Interpretive case studies in IS research: nature and method

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There has been an increase in recent years in the number of in-depth case studies which focus on human actions and interpretations surrounding the development and use of computer-based information systems (IS). This paper addresses philosophical and theoretical issues concerning the nature of such interpretive case studies, and methodological issues on the conduct and reporting of this type of research. The paper aims to provide a useful reference point for researchers who wish to work in the interpretive tradition, and more generally to encourage careful work on the conceptualisation and execution of case studies in the information systems field.

Introduction

The importance of social issues related to computer-based information systems has been recognised increasingly over the last decade, and this has led some IS researchers to adopt empirical approaches which focus particularly on human interpretations and meanings. The vehicle for such 'interpretive' investigations is often the in-depth case study, where research involves frequent visits to the field site over an extended period of time. This paper focuses on such interpretive case studies in the IS field, and considers philosophical and theoretical issues concerning the nature of these studies, and methodological issues on how to carry out and report on studies in this tradition.

The development of the 'interpretive' empirical school in IS has not been free of controversy, and debate continues on the relative merits of interpretivist versus positivist approaches to IS (Orlikowski & Baroudi, 1991), or the possibilities for their combination (Lee, 1991; Gable, 1994). This paper can be seen as one contribution to that debate, since it contrasts some elements of interpretivist and positivist approaches to case studies. However, despite these differences, there are many points of agreement between case study researchers working in these two traditions. For example, Yin (1989) adopts an implicitly positivist stance in describing case study research, but his view that case studies are the preferred research strategy to answer 'how?' and 'why?' questions would also be accepted by the interpretive school. Benbasat *et al.* (1987) also approach the issue of case studies from a positivist stance, but their argument that case study researchers need to be more explicit about their research goals and methods is also of relevance to

interpretive IS researchers, and indeed is part of the rationale for this current paper.

The IS literature contains reports and conclusions from a significant number of interpretive case studies, covering a range of topics and issues (for example Markus, 1983; Suchman, 1987; Zuboff, 1988; Boland & Day, 1989; Orlikowski, 1991; Walsham, 1993). Most of this literature is concentrated on the substantive case studies themselves and the conclusions which can be drawn from them. This is clearly a desirable focus, but there are few published papers that provide a synthesised view of the nature and conduct of such case studies with specific reference to the field of computer-based IS; this leaves a gap in the literature where this paper aims to contribute.

In the next section, the research tradition of interpretive case studies is described in more detail, and is contrasted with positivist approaches. This is followed by a section on the use of theory, which is a key issue in all research traditions. The remainder of the paper is focused on methodological questions concerned with the conduct of empirical research, and on the issue of how to report and generalize results from such work. The final section draws some overall conclusions on interpretive case studies in IS research.

Philosophical basis of interpretive research

The ethnographic research tradition in anthropology is a valuable starting point for a consideration of the philosophical basis of interpretive case studies, since it has been widely drawn on by organizational researchers concerned with interpreting the patterns of symbolic action that create and maintain a sense of organization (see, for example, Smircich, 1983). Geertz (1973) gives

a concise view of the status of the data which are collected in an anthropological study:

What we call our data are really our own constructions of other people's constructions of what they and their compatriots are up to. (p. 9)

Van Maanen (1979), writing in the tradition of organizational ethnography, calls the interviewee's constructions first-order data and the constructions of the researcher second-order concepts. He warns that assuming an ethnographic stance is not a guarantee that reseachers will collect valuable data no matter how long they stay in the field. Second-order concepts rely on good theory and insightful analysis, and mere collection of in-depth case study data does not provide these concepts in itself. Examples of second-order concepts in the IS literature, derived from interpretive case studies, include the 'automate' concept from the work of Zuboff (1988), and the concept of 'technological frames' in Orlikowski & Gash (1994).

A second feature of the anthropological tradition is its concern with 'thick description'. Geertz (1973) gives a fascinating example of this involving Jews, Berbers and the French in Morocco in 1912. The incident recounted involves 'sheep stealing' by one of the Jews, who Geertz calls Cohen, from some of the Berbers. However, on closer examination, the 'stealing' turns out to involve compensation for an earlier incident in which Cohen was robbed and nearly killed by members of the same Berber group. The French misunderstand this and put Cohen in prison for what they take to be simple theft on his part. Geertz uses the incident to point out that the ethnographer is faced with a multiplicity of complex conceptual structures, many of them superimposed upon or knotted into one another and which must be first grasped and then rendered intelligible to others.

