Qualitative Research in three IS journals: Unequal emphasis but common rigour, depth and richness

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ABSTRACT

In this paper we attempt to show the actual and potential contribution of qualitative research in information systems. We looked at two recent volumes (2011-12) of MISQ, EJIS and SIM and found that there were a low proportion of qualitative papers in MISQ, a balance of qualitative to quantitative papers in EJIS and a high proportion of qualitative papers in SIM. We illustrate the contributions of qualitative research in IS through discussing nine papers (three from each journal) in some detail and then the other qualitative papers in these issues (61 of 217 papers in total) in the discussion section. A variety of methods, theories and contributions to research and practice are discussed. The depth, rigour and detail of many qualitative research studies are impressive and make such work convincing to the reader. Some suggestions are made to increase the profile of qualitative research in information systems.

Keywords: qualitative research, research methods, case study, action research, critical research

RÉSUMÉ

Dans cet article nous tentons de démontrer le potentiel des approches qualitatives en systèmes d'information. A travers un examen des deux derniers volumes complets (2011-12) des revues MISQ, EJIS et SIM nous dressons d'abord le constat qu'il existe une faible proportion d'articles utilisant des approches qualitatives dans la revue MISQ, un relatif équilibre entre approches qualitatives et quantitatives dans la revue EJIS, et une forte proportion d'articles construits sur des approches qualitatives dans la revue SIM. Nous illustrons ensuite le potentiel de telles démarches en analysant neuf articles en détail (trois de chaque revue), mais aussi à travers une revue plus générale de tous les articles qualitatifs publiés durant cette période (61 sur 217 des articles publiés). Cette analyse met en avant une variété de méthodes, mais aussi de théories et de contributions (tant pratiques que théoriques) utilisées. Cette analyse nous permet de démontrer que la profondeur, la rigueur et le détail de chaque article utilisant de telles approches sont autant d'éléments convaincants pour le lecteur. Enfin, nous proposons quelques suggestions afin d'augmenter la visibilité de la recherche qualitative en Systèmes d'information.

Mots-clés : recherche qualitative, méthodologies de recherche, étude de cas, recherche-action, recherche critique

I. INTRODUCTION

There are a number of ways to classify research in information systems, none of which is satisfactory for all purposes. Dualistic classifications include empirical and non-empirical (where in the former, research is carried out using real-life data, frequently in the organisational settings in IS research, and the latter encompasses theoretical, conceptual, essays, literature reviews and opinion pieces where empirical research is minimized), positivistic and interpretive (the former assumes there are objective facts to be discovered whereas the latter assumes the world researched is subjective and open to different interpretations), and scientific and systemic (where in the former the researcher reduces complexity for understanding and in the latter the researcher tries to understand the whole complexity).

In this paper we start with the well-used dualistic classification of quantitative and qualitative. In 2012, there were two special issues of the European Journal of Information Systems (EJIS) devoted to each of these (volume 21, issues 1 and 2 respectively). We broadly define quantitative research as that which uses statistical data collection and analytical techniques and qualitative research as that which applies alternative techniques. Myers and Avison (2002) provide a more detailed contrast of the two approaches:

> "Quantitative research methods were originally developed in the natural sciences to study natural phenomena. Examples of quantitative methods … include survey methods, laboratory experiments, formal methods (for example, econometrics) and numerical methods such as mathematical modelling. Qualitative research methods were developed in the social sciences to enable researchers to study social and cultural phenomena. They are designed to help us understand people and the social and cultural contexts within which they live. Examples of qualitative methods are action research, case study research and ethnography. Qualitative data sources include observation and participant observation (fieldwork), interviews and questionnaires, documents and texts, and the researcher's impressions and reactions."

Although qualitative researchers might be seen as a disparate group who have many disagreements among themselves, they do perhaps share a common stance against methodological monism, that is, quantitative research being seen by some as the only valid scientific research. For example, early editorials of the Management Information Systems Quarterly (MISQ) would suggest that quantitative research was indeed seen as the only valid research in information systems. This view has changed, especially with the choice of Allen Lee as editor of MISQ from 1999 to 2001, and this is evidenced most recently by the special issue of MISQ on qualitative research (volume 37, issue 4, December 2013).

A study of the literature about research approaches and, indeed, looking at IS research papers themselves soon makes such simple classifications somewhat questionable. To give one example showing such difficulties, we see design science research as fundamentally different to both quantitative and qualitative research. Design science research has become much more accepted in information systems as evidenced by a number of journal special issues, including that of the MISQ (volume 32, issue 4, 2008). As Vaishnavi & Kuechner (living) states: "Design science research involves the creation of new knowledge through design of novel or innovative artifacts … and analysis of their use and/or performance". These artefacts include algorithms and systems design methodologies. Design science stems mainly from engineering and computer science, whereas qualitative research stems more from the social sciences, management and organisation disciplines. Interestingly the Association for Information Systems (AIS, 2013), at least as seen from the research part of their website, would seem to concur with this three-way split (Myers (living); Straub, Gefen, & Boudreau, (living); and Vaishnavi & Kuechner (living) for qualitative, quantitative and design science research respectively).

However, some would not agree with our view and would evidence, for example, the links between action research (which we argue lies within qualitative research) and design research (Sein, Henfridsson, Purao, Rossi, & Lindgren, 2011). Indeed, Sarker, Xiao, & Beaulieu (2013) exclude action research from their qualitative study. We argue, however, that whereas action research emphasises the human and organizational aspects of a change process and falls within qualitative research, design science research emphasises designing and producing a quality artefact.

As exemplar of the difficulties in classification, the paper of Sein et al. (2011) suggests the incorporation of action research into design research ('action design research'), emphasising a modification of design research and therefore we have classified it there. But this modification serves to make design research take more into account organisation aspects, and thus making it more akin to qualitative research!

Another example of these difficulties is provided in the very first paper that we examined in MISQ, the first paper of 2011 (Dean, Lowry & Humpherys, 2011). Is it quantitative or an opinion piece? It is both! It is clearly quantitative having at its centre a statistical analysis of IS journals and tenure productivity. But it is clearly also an opinion piece (and is in the 'Issues and Opinions' section of MISQ). Our view was that its main contribution lay in its discussion of an important issue rather than in its contribution as a quantitative piece. We had many discussions about where to place a number of the 217 papers in our context (including this one which we finally categorized as an opinion piece).

This brief discussion of the action research and design research paper and the quantitative and opinion paper does highlight the difficulties of classifying some papers. Although we would defend the general trends shown in our analysis regarding research approaches espoused in the three journals that we discuss later, we accept that a small number of papers might be placed elsewhere by other researchers. An abstract and/or keyword search would not be sophisticated enough to do this research. The papers need to be read in full. Such a classification is not an exact 'scientific process' and is itself subject to interpretation.

Although quantitative research is positivist, qualitative research can be positivist or interpretive, depending on the philosophical stance of the researcher. Myers & Avison (2002) add critical research (see, for example, Wynn & Williams, 2012) to the dualist view of qualitative research as being either positivist or interpretive. In critical research researchers take a critical look at society and attempt to improve peoples' lives. We look later at examples of critical research and action research as well as case study research.

There has been much written about the imbalance in the leading journals with regard to the perceived emphasis on quantitative research. It is not our purpose to provide a reading list to this debate as we wish to look positively at recent contributions and the potential of qualitative research. But a brief tour of this debate might start with Galliers & Land (1987); Hirschheim & Klein (1989); McFarlan, (1984) and Mumford, Hirschheim, Fitzgerald, & Wood-Harper (1985) which are representative of those arguing for greater variety in information systems research and, in particular, for a greater balance of quantitative and qualitative research published. These were all published well over 25 years ago!

Chen & Hirschheim (2004) also bemoan the (then) current state where quantitative research dominates qualitative and positivist research dominates interpretive. The authors argued for changes in the journal and tenure-promotion systems, as they were both seen as barriers to 'alternative' paradigms, that is, non-quantitative research. In other words, if qualitative researchers find difficulty getting their work published in the top journals and are less favoured by senior staff on promotion panels, then it discourages such research. In this paper we hope to highlight qualitative research and its rigour and relevance and therefore the loss in terms of contributions to research and practice of such discouragement.

Our view, supported by our recent two-year snapshot below, is that there is still an imbalance in the North American oriented journals. According to Sarker et al. (2013), this is being corrected, though we did not find convincing evidence judged by our MISQ findings. However, this imbalance is not and has not been evident in the European-based journals. Nevertheless, the purpose of this paper is to show the actual and potential contributions of qualitative research, to give a positive view, not to bemoan either the 2004 imbalance discussed by Chen & Hirschheim (2004) or the present imbalance as we perceive it.

II. JOURNAL COMPARISONS

In this research we looked at all papers in three journals over a two-year period, 2011 and 2012. These two years represent the latest complete volumes at the time of writing from which we could discuss some of the recent contributions of qualitative research. (12 'classic' qualitative research papers are to be found in Myers & Avison, 2002). We chose the leading journal in the field (MIS Quarterly (MISQ)), a leading European journal (European Journal of Information Systems (EJIS)) and the leading French equivalent (Systèmes d'Information et Management (SIM)).

MISQ is the leading IS journal as listed in the Financial Times index. We chose EJIS rather than the Information Systems Journal (ISJ) – both are listed in the Senior Scholars' basket of 6 or 8 top IS international research journals (AIS, Living) – as the ISJ is seen to be particularly receptive to qualitative research (Galliers & Huang, 2011). Information Technology & People is another journal that specialises in qualitative research. SIM is not the only French IS journal, but the most widely known and recognized by the French IS community. It is sponsored by the Association for Information and Management (AIM) the French association for information systems. It is also one of the oldest European IS journals.

Thus we looked at 107 papers in MISQ, 81 in EJIS and 29 in SIM (217 papers in all). It would not be adequate to do a search of abstracts and/or keywords as these frequently do not indicate the research method (even as broad as quantitative or qualitative). But in any case we wanted to look at the papers in much more depth, looking at particular methods within the broad research approach, theories used and so on. For the 61 qualitative papers themselves (10 papers in MISQ, 30 in EJIS and 21 in SIM), we look in much more detail as we want to show, for example, the variety of methods within this overall category and their contributions to both theory and practice.

Table 1, adapted from that in De Vaujany et al. (2011), gives an overview of the orientations of the three journals. All three journals are general IS research journals, that is, they do not explicitly favour one research approach to another. Although MISQ is an international journal in some respects, it is US-sponsored and all eleven of its editors-in-chief have been based in North America, apart from Ron Weber (Australia). EJIS aims to have a European focus, although it is open to diversity. Nevertheless, as stated by De Vaujany et al. (2011) and repeated in Table 1, its actual (rather than espoused) diversity has been somewhat limited. (In terms of 'breaking the mould' we therefore particularly welcome the EJIS special issue call on alternative genres (Avital, Mathiassen, & Schultze, 2013)). We chose SIM as a national journal publishing most articles in French and therefore likely to be independent of the mainstream. As we see below, recent volumes suggest that this independence has led to a majority of qualitative papers.

