*, 45(2), 63-65.

MAKELA, K. (2007). Knowledge sharing through expatriate relationships. *International Studies of Management and Organization* 37(3), 108–25.

MANEV, I. M., & STEVENSON, W. B. (2001). Nationality, cultural distance, and expatriate status: effects on the managerial network in a multinational enterprise. *Journal of International Business Studies*, 32(2), 285–303.

MASON, R. M. (2003). Culture-free or culture-bound? A boundary spanning perspective on learning in knowledge management systems. *Journal of Global Information Management*, 11(4), 20–37.

McFARLAND, J. (2006). Culture shock. *Benefits Canada,* 30(1), 31.

McNULTY, Y. M., & THARENOU, P. (2004). Expatriate return on investment. *International Studies of Management and Organization,* 34(3), 68–95.

NIEDERMAN, F., ALHORR, H., PARK, Y. H., & TOLMIE, C. R. (2011). Global information management research: what we have learned in the past decade? *Journal of Global Information Management*, 20(1), 18-56.

ORLIKOWSKI, W. J. (2009). The sociomateriality of organizational life: considering technology in management research. *Cambridge Journal of Economics*, 9, 125–141.

ORLIKOWSKI, W. J., WALSHAM, G., JONES, M. R., & DEGROSS, J. I. (eds.). (1996). *Information Technology and Changes in Organizational Work*. Chapman & Hall, London.

PORTER, M., & MILLAR, V. (1984). How information gives you competitive advantage. *Harvard Business Review,* 63(4), 149-160.

REUBER, A. R., & FISCHER, E. (1997). The influence of the management team's international experience on the internationalization behaviors of SMEs. *Journal of International Business Studies*, 28(4): 807–25.

SAMBHARYA, R. B. (1996). Foreign experience of top management teams and international diversification strategies of U.S. multinational corporations. *Strategic Management Journal,* 17(9), 739–46.

SCOTT MORTON, M. S. (1991). *The corporation of the 1990s*: information technology and organizational transformation. Oxford University Press, New York, 1991.

SUCHMAN, L. (1994). Working relations of technology production and use. *Computer Supported Cooperative Work,* 2, 21-39.

TAKEUCHI, R., TESLUK, P. E., YUN, S., & LEPAK, D. P. (2005). An integrative view of international experience. *Academy of Management Journal,* 48(1), 85–100.

TALLON, P., QUEIROZ, M., COLTMAN, T. R., & SHARMA, R. (2016). Business process and information technology alignment: construct conceptualization, empirical illustration, and directions for future research. *Journal of the Association for Information Systems*, 17(9), Article 3. Available at: http://aisel.aisnet.org/jais/vol17/iss9/3.

TUNG, R. L. (1982). Selection and training procedures of U.S., European, and Japanese multinationals. *California Management Review,* 25(1), 57.

WELCH, D. E. (2003). Globalisation of staff movements: beyond cultural adjustment. *Management International Review,* 43(2), 149–69.