The IS researcher entering an organization today is also faced with complex and intertwined conceptual structures which it is difficult to grasp and render intelligible as did Geertz in his anthropological work. The need for 'thick' description is just as important in trying to understand what is happening in connection with a complex computer-based information system, involving managers, users and designers, as it was in trying to interpret the interactions of Jews, Berbers and the French in Geertz's study. As a specific illustration of this, Boland and Day (1989) describe how a system designer reinterprets the behaviour of someone who at first she thought was trying to help with her design work, but on further reflection over a period of time she concludes that he was trying to isolate her from others for his own political interest. An IS researcher can only access these subtleties of changing interpretation by the use of approaches based on 'thick' description.

In discussing the purpose of his studies, Geertz argues that he is not trying to answer our deepest questions about other societies, but merely to make his interpretations of these societies available in the 'consultable record'. His goal is not to generate truth or social laws, and this interpretive approach can be clearly distinguished from the positivist tradition. This should not be taken to imply that interpretive work is not generalizable, although the nature of such generalizations is different in the two traditions. This point will be considered in some detail in the penultimate section of the paper.

The differences between interpretive and positivist approaches can be addressed more formally by considering their epistemological and ontological stances. With respect to epistemology, concerned with the nature of knowledge claims, Archer (1988) defines positivism as the position that facts and values are distinct, and scientific knowledge consists only of facts. He contrasts this position with two alternatives: 'non-positivism' in which facts and values are intertwined and hard to disentangle, and both are involved in scientific knowledge; and 'normativism' which takes the view that scientific knowledge is ideological and inevitably conducive to particular sets of social ends. Either of the latter two positions is open for the interpretive researcher to adopt.

With respect to ontology, concerned with the nature of reality, Archer distinguishes between 'external realism' which considers reality as existing independently of our construction of it, 'internal realism' which views reality-for-us as an intersubjective construction of the shared human cognitive apparatus, and 'subjective idealism' where each person is considered to construct his or her own reality. The usual ontological stance for an interpretive IS researcher would involve one of the latter two positions, particularly with regard to the human interpretations and meanings associated with computer systems.

The above brief discussion of epistemology and ontology is summarised in Table 1. It clearly distinguishes the positivist tradition, but it does not provide any definitive answers as to what precise philosophical stance should be adopted by the interpretive IS researcher. In the related field of 'systems', Mingers (1984) argued that there is considerable value in a careful examination of the philosophical basis of different types of interpretive approaches, and he identified the existence of at least four substantively different strands of thought: phenomenology, ethnomethodology, the philosophy of language, and hermeneutics. He used this analysis to provide a thoughtful critique of the underlying philosophy of various key writers in the systems field, including Checkland (1981) on soft systems methodology. The different strands of thought identified by Mingers can be seen to underpin

Table 1 Alternative stances on knowledge and reality.

Epistemology	Ontology
Positivism: Facts and values are distinct and scientific knowledge consists only of facts	External realism: Reality exists independently of our construction of it
Non-positivism: Facts and values are intertwined; both are involved in scientific knowledge	Internal realism: Reality-for-us is an intersubjective construction of the shared human cognitive apparatus
Normativism: Scientific knowledge is ideological and inevitably conductive to particular sets of social ends	Subjective idealism: Each person constructs his or her own reality

some of the research work on interpretive case studies in the IS field: for example, Zuboff (1988) drew on phenomenology, Suchman (1987) on ethnomethodology, and Boland & Day (1989) and Lee (1994) on hermeneutics. Further discussion of the nuances of these various interpretive positions is not possible here, but a principal conclusion from this section is that researchers need to reflect on their own philosophical stance, which should be stated explicitly when writing up their work.

Use of theory in interpretive studies

A key question for researchers in any tradition, regardless of philosophical stance, concerns the role of theory in their research. Eisenhardt (1989) discusses this issue in the context of organizational research, and identifies three distinct uses of theory: as an initial guide to design and data collection; as part of an iterative process of data collection and analysis; and as a final product of the research. We now discuss each of these with respect to interpretive case studies. A summary of the examples in this discussion is given in Table 2.

Table 2 Examples of the use of theory in IS case studies.