Table 2 provides an overview of the three journals over the two-year period. This summary is taken from the detailed table provided in the appendix. The latter lists each of the papers in the three journals by journal-volume-issue, authors, broad topic, research approach (and method within the overall approach) and use of theory, for example, to help make sense of the data (which theories are important in the paper), whether the paper is about theory building and, indeed, whether there is any explicit theory mentioned in the paper.

What is striking in Table 2 is the comparatively low proportion of qualitative research in the leading IS journal (MISQ) and the significantly higher proportion of qualitative research in the leading French IS journal (SIM). EJIS, reflecting to some extent the European tradition, even though it is regarded as

Table 1: Overview of MISQ, EJIS and SIM (adapted from (De Vaujany, Walsh, & Mitev, 2011))

Date of creation	MISQ 1977	EJIS 2001	SIM 1996
Editors in chief (in order of succession)	G Dickson, W R King, W McFarlan, J Emery, B Ives, R Zmud, A Lee, R Weber, C Saunders. D Straub, P B Goes	R Paul, R Baskerville, F Rowe	F Rowe, Y Pigneur, R Meissonier
Key aspects of the initial editorial statements	Management and practitioner-oriented. Dickson (1977) stated in the first editorial: 'Our major goals are to be managerially oriented and to offer something of benefit to the practitioner. At the same time, we intend to provide a vehicle for researchers working in the information systems field to communicate with each other and with practitioners'. But there has been increasing tensions between theory and practice, and much debate about rigour and relevance. There is an overall dominance of positivist/quantitative research. Although claimed to be 'international', there is a US focus with US sponsorship, a largely US board and all but one EIC (Weber) North American-based).	European focus. Joint project with ECIS. Affiliated to UK Operations Research Society. 'Wide ranging debate incorporating the economic, technical, organizational and social aspects; from the role of the labour process in systems development to the ICT policies in European countries; applying European traditions of research to both theoretical and practical problems; challenge the models developed and applied in US business schools and companies; demonstrates the fallacies of much of what is frequently preached' (taken from first editorial, Liebenau & Smithson, 1991).	Joint project with AIM Francophone community. Rowe and Reix (founder) stated in their first editorial (1996) that SIM aims to be recognized as the reference journal published in French in the field of information systems. IS aims to be addressed in the broader perspective of management science. The goals are twofold: to promote scientific knowledge by the publication research works in the field of information systems in French and to develop a forum for exchange between the academic world and practitioners.
Aims and Scope 2013	The editorial objective of the MISQ is the enhancement and communication of knowledge concerning the development of IT-based services, the management of IT resources, and the use, impact, and economics of IT with managerial, organizational and societal implications. Professional issues affecting the IS field as a whole are also in the purview of the journal.	EJIS provides a distinctive European perspective on the theory and practice of information systems for a global audience. We encourage first rate research articles by academics, but also case studies and reflective articles by practitioners. We provide a critical view on technology, development, implementation, strategy, management and policy.	SIM has three scientific objectives: (a) assess the performance and characterize information systems in both their genesis and in terms of usage (b) describe and analyze the process of interpretation of information made by the actors in their monitoring activities, communication, creation and development of knowledge, and (c) describe and analyze how the actors take on the information technology and which they, in turn, modify the coordination mechanisms between actors and socio-cultural norms.

(continued) Table 1: Overview of MISQ, EJIS and SIM (adapted from (De Vaujany, Walsh, & Mitev, 2011))

Date of creation	MISQ 1977	EJIS 2001	SIM 1996
Further author comments	MISQ has a more global focus than originally (but the US remains very present, both with regards to the nationality of board members and sponsorship). It is now more open to qualitative research (particularly during Allen Lee's period as editor) but the diversity of epistemological stances is still very modest in terms of percentage of papers. This is very much reflected in our two year analysis of recent papers.	EJIS has a European focus but is open to non-European affiliations (as evidenced by the composition of the board). Nonetheless, the diversity of epistemological stances and the elaboration of a European perspective on IS is still very modest. This ambitious goal has been difficult to put into practice as EJIS attempts to be recognised as a leading international journal it also needs to be seen as 'mainstream' to some extent.	SIM is the major reference journal of Francophone IS researchers (e.g. papers emanating from French speaking Canada etc. as well as France) for business and management. SIM represents a clear break from computer science. It publishes a few papers in English (as this paper itself evidences). However its French heritage and language enable SIM to be more independent of the mainstream reflecting French culture and research interests in IS. As we will see, this has impacted on the subject of this paper, that is, greater emphasis on qualitative research.

Table 2: An overview of three journals 2011-2012

Journal 2011-12	No. of qual. papers	% of qual. papers	No. of quant. papers	% of quant. papers	No. of Mixed papers	% of mixed papers	No. of Design research papers	% of Design research papers	No. of theory, Conceptual & Opinion papers ('Other')	% of theory, Conceptual & Opinion papers ('Other')	No. of papers published
ISQ	10	9%	59	55%	3	3%	6	6%	29	27%	107
EJIS	30	37%	28	35%	3	4%	2	2%	18	22%	81
SIM	21	72%	6	21%	0	0%	0	0%	2	7%	29
Totals	61	28%	93	43%	6	3%	8	4%	49	23%	217

a general international journal, is balanced in terms of quantitative and qualitative research. A discussion of the European and North American traditions as seen in EJIS and MISQ is given in De Vaujany et al. (2011). In email correspondence (20 December 2013), the present editor of SIM, Yves Pigneur, suggested that the number of quantitative papers exceeded qualitative papers in the early years but this had been reversed for some time and the present proportion of qualitative to quantitative papers reflects submission numbers and quality. This in turn reflects the research done and esteem received for qualitative research in French research institutes, universities and business schools (for which the present authors are grateful!).

Thus it would seem that despite the contributions to qualitative research in IS, amongst others, of the IFIP Working Group 8.2 represented in several works, for example, Kaplan, Truex, & Wastell (2004); Lee, Liebenau, & DeGross (1997); Mumford et al. (1985), there is yet no breakthrough in establishing qualitative research in the conventional mainstream as represented by MISQ at least.

On the other hand, the two-year snapshot might be somewhat misleading, evidenced by the last issue of MISQ in the following year being a special issue on qualitative research. The number of mixed research (both quantitative and qualitative in the same piece) and design science papers published is still quite small. Other papers that are classified under ‘other research’ might be ‘opinion piece’, ‘conceptual’, ‘literature review’, or ‘essay’ (we omitted all editorials from this review). In the next section we look at example qualitative research papers.

By studying these examples of qualitative research we are, of course, not implying any weakness to other approaches to IS research, but we are highlighting the actual and potential contributions of qualitative research to IS research, teaching and practice. The motivation is well described by Myers (living):

“The motivation for doing qualitative research, as opposed to quantitative research, comes from the observation that, if there is one thing which distinguishes humans from the natural world, it is our ability to talk! Qualitative research methods are designed to help researchers understand people and the social and cultural contexts within which they live. Kaplan & Maxwell (1994) argue that the goal of understanding a phenomenon from the point of view of the participants and its particular social and institutional context is largely lost when textual data are quantified.”

III. NINE QUALITATIVE RESEARCH CONTRIBUTIONS

In this section we look at nine qualitative papers, three from each of the three journals represented. They are not necessarily our choice of the nine ‘best’ papers, but have been chosen to represent each of the journals and different approaches, theories and contributions, both to research and practice, of present-day qualitative research in IS. The three from SIM are in French (the second author is francophone), so it is hoped that readers not normally disposed to read the French will be enticed to read the full papers (SIM always provides abstracts in English and French). Four of the papers are in-depth case studies, as this is the most represented qualitative approach in the journal issues studied, but one is a single longitudinal case, a second is a comparative study of two cases, a third is a multiple case study and the fourth chosen because of its stress on theory building. There is also an example of field study research (drawing on 24 cases). There are two action research papers and one paper provides an example of critical research which, as we discussed above, we classified as being within the qualitative research paradigm. The paper based on an historical approach also evidences critical thinking.

It is of course difficult to represent a paper comprehensively in a short piece, and we have been selective in attempts at giving a 'flavour' of each paper, but we hope the following provides an indication of the real contributions of these papers that entices readers to read these papers in full, research the source literature to study the methods and techniques in some depth, and research other qualitative papers in more detail.

Much of the following is paraphrased directly from the source documents. We are of course aware of plagiarism issues, see for example AIS code of research conduct (AIS, 2013), however we opted for this stance purposefully to try to avoid misrepresentation. Along with these paraphrases summarising the main insights we link the ideas to highlight for each paper its research approach, and contributions to theory and practice.

After the overview of these nine papers we make some general observations that we make from the study and then discuss further aspects of other qualitative papers published in the three journals over the two years.

III.1. Single longitudinal case study (Leonardi, 2011)

Brief summary: This paper looks at the intertwining of human routines and technologies. A case study is used to show this in practice. Along with contributions to practice where flexible routines and technologies are possible, the paper builds on previous theories: human agency (Jones, Hesterly, Fladmoe-Lindquist, & Borgatti, 1998), structuration theory (Giddens, 1984) and actor network theory (Latour, 1987a, 1987b), to discuss what he calls human and material agencies.

Method: The interpretive case study takes place at an automaker where computer simulations are used to test the ability of cars to withstand a crash. In this ethnographic study (where the researcher observes and participates in discussions but is not personally committed in the change process as would be the case in action research), the author spent nine full months over a two-year period at the company. Amongst other interviews, he conducted 58 with members of five organizations at the company and three suppliers involved in changing the features of the system, along with several interviews with other engineers, managers, designers and the company vice-president. He made 134 observations and studied over 500 artefacts used by engineers. This enabled him to detect several imbrications between both human to material agencies and material to human agencies. Five imbrications are described in the paper. By imbrication, he means how they function interdependently (the metaphor reference relates to interlocking tiles on a roof).

Contribution to theory: The argument reconciles the human agency perspective, structuration theory and actor-network theory by showing how technologies and humans imbricate. Human and material agencies are distinct but they work best at producing positive outcomes when joined together. The use of the material agency concept (Barad, 2003; Pickering, 2010), which had rarely been used in IS research previously, is crucial here. It covers the ways in which a technology (materiality) acts. Material agency is activated as humans approach technology with particular intentions and decide which elements of its materiality to use at a given time. Here the interlocking between both agencies becomes proceduralized and the imbrication at any time impacts on that in the future. Thus as well as building on the other theories discussed above, the author following his case study analysis provides evidence of theory building in relation to these imbrications. In particular there is choice where there is flexibility: people may change their routines where the imbrication is from material to the human and the technology can be changed where the imbrication is from the human to the material.

Contribution to practice: The study of a major manufacturer in the case study provides itself several contributions to practice. The suggested interlocking of human and material agencies and the ability for the imbrication to go from human to material (and vice versa) suggests the potential for positive change in flexible organizations.