Use of theory	Interpretive IS case study
As an initial guide to design and data collection	Walsham (1993) drawing on Pettigrew
As part of an iterative process of data collection and analysis	Orlikowski (1993) using grounded theory
As a final product of the research	Orlikowski & Robey (1991)

The motivation for the use of theory in the earlier stages of interpretive cases studies is to create an initial theoretical framework which takes account of previous knowledge, and which creates a sensible theoretical basis to inform the topics and approach of the early empirical work. For example, the theory of contextualism developed by Pettigrew (1987, 1990) suggested the need to study the content, context and process of organizational change when researching business strategy and its implementation in field studies. Walsham (1993) used this theory as a starting basis for the study of IS strategy and its implementation.

Although theory can provide a valuable initial guide as described above, there is a danger of the researcher only seeing what the theory suggests, and thus using the theory in a rigid way which stifles potential new issues and avenues of exploration. It is desirable in interpretive studies to preserve a considerable degree of openness to the field data, and a willingness to modify initial assumptions and theories. This results in an iterative process of data collection and analysis, with initial theories being expanded, revised, or abandoned altogether. A simple metaphor for this latter case is the use of scaffolding in putting up a building, where the scaffolding is removed once it has served its purpose.

With respect to theory as a final product of the research, Eisenhardt notes that the output from case study research may be concepts, a conceptual framework, propositions or mid-range theory. There is some irony in quoting Eisenhardt in the current paper, since she explicitly states her epistemological position as positivism, and mid-range theory is something which should, according to her views, then be tested formally using positivist approaches. This position on the role of theory would not be acceptable to many interpretive researchers, although the view of theory as a desirable final product of case study research would be generally shared. For example, Orlikowski and Robey (1991) drew on structuration theory (Giddens, 1984) and their own empirical work in IS to construct a final product in the form of a theory in which the organizational consequences of information technology are viewed as the products of both material and social dimensions.

The three uses of theory in interpretive studies discussed above can be usefully compared with the 'grounded theory' approach of Glaser and Strauss (1967). These authors argued that the researcher should be primarily concerned with the discovery of theory directly from field data. Although they recognised the usefulness of existing theory, for example to provide conceptual categories for field research, they emphasised the primacy of constructing theory from the observed field data. In the specific domain of IS research, Orlikowski (1993) describes the use of grounded theory as the basis of her interpretive case studies on the adoption and use of CASE tools.

With reference to the three categories of theoretical use discussed earlier, Glaser and Strauss would play down the first use of theory as an initial guide to data collection, and would emphasise the latter two uses as part of the iterative research process and as a final product of the work. Indeed, Glaser and Strauss warned against the first use of theory in rather strong terms, and cautioned the researcher against doing too full a literature search before starting work:

... carefully to cover 'all' the literature before commencing research increases the probability of brutally destroying one's potentialities as a theorist. (p. 253)

This author would not go so far. It is possible to access existing knowledge of theory in a particular subject domain without being trapped in the view that it represents final truth in that area. Glaser and Strauss's warnings are valuable for reflection, but they surely tend towards approaches which risk ignoring existing work.

An interesting discussion of the above issues is given in a recent book on new strategies in social research (Layder, 1993). Layder argues that researchers can, and must, draw on general theories and employ them in empirical research. He accepts the positive aspects of grounded theory and its emphasis on learning from field data, but argues that:

... the grounded theory approach must break away from its primary focus on micro phenomena. The very fixity of this concentration is a factor which prevents grounded theory from attending to historical matters of macro structure as a means of enriching ... research on micro phenomena. (p. 68)

An illustration of Layder's views translated to the IS domain is that research on micro phenomena of IS development and use can, and should, be informed by more general macro theories on the nature of organizations and social processes within them.

Conduct of empirical work

This section is focused on the conduct of empirical work for interpretive case studies, and three sets of issues have been selected for discussion, involving the role of the researcher, interviewing techniques, and reporting methods. This selection reflects the importance of these issues to the interpretive IS researcher. Mumford (1985) provides some useful advice to the IS researcher on other empirical issues such as the choice of research topic, collaboration with in-company personnel, and confidentiality.