III.2. Multiple case study (Jawadi & Boukef-Charki, 2011)

Brief summary: This paper looks at virtual teams to suggest a multidimensional approach to assess virtuality based on the identification of two key dimensions: technological and social virtuality. It also analyses how virtuality affects team performance. This approach is applied over 10 virtual teams (of students) to show how different combinations of these dimensions determine the overall team virtuality level and how the latter influences team performance.

Method: The authors perform this study through an 'hybrid methodology' based on qualitative instruments: non-participant observation, questionnaire and interviews with team members. The virtual teams were composed of 3 to 5 students registered to an online Master Degree, of a French University. The observation took place over a three-month period, during which students exchanged 791 emails. Then the authors performed 20 interviews, structured into three 3 sections: personal information about the respondents, the kind and frequency of media used to communicate, and the measure of performance. The whole data collection process lasted 5 months. All qualitative data were transcribed and coded based on a dictionary of themes and concepts built from the authors' prior literature review. Then for each virtual team, they suggested levels of technological and social virtuality. These two dimensions were later correlated to team performance. Interestingly, the measure of performance is qualitative-based. It means that the authors suggest measuring performance by analysing excerpts from interviews with participants to measure their subjective perceptions: motivation, involvement, consensus level, collective decision, and so on.

Contribution to theory: The paper makes various contributions. First, it suggests an original theoretical framework to unravel virtual team practices by splitting the phenomenon into two distinct categories: technological and social virtuality. The authors suggest measuring the technological dimension by looking at the ICT portfolio in-hand, ICTs informational value-exchange, interaction frequency, and interaction rhythm. The sociological dimension is measured by analysing communication norms, communication kinds, and interaction styles. These two aggregates allow the authors to assess the virtuality level of the team under study. By using a causal relation, the authors connect the level of virtuality to the level of performance.

Contribution to practice: The empirical findings suggest that high virtuality level results in low performance, while low virtuality results in high performance. Even if this needs to be further evidenced by larger and heterogeneous samples it is a striking finding for practitioners. Another contribution from this research work lies in the list of criteria suggested by the authors to measure sociological and technological virtuality but also the level of performance of a virtual team (based on qualitative and subjective dimensions).

III.3. Two complementary case studies (Belmondo & Roussel, 2012)

Brief summary: This paper aims at understanding the processes by which learning routines emerge within groups through an integrative approach of all three perspectives of learning. To do so, the authors study how activities (behavioural perspective), formal structures (cognitive perspective) and power relationships (social perspective) affect and shape learning routines.

Method: A qualitative methodology is used to contrast and compare two longitudinal case studies of groups engaged in processes of knowledge creation about their organisation's competitive environment (TELCIS case), and about information system implementation (PROBANK case). The authors acted as participant observers for the former case and non-participant observers for the latter. On-site observations (2000-2001) were performed in parallel for both cases. It means that results from each case enriched the reflections on both cases. Observations were complemented by interviews and a large amount of secondary data to trace participants' daily activities. Each of these activities have been analysed and then classified, according to prior findings of a literature review. Both case studies are considered as complementing each other. The authors' reasoning is abductive: they build upon the findings of these two longitudinal exploratory case studies to suggest a model addressing the emergence of learning routines. For the discussion of each case, the authors provide thick descriptions of the emergence of routines by using excerpts from participants' interviews, while underlying the interdependence of all three perspectives, and the progressive path of routines.

Contribution to theory: Results show that the emergence of learning routines is jointly shaped by behaviourial, cognitive and social perspectives. However this influence is indirect: emergence seems to be shaped by the dynamic interactions occurring between the three factors rather than by direct influence from each isolated factor. Results also cast light on the political games that take place around the tools provided by formal structures (boundary objects) or created by individual activities (instantiation of epistemic objects). Theoretically, the research enriches the practice turn and the material turn in learning research. It provides a conceptual framework to analyse micro daily practices in relation with formal structures.

Contribution to practice: For practitioners, this research underlines the importance of the roles of managers and project managers in the emergence of learning routines. They act as tool providers and as the locus of vertical power relationships. This research also highlights the importance of considering the three perspectives (behavioural, cognitive, and social) jointly and not as independent variables.

III.4. A deductive longitudinal case study (Meier, Missonier, & Missonier, 2012)

Brief summary: This paper explicitly builds upon Actor Network Theory (ANT) (Latour, 2005, 2006) tools and ontology to propose a method of visualising an IT project based upon network analysis. It aims to analyse interactions between actors and technology 'in the making' in order to understand IT project outcomes.

Method: A longitudinal case study methodology (that lasted almost two years: March 2003-2005) is used to assess the visualizing method designed a priori by the authors. It follows a deductive approach since the case was selected as it fulfilled all the necessary conditions to test researchers' visualizing method. One of the authors acted as a participant observer and collected various data: 85 official and public documents, 110 emails exchanged between the actors involved in the project, 242 days of observation and 35 interviews. Data were coded and analysed according to the visualizing method of the authors. To demonstrate its potential they discuss a morphological analysis of the project under study and 5 controversies observed over the two-year project. Within the morphological analysis, the authors propose a graphic illustration representing all the actors (humans and non-humans) involved in the project, as well as the dynamic ties between these actors and their motives. Each of the five controversies discussed in the case study is composed of four elements: the controversy topic, the actors involved, the intermediaries, and the effects of this controversy over the network. At the end it results in a 'cartography of controversies'. This longitudinal case is considered as both an illustration of the potential of this visualizing method and as an exploratory study to refine the method's design.

Contribution to theory: The authors' contribution lies on both theoretical and methodological grounds. They suggest a visualizing method that allows longitudinal and real-time observation of an IT project to follow its evolution 'in the making'. It aims to understand its outcome through the prism of the relations between human and non-human entities involved in the project. The first step of this method relates to the analysis of the construction and configuration of the network of actors (morphological analysis). It allows the identification of the entities and their relationships forming the network. The second step is to analyze the network dynamics. To do so, actor-network theorists suggest an analysis of the path of controversies, which should result in a cartography of controversies. This novel approach is consistent with recent studies aimed at improving the cartography of controversies, and proposes a first method of visualizing socio-technical networks as well as their development process.

Contribution to practice: This dynamic and real-time visualizing method provides practitioners with a monitoring and analysis tool. It enables practitioners to identify the impacts and potential effects of controversies on the project outcomes.

III.5. Field study (Guillemette & Paré, 2012)

Brief summary: CIOs aim to align IT with business objectives, but this is a great challenge. Analysis of the literature enables the authors to propose a theory of five 'ideal', that is, internally coherent profiles of IT management for alignment. In this positivist study, the authors conducted a field study of 24 large Canadian companies to see how companies met one of the ideal types or otherwise and see how ideal type companies perform compared to others.

Method: Through a study of the literature, theoretical profiles relating to the role/orientation/mission of the IT function, IT activities, skills, relationship with business users and partners, and IT governance were identified. This analysis gave rise to five ideal types named architecture builder, partner, project coordinator, systems provider and technological leader. The characteristics of these five theoretical profiles are detailed. A field study of 24 companies was used to validate the profiles using the CIOs in each case as the key informant. Semi-structured interviews enabled identification of their IT management models, and in the second part of the interview CIOs were asked to compare their model to one of the ideal types. Finally CIOs were asked about the contributions of the IT function to the organization and why the particular profile had been adopted. Interview times varied from 60 to 150 minutes with the average being around an hour. This resulted in 524 pages of transcript and other documents were collected to be analyzed. Coding helped to match the CIO descriptions to the profiles following pattern-matching principles. 21 empirical profiles matched the theoretical profiles: 3 architecture builders, 2 partners, 1 project coordinators, 12 systems providers and 3 technological leaders. Eight other empirical profiles matched the theoretical profiles fairly well but four profiles were matched to hybrid formulations: one systems provider/partner and three architecture builder/partners. Further analysis showed that the closer the match with one of the five ideal types the better the chance of achieving the IT contribution associated with the profile and those organisations outperformed the hybrid organisations.

Contribution to theory: The research described in the paper gives an excellent example of theory building. The five ideal types encompass the various characterisations of the IT function in the literature, which the authors' claim was somewhat fragmented. The theory provides explanation about why ideal profiles are adopted by CIOs.

Contribution to practice: The theory provides CIOs with a way to identify the ideal profile that best describes their IT function. The theory suggests an ideal profile for CIOs to aim for as best suiting their organizations, that is, architecture builder for improving organizational agility, partner for improving organizational productivity, project coordinator for improving organization flexibility, systems provider for reducing organization costs and technological leader for organization transformation through technology. Appropriate measures that match the profile can be chosen to assess the success or not in achieving that profile.

III.6. Action research (Napier, Mathiassen, & Robey, 2011)

Brief summary: This paper suggests that companies need to move away from the less complex challenges of efficiency or flexibility, exploitation or exploration and evolutionary or revolutionary change towards more encompassing ambidexterity. The action research takes place in a small software development firm to illustrate how this might be put into practice. The research builds on previous theories about ambidexterity, especially contextual ambidexterity. By suggesting firms build contextual ambidexterity, contributions to practice include improvements in firm-level coordination.

Method: The action research takes place over a two-year period. The researchers worked in collaboration with senior management and problem-solving teams, indeed the authors refer to their action research as 'collaborative practice research'. The diagnosing phase included 22 interviews and two workshops; the establishing phase included 3 planning meetings of the software coordination group (SCG) and two other meetings; the acting phase included 7 SCG meetings and the learning phase 6 SCG meetings and ten interviews (there are some interesting interview citations in the text). It is possible in action research to undertake more than one complete cycle, which was the case in this research.

Contribution to theory: This research adds to the theory on ambidexterity, especially contextual ambidexterity. It provides a new model on how this might be achieved. There are five principles relating to establishing a SCG with a clear agenda, following the process of diagnosing, acting and learning phases, increasing alignment by concentrating on project portfolio management and software process improvement, increasing adaptability by concentrating on project portfolio management and market and technology research, and finally applying principles of contextual ambiguity to improve performance management and social support. As this theory building was achieved through one action research project, researchers are invited to test and develop the model through other projects.

Contribution to practice: The authors could find no previous evidence about how contextual ambidexterity could benefit software organizations and this research provides a detailed account of how this might be achieved. But it requires the capacity to work towards common goals and the capacity to change quickly. The four principles put forward in the contribution to theory above, also gives clear indication to practice. It also suggests how practicing software managers can intervene. As this particular firm had a previous history of unsuccessful attempts at innovation, this makes the successful change process described potentially powerful to practice at large.

III.7. Canonical action research (Davison, Martinsons, & Ou, 2012)

Brief summary: This paper adds sophistications to canonical action research (CAR), in particular, by incorporating focal theories and instrumental theories. The modified approach is practiced at two companies in China.