Role of the researcher
Interpretive researchers are attempting the difficult task of accessing other people's interpretations, filtering them through their own conceptual apparatus, and feeding a version of events back to others, including in some cases both their interviewees and other audiences. In carrying out this work, it is important that interpretive researchers have a view of their own role in this complex human process. Two different roles can be identified, namely that of the outside observer and that of the involved researcher, through participant observation or action research. From an interpretive perspective, neither of these roles should be viewed as that of an objective reporter, since the collection and analysis of data involves the researcher's own subjectivity. In addition, and particularly with reference to in-depth case studies carried out over a period of time, researchers inevitably influence the interpretations of those people who are being researched, a process referred to as the 'double hermeneutic' by Giddens (1984). So, even if researchers view themselves as outside observers, they are in some sense conducting action research by influencing what is happening in the domain of action, if only by the sharing of concepts and interpretations with the personnel in the field site.

Despite the above qualification, the 'outside observer' role preserves more distance from the personnel in the field organizations. The latter will tend to view the researcher not as one of themselves, but as an outsider. The merit of this approach is that the researcher is seen as not having a direct personal stake in various interpretations and outcomes, and thus personnel will often be relatively frank in expressing their views, provided a rapport of trust can be established. The main disadvantage of this role is that the outside researcher will not be present on many occasions, and will not get a direct sense of the field organization from the inside. In addition, the researcher may sometimes be debarred from access to certain data and issues which are regarded as too confidential or sensitive to be shared with outsiders.

The role of participant observer or action researcher involves the researcher being a member of the field group or organization, or at least becoming a temporary member for some period of time. The merits of this are that the participant observer will get an inside view, and will not normally be debarred from confidential or sensitive issues. On the other hand, the involved researcher will be perceived as having a direct personal stake in various views and activities, and other personnel may be more guarded in their expressed interpretations as a consequence. In addition, unless participant observers or action researchers hide their research motives, which could be considered an unethical position (Mumford, 1985), they will still not be regarded as normal employees and thus not total insiders. A final problem with the role of involved researcher is the extreme difficulty of reporting the part one has played in the various matters under considera-

tion. Self-reporting faces the twin dangers of over-modesty and self-aggrandisement, and it is particularly difficult to steer a middle path between these two extremes.

What advice can be given then on the choice of roles? In the view of this author, the choice should be consciously made by the researcher dependent on the assessment of the above merits and demerits in each particular case. For example, Nandhakumar (1993) argued that his study of the design and development processes of an executive information system was enhanced by his role as a participant observer, since it was possible for him to be involved in the day-to-day happenings of the design team from the viewpoint of an insider, in a way which would not have been possible for an outside observer. Whatever the decision made by the individual researcher, it is essential that the choice is made in an explicit and reflective way, and that the reasons are given when reporting the results of the research.

Evidence from interviews

Yin (1989) argues that evidence for case studies may come from six sources: documents, archival records, interviews, direct observation, participant observation, and physical artifacts. However, with respect to interpretive case studies as an outside observer, it can be argued that interviews are the primary data source, since it is through this method that the researcher can best access the interpretations that participants have regarding the actions and events which have or are taking place, and the views and aspirations of themselves and other participants. Even in the case of interpretive case studies being carried out as a participant observer or action researcher, it can be argued that interviews are still an important data source, since they enable researchers to step back and examine the interpretations of their fellow participants in some detail.

With respect to interviewing style, this will vary between individuals, depending on personality, but one key issue for all interviewers is the balance which should be adopted by them between excessive passivity and over-direction. If the interviewer directs the interview too closely, and refuses to allow interviewees to express their own views except in response to questions that are tightly controlled by the researcher, then the data obtained will lose much of the richness of interpretation which is the raw material of sensitive interpretive studies. However, a researcher can err too far the other way. If the researcher is too passive, for example either by not prompting with questions which follow some new direction taken by the interviewee or by not offering his or her own ideas on some particular issue, a number of negative consequences can result. The interviewees may conclude that the researchers are either not interested in their views and/or that the researchers have no views of their own on the subjects of investigation. This latter consequence can result in IS interviewees, for example, doubting the professional competence of the researchers in the IS domain, and future collaboration with the research project becomes jeopardised.

A second important issue in interviewing concerns reporting media, since it is vital in an interpretive study to 'capture' people's interpretations in as effective way as possible, while at the same time conducting the normal social interchanges of the interview. One approach is to tape-record all research interviews. The advantage of this is that it provides a full description of what was said, whereas note-taking is necessarily partial. The main disadvantage is that, in the case of confidential or sensitive material, the respondent may be seriously inhibited by the presence of the machine. A second disadvantage of tape-recording as the sole medium is the time that needs to be spent in either transcribing the tape recording or extracting a set of useful data from it. The main alternative to tape-recording is to make rough but extensive notes during interviews, and to write them up in full as soon as possible after the interview. Again, with respect to advice to the researcher, individual circumstances need to be considered. Note-taking supplemented by tape-recording where appropriate is one sensible approach. Tape-recording may be considered appropriate as a supplement in cases of relatively non-confidential material, particularly where the interview contains a large amount of relatively 'hard' data which it would be difficult to capture by note-taking alone.

This sub-section has dealt with interviewing technique, but it is important to emphasise that good technique is a necessary but not a sufficient condition for good interviewing. Access to people's thoughts, views and aspirations requires good social skills and personal sensitivity on the part of the researcher, and these are less easily acquired than matters of technique. Zuboff (1988) described her interview approach as involving a 'non-judgemental form of listening'. Researchers should be constantly critical with respect to their own performance in this area, and one approach is to carry out interviews in pairs and subsequently to undertake a critique of each other's style and sensitivity.

Reporting methods

The issue of how to report field work is important in all research, but it can be argued that it is particularly critical in interpretive case studies. Interpretive researchers are not saying to the reader that they are reporting facts; instead, they are reporting their interpretations of other people's interpretations. It is thus vital, in order to establish some credibility to the

reader, that they describe in some detail how they have arrived at their 'results'. Reporting on 'soft' human issues is not an excuse for sloppiness.

So what should be reported in an interpretive case study? As a minimum, reporting on the collection of field data should include details of the research sites chosen, the reasons for this choice, the number of people who were interviewed, what hierarchical or professional positions they occupied, what other data sources were used, and over what period the research was conducted. With respect to data analysis, reporting should include how the field interviews and other data were recorded, how they were analysed and how the iterative process between field data and theory took place and evolved over time. Orlikowski (1993) provides a good example of careful reporting on the above topics.

Before leaving the topic of reporting methods, one further caveat is worth mentioning. Van Maanen (1989) reminds us that establishing validity in the eyes of a reader is part of the art of persuasion, and is as much a matter of rhetorical style and flair as it is of accuracy and care in matters of theory and method. In other words, care in reporting is important, but is not sufficient, and Van Maanen suggests that the researcher must try to persuade by 'presenting a coherent point of view told with grace, wit and felicity' (p. 32).

Generalizations from interpretive research

A critical issue for researchers concerns the generalizability of the results from their work, and Yin (1989) notes that this issue is often raised with respect to case studies:

'How can you generalize from a single case study?' is a frequently heard question .... The short answer is that case studies ... are generalizable to theoretical propositions ... (p. 21).

We will extend Yin's answer in this section to four types of generalization from interpretive case studies: the development of concepts, the generation of theory, the drawing of specific implications, and the contribution of rich insight. However, before discussing each of these generalizations in more detail, a short introduction is necessary on the nature of theorising in the social sciences, viewed from an interpretive stance.

Bhaskar (1979) describes the scientific process in the natural sciences as involving three phases in which phenomena are identified, explanations for the phenomena are constructed and empirically tested, and the generative mechanisms at work are described. Bhaskar argues that the human or social sciences can be tackled using a similar methodology, but there are differences in that social structures do not exist independently of the actions and conceptions of the human agents in

them, and the generative mechanisms of such structures are not space-time invariant. Thus, generative mechanisms identified for phenomena in the social sciences should be viewed as 'tendencies', which are valuable in explanations of past data but are not wholly predictive for future situations. The generalizations which we discuss below should, therefore, be seen as explanations of particular phenomena derived from empirical interpretive research in specific IS settings, which may be valuable in the future in other organizations and contexts.

We will now illustrate each of the four types of generalizations using specific examples, although it should be noted that the four types are not mutually exclusive categories. A summary of these examples is given in Table 3.