Method: CAR is slightly different to that espoused in Napier et al. (2011) in that the phases of the cycle are diagnosis, action planning, intervention, evaluation and reflection. However the aims of all approaches to action research are similar: to address organizational problems directly and also contribute to research. Two action research cases at Chinese public relations firms undertaken by the authors are described in the paper. For the first company the research took place over a 25 month period, of which diagnosis took place over a whole year (80% of the employees were interviewed). In this first phase two reports were written and the authors then undertook a survey (which gained a 78% response rate) and this also helped to produce the six recommendations to the CEO for the next stages of the cycle. However, only selected recommendations were implemented in the action phase in somewhat of a piecemeal way due to the impact of the global recession. The second case discussed was undertaken over a 22 month period and started immediately following the first case. 30% of employees were interviewed and 50% responded to a survey and this led to a diagnosed need for IT-based change to knowledge management practices. Transactive memory theory (Wegner, 1987), to give one example of the use of theory, helped to plan the action following but preserving existing good practices. A team of 13 people located in three cities carried out the intervention in a pilot project. The evaluation phase was less successful as criticisms were made about the user-friendliness of the software. An important general manager resigned from the firm at this time causing further problems. However the later reflection phase with the CEO suggested that some aspects of the project were successful and also that the Chinese cultural context might explain some negative results.

Contribution to theory: Including focal theories and instrumental theories into action research is a particular contribution in this paper. A focal theory is the theoretical cornerstone for action-oriented change in a CAR project. It is the intellectual basis influencing and guiding the research scope of the action research project. In contrast, instrumental theories: "include any tools, processes, or models that theorize how work is done and how outcomes are achieved" (Davison et al. 2012, p.766). In the projects the value shop (Stabell & Fjelstad, 1998) and the balanced scorecard (Kaplan & Norton, 1992) are used as instrumental theories and transaction cost economics (Williamson, 1975), transactive memory theory and emerging theory of knowledge sharing (both part of the theory building of this contribution) as focal theories. The paper also addresses three other challenges in practicing CAR related to guidance when diagnosing the current situation, planning the intervention to improve the problem situation and evaluating the impact.

Contribution to practice: Action research aims to contribute directly to practice and although neither of the two projects in this research was completely successful, the identification of improvements to be made in both cases is an important contribution. The implementation of the pilot project in the second case, even if not taken on further, helps to understand better the potential design and implementation of a more successful follow-up. In the first case there were some partial implementations. More generally, the cases help us understand how researchers can make improvements to practice and work in a synergistic fashion with practitioners. The improvement to the CAR approach and explicitly incorporating focal theories and instrumental theories should help more successful practice of CAR in firms. The observation made by the authors about the particular cultural context of China is an important lesson for western multinationals that are, for example, contemplating investing in China. The authors suggest that the way groups work, the relationships between people ('Guanxi', networks more generally) and the various communication channels work very differently in the Chinese context.

III.8. Critical research (Young, Kuo, & Myers, 2012)

Brief summary: This paper looks at the usage of a web-based knowledge management system for teachers in Taiwan from a critical research perspective.

Method: Most of the empirical research took place over a six-month period. 49 people (school principals, deans and teachers) were interviewed in five cities and nine villages in Taiwan. They all had been working with the system from 1-5 years. Each interview lasted around 2-3 hours. The interview transcripts were coded for concepts (about 100) grouped together to form three major themes which were finally put together as an overall theme 'to share or not to share' knowledge on the system. Most registered members of the system seem to have decided 'not to share' as only 2% used the system each day and only 5% of them posted 80% of the knowledge on the system. The critical research aspect relates to the researchers looking at issues such as freedom, power, social control and values through questioning assumptions. The authors looked at the case from the perspective of Foucault's (1975, 1977) concepts related to power and knowledge. In particular, they identify 'gaze', where those in power control those gazed upon (such as a prison warder looking at inmates from a watchtower) and 'face', that is, a person's identity as she perceives it being in the eyes of others. The authors draw on many citations from the interviews related to gaze and face issues to show why many individuals did not use or like the system. Knowledge management systems aim to encourage the sharing of knowledge, but individuals may be reluctant to risk 'losing face' by being identified as potentially giving incorrect information and being seen as incompetent by those in power gazing 'from above' at their behaviour. Paradoxically, giving correct information to a superior might also be deemed inappropriate because of the wish to be seen as humble by others, especially superiors. Knowledge systems have proved successful in many situations, but the authors conclude, at least from this one case, that there may be cultural issues in Chinese societies that are less important or not apparent elsewhere that cause major problems, a conclusion also made using a different approach and different settings in our canonical action research example.

Contribution to theory: Although becoming more evident, the number of critical studies in IS is still comparatively small. Yet studying systems with this perspective is potentially valuable because IT systems have strong elements of power and are culturally laden. This example also follows Foucault's ideas rather than the more well-known (in IS) critical social perspective of Habermas (1984) and to a lesser extent Bourdieu (1994, 1998). The paper helps to incorporate these theoretical approaches into IS for further studies.

Contribution to practice: The concepts of face and gaze are seldom incorporated in western thinking at least and therefore the study of take-up of a knowledge management system helps our understanding of aspects of systems which might not be important in western cultures but might well be important for multinational firm's implementing systems in Chinese cultures.

III.9. Historically grounded critical research (De Vaujany et al., 2011)

Brief summary: The authors examine the history of scientific writing and relate that to present-day practice as seen by a critical analysis of writing in MISQ and EJIS. They suggest that present practice is strongly influenced by scientific writing traditions to ensure 'academic legitimacy'. They argue that this convention is not always appropriate for representing present epistemological and theoretical stances of some IS academics.

Method: The authors trace the history of academia, learned societies and academic writing in France, UK and USA. This is followed by a historical and rhetorical analysis of the two journals. The former looks at editorial statements and other documents, interviews with scholars involved and people involved in management aspects. For the rhetorical analysis, the authors examined all the 436 abstracts in research articles in both journals over a seven year period. They assume that the logical structures of the argumentation (the core message of the paper) are reflected in the abstracts and then they applied sequential coding to the abstracts to ascertain whether the paper is about deepening knowledge, solving an enigma or addressing a practical issue (some are about combinations of these). The historical analysis shows changes of emphasis, but in the main both journals publish mainly rhetorical articles, written with passive voices, and have neglected managerial contributions. This tradition reduces the opportunity to publish alternative IS writing which could be, for example, reflexive, conversational, poetic or theatrical.

Contribution to theory: This paper presents one of the few historical analyses in IS literature. The paper encourages innovative research and writing.

Contribution to practice: This paper contributes to academic practice by encouraging a wider range of academic writing styles and content. It suggests journals might incorporate an 'innovative writing' section, conversations between authors and readers using web 2.0 following paper publication and online disclosure of AE-reviewer-author exchanges before publication. The paper contributes to IS practice by suggesting that IS publishing traditions discourage papers that are seen to be directly relevant to practitioners and by encouraging alternative writings and publishing opportunities.

IV. COMMENTARY

In this discussion section we reflect on aspects of the nine papers overviewed above and for each issue raised, provide evidence also from some of the other qualitative papers looked at in our research study of two years in three journals.

IV.1. Range of approaches

Papers discussed

Most of the nine papers represented discussed research that took place in organisations. Five were case studies, which are the most common approach in qualitative research in IS. Leonardi (2011) studied a carmaker over two years and the changes discussed and the long time period warrant the term longitudinal study. Belmondo & Roussel (2012) developed two complementary in-depth case studies where observations were run in parallel to allow mutual reflections between each case. Meier et al. (2012) used a deductive case study approach to observe a virtual-desk project, in real-time, through a graphic visualization of network analysis to better understand on-going controversies. Jawadi & Boukef-Charki (2011) studied 10 virtual teams of students over a five month period. Sometimes the use of students is questioned, particularly where student surrogates are used to represent CIOs, CEOs and so on, but students are appropriate in this study as it is about *their* behaviour rather than students representing other people (see also Compeau et al., 2012). Because the study of Guillemette & Paré (2012) has 24 cases, they use the term field study. The numbers suggest a broader field approach rather than a case study which would normally look at less than 10 organizations, and frequently 1-3 for an in-depth case study. Napier et al. (2011) and Davison et al. (2012) are action research studies where the researchers participate in the actual change process in the firm with the practitioners (in the case study the researchers find out what went on or what is going on by, for example, observation and interviews). We also looked at two critical studies. Young et al. (2012) question assumptions about power, social control and values whereas, unusually, De Vaujany et al. (2011) looks at present scientific writing in IS from an historical perspective.

Other papers in the study

Abbott & Jones (2012) address the quantitative-qualitative research issue directly in their study of offshore software development. They argue that previous studies have focused in the main on quantitative, economic characteristics that are seen as fixed and applying uniformly throughout a whole country. Their study looking at two cases of competing nearshore centres shows that location attractiveness does matter. Nan (2011) specifically uses both qualitative research and quantitative research in his study. A complementary relationship is described between an interpretive case analysis with agent-based modelling (Epstein, 1996) and variance-based analysis in an investigation of IT use. Bidan, Rowe, & Truex (2012) in their study of SMEs use qualitative field studies and interviews and quantitative survey data. Sometimes qualitative research precedes quantitative research, for example, a qualitative case study that reveals interesting findings might be followed by a survey to see if those findings are found more generally. Rivard & Lapointe (2012) carry out a 'case survey', which we also classify as mixed research, where 89 cases are looked at to study user resistance. It could also be classified as a positivist case study, though the large number of cases looked at in one study takes it outside our definition of a case study. Furneaux & Wade (2011) do some qualitative exploration using interviews before their quantitative main study and Pelet & Papadopoulou (2012) follow a series of exploratory interviews with a quantitative laboratory experiment. Alternatively, a survey might reveal interesting findings and this is followed by a case study to look at the phenomena in more depth. However, the approach suggested in Nan (2011) is more integrative. Roquilly (2011) was also somewhat different in that an archival analysis is described of all contractual documents from a sample of 20 virtual worlds in order to see how control is exercised in such environments. In the same special issue, Berente, Hansen, Pike, & Bateman (2011) uses a grounded theory (Corbin & Strauss, 1990) approach with discourse analysis (Van Dijk, 1993) to make sense of the organizational value of virtual worlds. Njenga & Brown (2012) use a hermeneutic approach (Eisenhardt, 1989) to understand improvisation in their case study. Unusually, Kasiri, Sharda, & Hardgrave (2011) conducted a Delphi study of ten consultants and senior managers of US retailers with each interviewed in turn to refine the findings about RFID use. In effect, the subjects acted as a panel of experts (Linstone & Turoff, 1975). The use of focus groups (Edmunds & Edmonds, 1999), effectively group interviews, is highlighted in the critical research study of Stahl, Tremblay, & LeRouge (2011). Karoui & Dudezert (2012) developed an interesting action research study within a city. It is among one of the few in-depth field studies performed in a public environment.

IV.2. Rigour in the research

Papers discussed

By 'rigour in the research' we do not mean mathematical or statistical rigour, which would be the case in quantitative research, but adherence to the principles and practice of the qualitative research approach used. Klein & Myers (1999), for example, is a good guide for carrying out interpretive research in general with full evidence to convince the reader that the conclusions are valid. A related paper (Myers & Klein, 2011) is a useful guide for researchers specifically doing critical research. Leonardi (2011), for example, spent nine months over a two-year period at the company, evidencing his work with over 58 interviews, 134 observations and a study of around 500 artefacts. Meier et al. (2012) discusses two case studies performed in parallel over a two-year period. 110 emails were collected, 85 documents, 110 emails, 242 observation days and 35 interviews. Again, the action research project of Napier et al. (2011) takes place over a two-year period and the longitudinal study of Monteiro & Rolland (2012) takes place over a six year period. In the past, evidence has been a problem because of the word count limitations of journals, but with the web, many journals enable appendices to be placed on the website so that full documentation is available (referred to as 'online supplements' by the MISQ). However, agreement needs to be established with the company for full disclosure and this is sometimes a problem in empirical research (see Avison, Baskerville, & Myers, 2001). Another issue relates to whether such studies are appropriate for a PhD student. The potentially long time period involved, difficulties of access to firms, the possibility of the internal champion leaving or changing roles, etc., all make some qualitative research for PhD risky, but not impossible, as the many research students of the first author (and the PhD work of the second author) can testify.

Other papers in the study

As we saw above, much qualitative research tends to be in-depth, with a long period spent in situ. In Mola & Carugati's (2012) longitudinal case study, the researcher spent three days per week in field observations from 1996 to 2001, with five project meetings and one user focus group meeting per month during this period, and then several follow-up visits, conversations, interviews, and document and archive searches during the period 2001 to 2011. Just to give one more example, de Corbière (2011) is also impressive in terms of rigour and richness of its dataset since it presents and analyses data collected from 25 companies between 2005 and 2007 to measure data quality improvement.

IV.3. Range of theories

Papers discussed

The use of theory to explain what happened is well evidenced in these papers. Thus Leonardi (2011) uses human agency, structuration theory and actor network theory, to discuss human and material agencies. The main objective of the paper of Davison et al. (2012) is to show how different theories can be incorporated into action research studies. Some papers contribute to theory building that is, establishing new theory in the discipline. Thus Jawadi & Boukef-Charki (2011) suggest a theoretical framework to understand virtual team practices and Belmondo & Roussel (2012) and Guillemette & Paré (2012) also provide theoretical frameworks. These examples are about theory building and the frameworks produced could be steps toward developing a theory of the status of structuration theory or actor network theory, but clearly they are not yet of that status.

Other papers in the study

Some papers refer to many theories to explain their findings, for example, Koch & Schultze (2011) refer to role theory (Biddle, 1986) and transaction cost economics (Williamson, 1975); Krell, Matook, & Rohde (2011) refer to institutional theory (DiMaggio & Powell, 1983), capability lifecycle theory (Helfat & Peteraf, 2003), organisational fit theory (Tavakolian, 1989) and interaction theory (Markus, 1983) in their analysis of change types; Koch, Gonzalez, & Leidner (2012) use boundary theory (Ashforth, Kreiner, & Fugate, 2000) and the theory of positive emotions (Fredrickson, 2001). The paper of Carlo, Lyytinen, & Boland (2012) is somewhat unusual in IS. They present a theory-generating, interpretative field study of a highly complex and successful building project by architect Frank O. Gehry. Their theory building relates to what they refer to as collective mindfulness. They also discuss IT affordances and dialectic theory as part of that contribution. Galliers & Huang (2012) use social learning theory (Bandura, 1977) and experiential learning theory (Kolb, 1984) in their grounded theory (Corbin & Strauss, 1990) approach to qualitative research training. Karoui & Dudezert (2012) used two complementary theoretical frameworks as they build upon Bourdieu's theory on social positions (Bourdieu, 1994, 1998) and on Crozier and Friedberg's (1977, 1980) strategic actor's theory to identify that the appropriation of social network technology is primarily a socio-political appropriation process. Guillemette & Paré (2011) also use an unusual framework in IS research, the theory of punctuated equilibrium (Gersick, 1991). It helps them to identify IS transformation dynamics.

IV.4. Focus on practice

Papers discussed

One of the major strengths of qualitative research in general is its focus on practice and it potential for informing and supporting the work of practitioners, and is therefore relevant as well as rigorous. Action research aims at improving practice directly, but with the other approaches this may be more indirect. These papers illustrate research in the contexts of an automaker, schools, a software development firm and public relations firms amongst many others. Jawadi & Boukef-Charki (2011) gives evidence from 10 virtual teams that increasing virtuality decreases performance. Guillemette & Paré (2012) support CIOs in their endeavour to align the IT function with business strategy according to one of five ideal types. One of the potential problems is the difficulty of generalising, in other words, how far we can assume what applies to one firm will apply to another (similar or otherwise). This is discussed in Lee & Baskerville (2003) (but see also Tsang & Williams, 2012 and Lee & Baskerville. 2012). De Vaujany et al. (2011) give guidance based on a critical analysis on how our scientific writing practice might be improved.

Other papers in the study

Monteiro & Rolland (2012) discuss the entanglement of practice and theory in their case study. Myers & Klein (2011) provides help to practitioners of critical research by providing a set of principles for doing critical research. In their critical research study Chiasson & Davidson (2012) deconstructs IS research following the philosophical ideas of Jacque Derrida (see, for example, Derrida, 1972, 1981). Sarker, Sarker, Sahaym, & Bjørn-Andersen (2012) use the term ‘revelatory’ case study to describe their approach to understanding value cocreation. They define it as researching a relatively unexplored area in depth, in this case addressing both the theoretical and empirical gaps in the literature by systematically investigating value cocreation in a business-to-business alliance context. Saint Léger & El Amrani (2011) demonstrate the role of competency centres as a technical and organizational resource for accompanying the stabilization of an organisation. Koch et al. (2012) look at the blurred boundary between social and work life in social networking as the new uses of the web take us to accept more papers researching life in the home as well as at work. Interestingly Goldkuhl (2012) argues for adding pragmatism (Dewey, 1925) to the Myers & Avison (2002) classification of qualitative research of positivist, interpretive and critical research which we have followed here.

CONCLUSION

In this paper we attempt to show the actual and potential contribution of qualitative research in information systems. We looked at two recent volumes (2011-12) of MISQ, EJIS and SIM and found that there were a low proportion of qualitative papers in MISQ, a balance of qualitative to quantitative papers in EJIS and a high proportion of qualitative papers in SIM. We illustrate the contributions of qualitative research in IS through discussing nine papers (three from each journal) in some detail and then the other qualitative papers in these issues (61 of 217 papers in total) in the discussion section. An overview of all 217 papers is provided in the appendix.

What impresses us is the depth, rigour and detail of many qualitative research studies. For example, the period of time spent in the host organizations, the numbers of interviews, focus group and other meetings, the numbers of days spent making observations, the numbers of artefacts, and documents and emails examined, all help to convince the reader that the research is well founded. The variety of approaches and methods used is also impressive with each being appropriate for the research question. The number of theories used to help us make sense of the data also adds to the contribution. (Schneberger, Wade, Allen, Vance & Eargle, 2013 list and discuss 87 theories used in IS research as a whole). Some papers are theory building, where we see potential theories in the making.

All these make the interpretations and assertions in these examples of research practiced in a variety of settings convincing to the reader. The actual and potential contributions to theory and practice discussed in the papers are also convincing. Further, though the papers are varied in terms of research and practice insights, they are all interesting (to us) partly because they demonstrate the real potential of information systems and IS research to practice as well as to inform other researchers.

Yet the MISQ statistics do not reflect that contribution. How can we improve the situation? Two potential ways forward are to appoint editors to our leading journals who are more open to qualitative (and other 'different') approaches and understand traditions other than North American ones. Notably, Information Systems Research, which publishes very few qualitative research papers, has all but two of its senior editorial team of 22 currently from North American institutions (ISR, 2013). Unless the balance changes, ISR is unlikely to change the status quo. Another way forward is to have more special issues from the qualitative research community. Perhaps the most positive sign is the current move to further internationalize our premier international conference (ICIS) which rotates each year in its three regions: North America; Europe and Africa; and Australasia. This exposes the IS research community to many different research approaches.

We were not surprised by the differences in the proportion of qualitative papers to quantitative papers in each of the three journals, but we were surprised by the greater proportion of interpretive to positivist studies in the qualitative papers. For the MISQ, 7 papers were interpretive, 3 positivist and 0 critical (though three papers discussed principles of critical research and therefore allocated to the 'Other' category); for EJIS there were 16 interpretive papers, 9 positivist and 5 critical (with two opinion papers on critical research in the 'Other' category); and with SIM all but one qualitative paper was in the interpretive research category. Indeed, whereas no author drew attention to their positivist study (a search on 'positiv…' revealed no hits to claims of positivist research), many interpretive authors drew attention to their interpretivist study. Thus Koch & Schultze (2011) state "Relying on an interpretive case study" and Holmström & Sawyer (2012) argue "This study builds from an interpretive epistemology"; and for Sarker et al. (2012) and Flynn & Du (2012) respectively 'interpretive study' and 'interpretivist qualitative case study' are one of their keywords. There are many more examples of interpretive research claims in these articles. Clearly this is very different finding to that of Chen & Hirschheim (2004) who argued that up to their time of writing positivist research was much more prominent than interpretive research even in qualitative papers, though our two-year study might show untypical results. We would like to see further studies looking at these trends since 2004 and into 2013. It would also be particularly interesting to analyse the possible correlation between the country of origins of authors, the location of their PhD training, and the kind of research they do and publish. It might be a powerful proxy to measure how cultural aspects influence the research.

The earlier remark regarding the move to internationalize ICIS brings us to some limitations of the paper. We are ourselves limited in our review by tending to concentrate on North America and Europe (and our knowledge of only two languages). By doing so we have omitted many important contributions that are not represented in the three journals studied. We would welcome developments of this study which include other regions and journals (in languages other than English and French as well). Although our limitation of two years enables us to review in depth the 217 papers and in particular the 61 qualitative papers in these three journals (simply analysing abstracts and/or key words would not be appropriate), we would also welcome developments in the study that looked at other volumes of these journals, as well as other journals. The advantage of looking back is that this analysis would recognise the impact of qualitative research through citation indices, for example, which we are not able to do in an up-to-date review as the figures are not yet available. However, we would particularly welcome analyses of future volumes (the 2013 issues will shortly be complete) which might show the hoped-for greater balance of research approaches in our leading journals.