The first type of generalization concerns concepts. Zuboff (1988) used her interpretive case studies of IT use in US organizations to develop the 'informate' concept, which has been widely quoted in the IS literature and beyond. She introduced this concept as follows:

Thus, information technology, even when it is applied to automatically reproduce a finite activity, is not mute. It not only imposes information (in the form of programmed instructions) but also produces information ... information technology supersedes the traditional logic of automation. The word that I have coined to describe this unique capacity is *informate*. Activities, events, and objects are translated into and made visible by information when a technology *informates* as well as *automates*. (pp. 9–10)

A single concept such as 'informate' can be part of a broader network or an integrated clustering of concepts, propositions and world-views which form theories in social science (Layder, 1993). As an illustration in the IS field, it was noted earlier that Orlikowski and Robey (1991) drew on their empirical

Table 3 Examples of generalizations from IS case studies.

Type of generalization	Interpretive IS case study
Development of concepts	Automate – Zuboff (1988)
Generation of theory	Theory of organizational consequences of IT – Orlikowski & Robey (1991), Jones & Nandhakumar (1993)
Drawing of specific implications	Relationship between design and development and business strategy – Walsham & Waema (1994)
Contribution of rich insight	Limits of machine intelligence; differences between plans and practical actions; need for more thoughtful machine design – Suchman (1987)

work in IS to construct a theoretical framework concerned with the organizational consequences of information technology. They argued that their framework could be used to guide studies in two main areas of information systems research, namely systems development and the organizational consequences of using IT. Jones and Nandhakumar (1993) describe the application of the framework to the analysis of an interpretive case study of the executive information system development process in a large manufacturing company. They conclude that the framework was valuable to their work, but go on to suggest some areas for further theoretical development. The two papers taken together provide a good illustration of theory generation and development based on interpretive IS case studies.

A third type of generalization from interpretive case studies involves specific implications in particular domains of action. Walsham and Waema (1994) draw a number of such implications based on an in-depth case study of the development of IS in a financial services company over an eight-year period. One implication concerns the relationship between the design and development process and business strategy:

> An *ad hoc* methodological approach to the development of computer-based information systems, accompanied by a clear business focus, can lead to rapid systems development, but the price paid for such an approach can be inflexibility and a lack of adequate integration. Design and development drawing heavily on formalized methods can be slow and geared to 'systems for today', if the development proceeds at a time when the business vision and related IS strategy remain unclear. (p. 171)

The quotation above uses verbs such as 'can' rather than 'will' in line with the earlier discussion of generalizations as tendencies rather than predictions. The implication provided a good description of a 'generative mechanism' in the case study which was investigated, and it may prove a useful insight for related work in other organizations and contexts.

The final category of generalization which we will consider here is that of 'rich insight' from interpretive case studies. This phrase is designed to capture insights from the reading of reports and results from case studies that are not easily categorised as concepts, theories, or specific implications. For example, the book by Suchman (1987) discusses the problem of human–machine communication based on an interpretive case study of the use of a particular copying

machine. She develops concepts such as 'plans' and 'situated actions', various theories regarding human–machine interaction, and specific implications in domains such as artificial intelligence. However, this reader gained more from the book than is captured by these categories, since Suchman provided rich insight on a wide range of topics, including the limits of machine intelligence, the inherent differences between plans and practical actions, and the need for more thoughtful machine design.

A further illustration of the above point follows from noting that the selection of the 'informate' concept from Zuboff's book does not do justice to the richness of the insights which many readers have gained from her work. This can be judged by the way it has been widely quoted on topics such as the changing nature of work in contemporary society, and the need to empower workers in the information age in order to make fuller use of their human capabilities. We should not be misled into too narrow a view of the generalizations which readers can gain from studying the reports and results from interpretive case studies, and the category of 'rich insight' attempts to describe these broader and more diffuse implications.

Conclusion

A number of writers in the IS field have already demonstrated that interpretive case studies, if carried out and written up carefully, can make a valuable contribution to both IS theory and practice. However, the volume and range of such studies are relatively limited at the present time. It can be argued that there is a need for much more work from an interpretive stance in the future, since human interpretations concerning computer-based information systems are of central importance to the practice of IS, and thus to the investigations carried out by IS researchers.

This paper has aimed to contribute to the future development of the interpretive school of IS research by providing discussion and guidance on a range of issues. These were concerned both with the philosophical and theoretical nature of interpretive studies in the IS field, and with methods of conducting and reporting such work. The paper has aimed to provide a useful reference point on these issues, and more generally to encourage IS case study researchers to reflect on the basis, conduct and reporting of their work.

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