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APPENDIX

An analysis of all papers in MISQ, EJIS and SIM 2011-12

MISQ				
Journal, Volume, Issue, Year, Page Numbers	**Paper Reference**	**Broad Topic**	**Research Approach**	**Use of Theory**
MISQ 35.1 2011 1-15	Dean, Lowry, & Humpherys, 2011	IS journals	Other	No explicit theory
MISQ 35.1 2011 17-36	Myers & Klein, 2011	Principles for critical research	Other	No explicit theory
MISQ 35.1 2011 37-56	Sein, Henfridsson, Purao, Rossi, & Lindgren, 2011	Incorporating action research practice into design research	Design research	No explicit theory
MISQ 35.1 2011 57-79	Recker, Rosemann, Green, & Indulska, 2011	Conceptual modelling grammars	Quantitative-Statistical	Ontological theory
MISQ 35.1 2011 81-98	Hinz, Hann, & Spann, 2011	E-commerce pricing	Quantitative-Laboratory and field experiment	No explicit theory
MISQ 35.1 2011 99-121	Adipat, Zhang, & Zhou, 2011	Mobile web browsing	Quantitative-Laboratory experiment	Cognitive fit theory (amongst others)
MISQ 35.1 2011 123-146	Koch & Schultze, 2011	Mobile web browsing	Qualitative-Case study (Interpretive) [single case, longitudinal]	Role theory; Theory of conflict; Transaction cost theory
MISQ 35.1 2011 147-167	Leonardi, 2011	Implementation of new simulation technology	Qualitative-Case study (Interpretive) [single case]; ethnography	Agency theory; Structuration theory; Actor-network theory
MISQ 35.1 2011 169-195	Xiao & Benbasat, 2011	Deception in e-commerce	Other	Media richness theory; social presence theory; signal detection theory; causal attribution theory
MISQ 35.1 2011 197-236	Elliot, 2011	Environmental sustainability	Other	Systems theory
MISQ 35.1 2011 237-256	Mithas, Ramasubbu, & Sambamurthy, 2011	Information management and firms' performance	Quantitative-Modelling	No explicit theory
MISQ 35.2 2011 261-292	Bagozzi, 2011	Scientific measurement and meaning	Other	No explicit theory
MISQ 35.2 2011 293-334	MacKenzie, Podsakoff, & Podsakoff, 2011	Techniques in construct measurement and validation	Other	No explicit theory
MISQ 35.2 2011 335-358	Diamantopoulos, 2011	Structural equation models	Other	No explicit theory
MISQ 35.2 2011 359-372	Bollen, 2011	Structural equation models	Other	No explicit theory
MISQ 35.2 2011 373-396	Wells, Valacich, & Hess, 2011	Website quality and perceptions	Quantitative-Laboratory experiment	Signalling theory
MISQ 35.2 2011 397-422	Chen, Kataria, & Krishnan, 2011	Information security risk management	Quantitative-Mathematical modelling	Queuing theory
MISQ 35.2 2011 423-444	D.-J. Lee, Ahn, & Bang, 2011	Privacy	Quantitative-Modelling	Game theory
MISQ 35.2 2011 445-462	Aggarwal, Dai, & Walden, 2011	Standards and IT investment risks and returns	Quantitative-Mathematical modelling	Theory building
MISQ 35.2 2011 463-486	Tallon & Pinsonneault, 2011	Strategic alignment and organizational agility	Quantitative-Sampling and modelling	Theory building
MISQ 35.2 2011 487-504	Banker, Hu, Pavlou, & Luftman, 2011	CIO reporting structure and performance	Quantitative-Mathematical modelling	Theory building
MISQ 35.2 2011 505-532	Nan, 2011	IT Use	Mixed-Case study and agent-based simulation	Theory building
MISQ 35.3 2011 533-551	Allen, Ball, & Smith, 2011	Standards in IS research behaviour	Quantitative-Survey	No explicit theory
MISQ 35.3 2011 553-572	Shmueli & Koppius, 2011	Predictive analytics in IS research	Other	Theory building
MISQ 35.3 2011 573-598	Furneaux & Wade, 2011	IS discontinuance	Mixed-Quantitative-survey/ PLS and qualitative interviews	Theory building
MISQ 35.3 2011 599-611	Banker, Mitra, & Sambamurthy, 2011	Digital trading platforms	Quantitative-Modelling	Theory building

MISQ				
Journal, Volume, Issue, Year, Page Numbers	**Paper Reference**	**Broad Topic**	**Research Approach**	**Use of Theory**
MISQ 35.3 2011 613-627	Ransbotham & Kane, 2011	Online communities	Quantitative-Mathematical modelling	Theory building
MISQ 35.3 2011 629-643	Gray, Parise, & Iyer, 2011	Social bookmarking	Quantitative-Survey, statistics	Theory building
MISQ 35.3 2011 653-671	Roquilly, 2011	Virtual game contracts	Qualitative-Archival data analysis (Positivist)	No explicit theory
MISQ 35.3 2011 673-684	Chaturvedi, Dolk, & Drnevich, 2011	Design in virtual worlds	Design science	Design theory; Theory building
MISQ 35.3 2011 685-709	Berente, Hansen, Pike, & Bateman, 2011	Organizational value of virtual worlds	Qualitative-Grounded theory (Interpretive)	Discourse analysis
MISQ 35.3 2011 711-729	Suh, Kim, & Suh, 2011	Virtual worlds and avatars	Quantitative-Experiment	Self-congruity theory; Theory building
MISQ 35.3 2011 731-747	Nah, Eschenbrenner, & DeWester, 2011	Comparison of 2D and 3D worlds	Quantitative-Experiment	Theory of brand equity; Theory of flow; Theory of telepresence
MISQ 35.3 2011 749-771	Goel, Johnson, Junglas, & Ives, 2011	Virtual worlds and users' intentions	Quantitative-Experiment	Interactionist theory of place attachment
MISQ 35.3 2011 773-788	Kohler, Fueller, Matzler, & Stieger, 2011	Designing co-creation systems in virtual worlds	Qualitative-Action research (Interpretive) two cases	Co-creation theory
MISQ 35.3 2011 789-810	Animesh, Pinsonneault, Yang, & Oh, 2011	Purchasing virtual products	Quantitative-Web-based survey	No explicit theory
MISQ 35.4 2011 813-829	Singh, Tan, & Mookerjee, 2011	Open source software success	Quantitative-Model building	No explicit theory
MISQ 35.4 2011 831-858	Ayyagari, Grover, & Purvis, 2011	Stress due to IT techno-stress	Quantitative-Survey	Person-environmental fit model
MISQ 35.4 2011 859-881	Zhang, Agarwal, & Lucas Jr, 2011	Personal product recommendations and loyalty in electronic markets	Quantitative-Experiment	Theory building
MISQ 35.4 2011 883-908	Bera, Burton-Jones, & Wand, 2011	Visual ontologies for knowledge management	Quantitative-Laboratory experiment	Ontological theory; cognitive fit theory; multimedia learning theory
MISQ 35.4 2011 909-929	McLaren, Head, Yuan, & Chan, 2011	Strategic alignment	Design science	Configuration theories
MISQ 35.4 2011 931-954	Lu & Ramamurthy, 2011	IT capability and organizational agility	Quantitative-Sampling	Theory building
MISQ 35.4 2011 955-976	Murray & Häubl, 2011	User interface	Quantitative-Laboratory experiment	Psychological theory
MISQ 35.4 2011 989-1015	Smith, Dinev, & Xu, 2011	Information privacy	Other	Multi theory
MISQ 35.4 2011 1017-1041	Bélanger & Crossler, 2011	Information privacy	Other	Theory building
MISQ 35.4 2011 1043-1061	Turel, Serenko, & Giles, 2011	Technology addiction	Quantitative-Survey	Reasoned action; planned behaviour
MISQ 35.4 2011 1063-1078	Kane & Borgatti, 2011	IS proficiency and group performance	Quantitative-Survey	Resource theory
MISQ 35.4 2011 1079-1098	Saunders, Rutkowski, Van Genuchten, Vogel, & Orrego, 2011	Virtual worlds	Quantitative-Laboratory experiment	Theory building
MISQ 36.1 2012 1-19	Constantinides, Chiasson, & Introna, 2012	IS research	Other	Critical theory
MISQ 36.1 2012 21-42	Polites & Karahanna, 2012	Habit and technology acceptance	Quantitative-Survey	Theory building
MISQ 36.1 2012 43-64	Ransbotham, Mitra, & Ramsey, 2012	Vulnerability	Quantitative-Survey	Theory building
MISQ 36.1 2012 65-83	Oestreicher-Singer & Sundararajan, 2012	E-commerce recommendation networks	Quantitative-Modelling	No explicit theory
MISQ 36.1 2012 85-106	Appan & Browne, 2012	Requirements analysis	Quantitative-Laboratory experiment	Theory building
MISQ 36.1 2012 107-122	Mehra & Mookerjee, 2012	Open source software	Quantitative-Modelling	No explicit theory

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Journal, Volume, Issue, Year, Page Numbers	**Paper Reference**	**Broad Topic**	**Research Approach**	**Use of Theory**
MISQ 36.1 2012 123-138	Aguirre-Urreta & Marakas, 2012	Construct Misspecification	Other	No explicit theory
MISQ 36.1 2012 139-146	Jarvis, MacKenzie, & Podsakoff, 2012	Model Misspecification	Other	No explicit theory
MISQ 36.1 2012 147-155	Petter, Rai, & Straub, 2012	Use of PLS-SEM research in MIS Quarterly	Other	No explicit theory
MISQ 36.1 2012 157-178	Venkatesh, Thong, & Xu, 2012	Consumer acceptance and use of technology	Quantitative-Survey	Unified theory of acceptance and use of technology (UTAUT)
MISQ 36.1 2012 179-203	C. Li, Peters, Richardson, & Watson, 2012	IT control weaknesses	Quantitative-Statistical analysis of reports	No explicit theory
MISQ 36.1 2012 205-224	Mithas et al., 2011	IT and firm profitability	Quantitative-Sampling	Theory building
MISQ 36.1 2012 233-262	Rai, Pavlou, Im, & Du, 2012	Co-creating IT value	Quantitative-Sampling	Theory building
MISQ 36.1 2012 263-290	Ceccagnoli, Forman, Huang, & Wu, 2012	Co-creating IT value	Quantitative-Sampling	Theory building
MISQ 36.1 2012 291-315	Han et al., 2012	Co-creating IT value	Quantitative-Sampling	Theory building
MISQ 36.1 2012 317-338	Sarker, Sarker, Sahaym, & Bjørn-Andersen, 2012	ERP vendor	Qualitative-Case studies (Interpretive)	Value theories
MISQ 36.2 2012 339-346	Hardaway & Scamell, 2012	Open knowledge creation	Other	No explicit theory
MISQ 36.2 2012 347-363	Mathiassen, Chiasson, & Germonprez, 2012	Published action research	Other	Various theories mentioned
MISQ 36.2 2012 365-394	Y. Lee, Chen, & Ilie, 2012	Online wait	Quantitative-Experiment	Resource allocation theory; cognitive absorption theory; HCI theories
MISQ 36.2 2012 395-426	Dimoka, Hong, & Pavlou, 2012	Product uncertainty in online markets	Quantitative-Modelling	Theory building
MISQ 36.2 2012 437-452	Joseph, Boh, Ang, & Slaughter, 2012	IT career histories	Quantitative-Sampling	Human capital theory; career stage theory
MISQ 36.2 2012 453-478	Sun, 2012	User revisions	Quantitative-Survey and model	Theory building
MISQ 36.2 2012 479-507	VanderMeer, Dutta, & Datta, 2012	Cost-based database technique	Design science	Theory building
MISQ 36.2 2012 509-528	Xue, Ray, & Sambamurthy, 2012	Innovation and efficiency of firm's IT assets	Quantitative-Modelling	Contingency theory; organization learning theory
MISQ 36.2 2012 529-551	Guillemette & Paré, 2012	Contribution of the IT function in organizations	Qualitative-Field study (Positivist) [multi case]	Theory building
MISQ 36.2 2012 553-576	Gopal & Koka, 2012	Governance and software development outsourcing	Quantitative-Sampling and modelling	Relational exchange theory
MISQ 36.2 2012 577-600	Chia, Lim, Soh, & Sia, 2012	Control in project management	Qualitative-Case study (Positivist) [single case, longitudinal]	Behavioural control theory
MISQ 36.2 2012 601-624	Ply, Moore, Williams, & Thatcher, 2012	IS employee attitudes	Quantitative-Survey and modelling	Control theory
MISQ 36.2 2012 625-648	Roberts, Galluch, Dinger, & Grover, 2012	Absorptive capacity knowledge	Other	Organizational learning theory
MISQ 36.2 2012 649-676	Von Krogh, Haefliger, Spaeth, & Wallin, 2012	Open source software development	Other	Self determination theory; MacIntyre's theory; Theory building
MISQ 36.3 2012 679-702	Dimoka, Banker, et al., 2012	Use of neurophysiological tools in IS research	Other	Cognitive neuroscience theories
MISQ 36.3 2012 703-716	Goodhue, Lewis, & Thompson, 2012	Comparing PLS and LISTREL	Other	No explicit theory
MISQ 36.3 2012 717-728	Marcoulides, Chin, & Saunders, 2012	Comparing PLS and LISTREL	Other	No explicit theory

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Journal, Volume, Issue, Year, Page Numbers	**Paper Reference**	**Broad Topic**	**Research Approach**	**Use of Theory**
MISQ 36.4 2012 1293-1327	Abbasi, Albrecht, Vance, & Hansen, 2012	Business intelligence: fraud	Design science	Meta learning
MISQ 36.4 2012 1329-1356	Sahoo, Singh, & Mukhopadhyay, 2012	Business intelligence	Quantitative-Modelling	No explicit theory
EJIS				
EJIS 20.1 2011 7-10	Österle et al., 2011	Design science research	Other	No explicit theory
EJIS 20.1 2011 11-15	Baskerville, Lyytinen, Sambamurthy, & Straub, 2011	Design science research	Other	No explicit theory
EJIS 20.1 2011 16-33	Fink, 2011	IT capabilities and strategic value	Quantitative-Survey; modelling; cluster analysis	Configurational theory
EJIS 20.1 2011 34-47	Holmström & Sawyer, 2011	Requirements engineering	Qualitative-Field research; Case study (Interpretive)	Theory building
EJIS 20.1 2011 48-68	Onita & Dhaliwal, 2011	Strategic alignment and software development	Qualitative-Case study (Interpretive)	Theory building
EJIS 20.1 2011 69-86	Torkzadeh, Chang, & Hardin, 2011	Technology-enabled job learning	Quantitative-Survey	No explicit theory
EJIS 20.1 2011 87-102	Brooks, Riemenschneider, Hardgrave, & O'Leary-Kelly, 2011	IT professional identity	Quantitative-Survey, Longitudinal study	Social identity theory; self-categorization theory
EJIS 20.1 2011 103-117	C. L.-H. Chang, Chen, Klein, & Jiang, 2011	IS career changes	Qualitative-Multiple case study (Positivist); grounded theory	Theory building
EJIS 20.1 2011 118-132	Wakefield, Wakefield, Baker, & Wang, 2011	Social cues and website use	Quantitative-Survey and field study	Social response theory; motivation theories
EJIS 20.2 2011 139-155	H. Li, Gupta, Luo, & Warkentin, 2011	Instant messaging and task complexity and user satisfaction	Quantitative-Experiment	Adaptive structuration theory
EJIS 20.2 2011 156-167	Haines & Mann, 2011	De-individuation and computer-mediated communication	Quantitative-Experiment	Media richness theory; social information processing theory;
EJIS 20.2 2011 168-185	Schmidt & Buxmann, 2011	Enterprise architecture	Quantitative-Survey	Theory building
EJIS 20.2 2011 186-200	L. Liu, Feng, Hu, & Huang, 2011	ERP adoption and use	Qualitative-Case study (Positivist) [multi case]	Theory building
EJIS 20.2 2011 201-220	Teo, Srivastava, Ranganathan, & Loo, 2011	RFID implementation	Qualitative-Exploratory longitudinal case study (Positivist)	Mindfulness theory; stakeholder theory
EJIS 20.2 2011 221-236	Yang, Stafford, & Gillenson, 2011	Employee relationship management systems	Quantitative-Modelling	Acceptance theory
EJIS 20.2 2011 237-250	Macredie & Mijinyawa, 2011	Open source software adoption in SMEs	Qualitative-Case study (Interpretive)	Theory of planned behaviour; Theory building
EJIS 20.3 2011 255-266	van den Hooff & de Winter, 2011	Relationship between business and IT departments	Mixed- Case study and surveys	Theory building
EJIS 20.3 2011 267-284	Warkentin, Johnston, & Shropshire, 2011	Social learning and privacy	Quantitative-Sampling	Social learning theory
EJIS 20.3 2011 285-302	Lewis, Mathiassen, & Rai, 2011	Sensemaking as a lens for investigating socio-cognitive factors	Qualitative-Case study (Interpretive) [single case, multi site]	Organizational sensemaking
EJIS 20.3 2011 308-328	Sipior, Ward, & Connolly, 2011	TAM and government applications: digital divide	Quantitative-Sampling	TAM
EJIS 20.3 2011 329-342	Brown & Thompson, 2011	e-government policies	Qualitative-Case study (Interpretive) [single case]	Institutional theory; diffusion theory
EJIS 20.3 2011 343-357	Stafford & Turan, 2011	Online tax payment	Quantitative-Survey	TAM; Theory of planned behaviour
EJIS 20.3 2011 358-374	Feller, Finnegan, & Nilsson, 2011	Open innovation impacts on business models	Qualitative-Case study (Positivist)	No explicit theory

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MISQ 36.4 2012 1293-1327	Abbasi, Albrecht, Vance, & Hansen, 2012	Business intelligence: fraud	Design science	Meta learning
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EJIS 20.3 2011 343-357	Stafford & Turan, 2011	Online tax payment	Quantitative-Survey	TAM; Theory of planned behaviour
EJIS 20.3 2011 358-374	Feller, Finnegan, & Nilsson, 2011	Open innovation impacts on business models	Qualitative-Case study (Positivist)	No explicit theory

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EJIS 20.4 2011 378-394	Stahl, Tremblay, & LeRouge, 2011	Emancipatory research in healthcare	Qualitative-Critical social research; Focus groups	Critical theories
EJIS 20.4 2011 395-417	De Vaujany, Walsh, & Mitev, 2011	Critical analysis of research articles in IS	Qualitative-Critical, Historical and rhetorical analysis	Various theories in articles
EJIS 20.4 2011 422-439	Truex, Cuellar, Takeda, & Vidgen, 2011	Scholarly impact of Heinz Klein	Qualitative-Critical social research: Lexical analysis	Critical social theory
EJIS 20.4 2011 440-455	Cecez-Kecmanovic, 2011	Arguments for critical research methodology	Other	Critical theory
EJIS 20.4 2011 456-476	Hassan, 2011	Questions IS as a discipline	Other	Critical theory
EJIS 20.4 2011 477-489	Basden, 2011	Discusses integration of socio-critical and positivist approaches	Other	Critical theory
EJIS 20.5 2011 496-509	Lyytinen & Damsgaard, 2011	Inter-organisational IS	Other	TAM; multi-level theory
EJIS 20.5 2011 510-528	Lederman & Johnston, 2011	Understanding manual systems	Design theory	Theory building
EJIS 20.5 2011 529-541	C. M. Chan, Hackney, Pan, & Chou, 2011	Process model of e-government implementation	Qualitative-Case study (Interpretive) [single case]	Theory building
EJIS 20.5 2011 542-559	Benlian, 2011	Analysis of different software models	Quantitative-Sampling	No explicit theory
EJIS 20.5 2011 560-573	Fang, Benamati, & Lederer, 2011	Coping mechanisms for rapid IT change	Quantitative-Survey	National culture theory
EJIS 20.5 2011 574-588	Dudezert & Leidner, 2011	Knowledge maps	Qualitative-Case study (Positivist) [multi case]	Social theory; illusion of control theory; symbol and signal theory
EJIS 20.5 2011 589-607	Elie-Dit-Cosaque & Straub, 2011	User adaptation to disruptive IT	Quantitative-Experimental design	Theoretical framework: coping model of user adaptation
EJIS 20.5 2011 608-623	Shin & Kim, 2011	Reliability of measurement method	Quantitative-Modelling	No explicit theory
EJIS 20.6 2011 629-642	Krell, Matook, & Rohde, 2011	Suggests which change type (IS introduction, replacement, extension, and merge) might be appropriate	Qualitative-Focus group study (Positivist)	Institutional theory; capability lifecycle theory; organisational fit theory; interaction theory
EJIS 20.6 2011 643-658	D'Arcy & Herath, 2011	Deterrance theory and IS security research	Other	Deterrance theory; rational choice theory
EJIS 20.6 2011 659-673	R. Y. Chan & Lai, 2011	Ethical ideology and software piracy	Quantitative-Survey	Cognitive moral development; ethical ideology theory
EJIS 20.6 2011 674-690	Napier, Mathiassen, & Robey, 2011	Firm-level co-ordination for a Geographic information systems service provider	Qualitative-Action research (Interpretive) [single case]	Contextualist inquiry; contextual ambidexterity
EJIS 20.6 2011 693-702	Hwang & Schmidt, 2011	Reassesses meta-analytic studies	Other	Theory as moderator
EJIS 20.6 2011 703-712	Sharma & Yetton, 2011	Response to above	Other	No explicit theory
EJIS 21.1 2012 6-21	Seddon & Scheepers, 2012	Drawing general conclusions from samples	Other	No explicit theory
EJIS 21.1 2012 22-48	Polites, Roberts, & Thatcher, 2012	Conceptualizing models	Other	No explicit theory
EJIS 21.1 2012 49-69	Indulska, Hovorka, & Recker, 2012	Quantitative approaches to content analysis	Quantitative- Latent semantic analysis and data mining	No explicit theory
EJIS 21.1 2012 70-86	Evangelopoulos, Zhang, & Prybutok, 2012	Issues when using Latent semantic analysis	Other	No explicit theory
EJIS 21.1 2012 87-98	Richard, Coltman, & Keating, 2012	Designing IS service strategy	Other	Statistical design theory; utility maximization theory; multi theory
EJIS 21.1 2012 99-112	Henseler, Fassott, Dijkstra, & Wilson, 2012	Use of PLS	Other	No explicit theory Other

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EJIS 21.2 2012 119-134	Galliers & Huang, 2012	Qualitative research training	Other	Social learning theory; experiential learning theory
EJIS 21.2 2012 135-146	Goldkuhl, 2012	Pragmatism v Interpretism in qualitative IS research	Other	No explicit theory
EJIS 21.2 2012 147-159	Papas, O'Keefe, & Seltsikas, 2012	eGovernment application – workflows and digital signatures	Other	No explicit theory
EJIS 21.2 2012 160-175	Street & Ward, 2012	Validity and reliability of longitudinal case study research	Other	No explicit theory
EJIS 21.2 2012 176-191	McLeod & Doolin, 2012	IS development	Qualitative-Case study (Positivist) [single case]	Actor-system dynamics; sociotechnical systems
EJIS 21.2 2012 192-206	Chiasson & Davidson, 2012	Deconstruction in IS research	Qualitative-Critical research	Critical theory
EJIS 21.3 2012 212-228	Flynn & Du, 2012	Development of a smartcard system	Qualitative-Case study (Interpretive) [single case]	Topography of legitimacy
EJIS 21.3 2012 229-254	Dietz & Juhrisch, 2012	Conceptual modelling	Design science	Theory of semantics
EJIS 21.3 2012 255-267	Kasiri, Sharda, & Hardgrave, 2011	Benefits of RFID in retailing	Qualitative-Delphi study using interviews (Positivist)	Balanced scorecard
EJIS 21.3 2012 268-286	Grahlmann, Helms, Hilhorst, Brinkkemper, & van Amerongen, 2012	Enterprise content management systems	Qualitative-Case study (Interpretive) [multi case]	No explicit theory
EJIS 21.3 2012 287-302	Bidan, Rowe, & Truex, 2012	IS architectures in SMEs	Mixed-Field studies, interviews and survey data	Theory building
EJIS 21.3 2012 303-320	Schwarz, Schwarz, Jung, Pérez, & Wiley-Patton, 2012	Assimilation in virtual worlds	Quantitative-Structural equation modelling	Hedonistic IS theory; social presence Theory; escape theory
EJIS 21.3 2012 321-340	Xu, Turel, & Yuan, 2012	Online game addiction	Quantitative-Survey; PLS	Theory building
EJIS 21.4 2012 358-372	Azad & King, 2012	Computer workarounds	Qualitative-Case study (Interpretive) [comparative -two cases]	Institutional theory
EJIS 21.4 2012 373-387	Yayla & Hu, 2012	Strategic alignment and performance in a developing country setting	Quantitative-Survey	No explicit theory
EJIS 21.4 2012 388-403	Mola & Carugati, 2012	IT sourcing amongst Italy SMEs	Qualitative-Case study (Interpretive) [single case, longitudinal]	Institutional theory; transaction cost theory
EJIS 21.4 2012 404-426	Sigala, 2012	Impact of geocollaborative portals on travellers' collaborative decision making	Quantitative-Experimental study on students	No explicit theory
EJIS 21.4 2012 427-437	Ruth, 2012	Value of question and answer web sites	Quantitative-Structural equation	Satisfaction theory; expectation-confirmation theory
EJIS 21.4 2012 438-467	Pelet & Papadopoulou, 2012	Effect of colours on e-commerce websites	Mixed-Interviews then lab study	No explicit theory
EJIS 21.5 2012 479-495	Córdoba, Pilkington, & Bernroider, 2012	Stage of academic maturity of IS	Quantitative-Citation analysis	Theory of discipline development
EJIS 21.5 2012 496-511	Young, Kuo, & Myers, 2012	Development and use of a web-based knowledge management system – cultural aspects	Qualitative-Critical research	Critical theory
EJIS 21.5 2012 512-528	Turel & Serenko, 2012	Social network sites	Quantitative-Survey	Ccognitive behavioral model; social skill model; socio-cognitive model of unregulated media use
EJIS 21.5 2012 529-551	Abbott & Jones, 2012	Locational attractiveness for outsourcing	Qualitative-Case study (Interpretive) [two cases]	No explicit theory
EJIS 21.5 2012 552-569	Novak, Brooks, Gadd, Anders, & Lorenzi, 2012	Organizational routines and the value of analyzing technology use mediation activities	Qualitative-Case study (Positivist) [single case. multi site]; ethnography	Agency theory; technology use mediation
EJIS 21.5 2012 570-586	Doolin & McLeod, 2012	Managing IS development practices	Qualitative-Case study (Interpretive) [single case, longitudinal]	Sociomateriality; boundary theory

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EJIS 21.6 2012 592-607	Njenga & Brown, 2012	Practitioner improvisation in information systems security	Qualitative-Case study (Interpretive) [single case]; Hermeneutics	Improvisation theory
EJIS 21.6 2012 608-620	Monteiro & Rolland, 2012	Technologically mediated and geographically dispersed work practices	Qualitative-Case study (Interpretive) [single case. multi site, longitudinal]	The entanglement of practice and theory
EJIS 21.6 2012 621-642	T. Li & Unger, 2012	Personalised web services and privacy	Quantitative-Experimental research	No explicit theory
EJIS 21.6 2012 643-663	S. C. Park, Keil, Kim, & Bock, 2012	Overbidding in C2C auctions	Quantitative-Survey	Escalation theory
EJIS 21.6 2012 664-679	Benitez-Amado & Walczuch, 2012	Relationships between IT, environmental organizational issues and firm performance	Quantitative-Sample; structural equations	Resource-based theory; dynamic capabilities theory ; natural-resource based theory of the firm;
EJIS 21.6 2012 680-698	Wu & Du, 2012	Behavioural intention and actual usage	Quantitative-Sampling	No explicit theory
EJIS 21.6 2012 699-717	Koch, Gonzalez, & Leidner, 2012	social networking - the blurred boundary between work life and social life	Qualitative-Case study (Interpretive) [single case]	Boundary theory; theory of positive emotions
SIM				
SIM 16.1 2011 35-68	Guillemette & Paré, 2011	Transformation of IT functions	Qualitative-Case study [multi case] (positivist)	Punctuated equilibrium theory
SIM 16.1 2011 69-112	Saint Léger & El Amrani, 2011	ERP post-implementation issues: role of Competency Centres	Qualitative-Action research [single case] (interpretive)	No explicit theory
SIM 16.1 2011 113-151	Michaux & Geffroy, 2011	E-transformations impacts on organizations	Qualitative-Meta-synthesis of previous literature (intepretive)	IS structuration theory
SIM 16.1 2011 153-184	Douyère, 2011	Knowledge Policy	Qualitative-Case study [longitudinal case] (intepretive)	No explicit theory
SIM 16.2 2011 9-34	Mignerat & Audebrand, 2011	IT in the management of mega-events	Qualitative-Case study [single case] (interpretive)	Institutional theory
SIM 16.2 2011 35-71	Abdennadher & Cheffi, 2011	Internet voting proxy systems in shareholders' general meeting	Qualitative-Case study [single case] (interpretive)	Institutional theory
SIM 16.2 2011 73-105	Leroux & Pupion, 2011	Adoption of sustainability reporting systems	Quantitative-Statistical	Institutional theory; innovation diffusion
SIM 16.3 2011 7-44	Charki, Josserand, & Charki, 2011	Inter-organizational system post-adoption	Qualitative-Case study [single case] (interpretive)	No explicit theory
SIM 16.3 2011 45-79	F. de Corbière, 2011	Data quality	Qualitative-Case study [multi case] (interpretive)	No explicit theory
SIM 16.3 2011 81-114	Goethals, Snoeck, & Lemahieu, 2011	Inter-organization systems integration	Qualitative-Case study [two cases]; Grounded theory (interpretive)	Theory building
SIM 16.3 2011 115-138	Perrin, 2011	KM strategies	Qualitative-Case study [single case] (interpretive)	No explicit theory
SIM 16.4 2011 9-36	Haon & Patel, 2011	Retailing Websites	Quantitative-Statistical	No explicit theory
SIM 16.4 2011 37-72	Jawadi & Boukef-Charki, 2011	Technological and Social Virtuality	Qualitative-Case study [multi case] (interpretive)	Theory building
SIM 16.4 2011 73-101	Carugati, Giangreco, & Sebastiano, 2011	Evolving Systems	Qualitative-Case study [single case, longitudinal] (interpretive)	Institution theory; transaction cost theory
SIM 17.1 2012 7-48	Meier, Missonier, & Missonier, 2012	Outcomes of IT projects	Qualitative-Case study [longitudinal case] (interpretive)	Actor network theory
SIM 17.1 2012 49-80	Karoui & Dudezert, 2012	Adoption of Social Network Systems	Qualitative-Action Research (interpretive)	Practice theory; strategic actor's theory
SIM 17.1 2012 81-111	F de Corbière, Rowe, & Wolff, 2012	Internal and External IS Integration	Quantitative-Statistical	IT-enabled business transformation
SIM 17.1 2012 113-143	Dagorn & Poussing, 2012	Information Security Governance	Quantitative-Statistical	UTAUT

SIM				
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SIM 17.2 2012 9-38	Godé-Sanchez, Hauch, Lasou, & Lebraty, 2012	Net-centric Decision support system	Qualitative-Case study (interpretive)	No explicit theory
SIM 17.2 2012 39-80	Carton & Farastier, 2012	KM environment	Qualitative-Case study (interpretive)	Boundary objects
SIM 17.2 2012 81-114	Caron-Fasan & Lesca, 2012	Strategic scanning project management	Qualitative-Action Research (interpretive)	Strategic scanning factors
SIM 17.2 2012 115-149	Barlette, 2012	SME managers in IS security	Qualitative-Case study (interpretive)	No explicit theory
SIM 17.3 2012 7-31	Pascal, 2012	Review of Design Science	Other	No explicit theory
SIM 17.3 2012 33-70	Mignon, Siadou-Martin, Janicot, Averseng, & Mazars-Chapelon, 2012	KM objectives and KM devices	Quantitative-Statistical	No explicit theory
SIM 17.3 2012 71-110	Belmondo & Roussel, 2012	Learning routines	Qualitative–Longitudinal Case study (interpretive)	Routine dynamics
SIM 17.3 2012 111-142	Amabilé, Meissonier, Haller, & Boudrandi, 2012	Absorptive capacity and strategic monitoring	Qualitative-Case study (interpretive)	Absorptive capacity
SIM 17.4 2012 9-37	Lancini & Sampieri-Teissier, 2012	Boundary Objects	Qualitative-Case study (interpretive) [single case]	Practice theory
SIM 17.4 2012 39-68	Tsoni, 2012	Appropriation of IT	Quantitative-Statistical	No explicit theory
SIM 17.4 2012 69-95	Vitari, Humbert, & Rennard, 2012	French IS research specificities	Other	No explicit theory

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