Interpretivism and the Pursuit of Research Legitimisation: An Integrated Approach to Single Case Design

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Abstract: While interpretive research is recognised for its value in providing contextual depth, results are often criticised in terms of validity, reliability and generalizability, referred to collectively as research legitimisation. This paper explores the criticisms levied on interpretive case studies and presents a research design that seeks to address these criticisms. The paper describes the research template developed by the author and applies it to a longitudinal case study carried out on a micro firm in the Republic of Ireland. Following some detailed evaluation and analysis the author concludes that legitimisation of an interpretative case study is improved when an integrative approach involving the combination of specific research techniques to relevant and appropriate standards is adopted.

Keywords: Interpretive case study, qualitative research, legitimisation

1. Introduction

Interpretivists believe that reality is not objectively determined, but is socially constructed (Husserl, 1965). The underlying assumption is that by placing people in their social contexts, there is greater opportunity to understand the perceptions they have of their own activities (Hussey & Hussey, 1997). By its nature, interpretivism promotes the value of qualitative data in pursuit of knowledge (Kaplan and Maxwell, 1994). In essence, this research paradigm is concerned with the uniqueness of a particular situation, contributing to the underlying pursuit of contextual depth (Myers, 1997). However, while interpretive research is recognised for its value in providing contextual depth, results are often criticised in terms of validity, reliability and the ability to generalise, referred to collectively as research legitimisation. These concerns are amplified in the single case scenario (Eisenhardt, 1989; Perry, 1998). In reality, all these issues are interdependent and reflect on the layered complexity of the phenomenon at hand:

- **Reliability** refers to the consistency or stability of a measure. Denzin (1970) states that multiple and independent methods should, if reaching the same conclusions, have greater reliability than a single methodological approach to a problem. This combination of methodologies in the study of the same phenomenon is known as triangulation. From an interpretive perspective, Eisenhardt (1989) recommends that the researcher start with a broad research question, establish systematic data collection and ensure case access to create strong triangulated measures. Qualitative research findings can be strengthened in this way by combining participant observation with interviews and documentary sources (Hammersley and Atkinson, 1983) in a single case.

- **Validity**: In terms of validation, qualitative research depends on the presentation of solid descriptive data, so that the researcher leads the reader to an understanding of the meaning of the experience under study (Stake, 1995). In essence, validation is an interpretive understanding of truth (Angen, 2000). Thus, triangulation is not a tool or a strategy of validation, but an alternative to validation in this context (Denzin & Lincoln, 2003). In a single case, data triangulation is particularly important in order to fortify validation in the absence of cross case comparison. Remenyi et al (1998) suggest using multiple data sources, establishing an identifiable chain of evidence, and having a draft reviewed by the key informants to strengthen construct validity in this regard.

- **Generalizability** refers to the extent to which the findings of the enquiry are more generally applicable outside the specifics of the situation studied (Robson, 2004). In qualitative terms, the research goal is to offer a case description (including data collection procedures) that would allow the reader to repeat the research process in another case (Kidder & Judd, 1986; Vaughan, 1992). Although a single case may not provide sufficient evidence to make robust generalisations, it can establish the existence of a phenomenon (Van Maanen, 1988), which is adequate for the purposes of exploratory research (Remenyi et al., 1998). Thus, a case can be generalizable to theoretical propositions (Yin, 1984), creating a distinction between

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analytical and statistical generalizability (Yin, 2003).

The remainder of this paper is broken into four. Section one presents a research design that seeks to address the criticisms levied on the single interpretive case study. Section two describes the research template developed by the author and applies it to a longitudinal case study carried out on a micro firm in the Republic of Ireland. The concluding sections offer a perspective on interpretive data analysis and single case design evaluation. Following some detailed analysis, the author concludes that legitimisation of an interpretive case study is improved when an integrative approach involving the combination of specific research techniques to relevant and appropriate standards is adopted.

2. Case design

A research design is “an action plan for getting from here to there, where ‘here’ is the initial set of questions and ‘there’ are the set of answers” (Yin, 1994:19). In this study, the underlying research question sought to assess the learning impact of a critical incident on employees (both individually and collectively) in a micro enterprise. The longitudinal interpretive case was deemed the most appropriate method to facilitate a valid response to the proposed research question. For clarity, a case study can be described as the investigation of a contemporary phenomenon within a real-life context (Yin, 2003), while in-depth case studies are often the vehicle for interpretive investigations, where research involves frequent visits to the field site over an extended period of time (Walsham, 2002). Justification for the suitability of the chosen research instrument is founded on Hill and McGowan’s (1999) work which suggests that small company research may be best done using a qualitative approach that includes participant observation, case studies, in-depth interviewing and the use of documentation. Considering learning is not a single event, but rather a phenomenon to be studied in past, present and future terms, observational evidence offered the most appropriate means of assessing the level of adjustment in this context (Sutton & Callahan, 1987). By applying this research method, causal assessment could be established through depth and time series analysis (Kidder, 1981; Kratovitchill, 1978) rather than as a single point in time, offering the greatest potential for legitimisation of the research results.

Having established the primary research question, the resultant objectives and the research design ethos, the researcher prepared for data collection by developing a research protocol as recommended by Yin (2003). This research blueprint focused on what questions to study, what data were relevant, what data to collect, and how to analyse the results. It also encompasses the management criteria relating to the case, and the researcher’s role as the primary research instrument (Trauth, 2001). The protocol allows for a chain of evidence, ensuring increased reliability and reduced misperception at every stage of the research process:

Table 1: Research protocol

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research question</td>
<td>Assess the learning impact of a critical incident on employees (both individually and collectively) in a micro enterprise.</td>
</tr>
<tr>
<td>Research Method</td>
<td>A longitudinal case study</td>
</tr>
<tr>
<td>Critical Incident</td>
<td>Information System implementation in a micro firm</td>
</tr>
<tr>
<td>Case Selection Process</td>
<td>Environmental Criteria: Micro firm influenced by dominant supplier IS requirements and industry regulation. Internal Criteria: Micro firm, whose owner is in the pivotal managerial role as primary employee influencer and has an imminenent/recent, IS implementation within the firm.</td>
</tr>
<tr>
<td>Case Access</td>
<td>Identify cases fulfilling the criteria in the research protocol.</td>
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<tr>
<td></td>
<td>Negotiate full access to the case</td>
</tr>
<tr>
<td></td>
<td>Meet to establish researcher/ employee rapport prior to the in-store IS implementation.</td>
</tr>
<tr>
<td>Research Instrument</td>
<td>Researcher as the primary research instrument in the application of research methods</td>
</tr>
<tr>
<td>Boundary device</td>
<td>Micro firm learning framework</td>
</tr>
<tr>
<td>Research Techniques</td>
<td>On-site observation and semi-structured interviews supported by reflective diaries independently generated by the case business owner and researcher, informal conversations, completion of learning questionnaires and focus groups, and the perusal of internal documentary evidence over a three year period.</td>
</tr>
<tr>
<td>Data Management</td>
<td>Audit trail of data, collection methods and process, including control of the research instrument’s influence on the studied environment, specifically the balance of observation/participatory action.</td>
</tr>
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Adapted from Klein & Myers, 1999:80
Following an initial literature review, an IS implementation was selected as an appropriate critical incident in order to investigate its anticipated impact on employee learning, an impending outcome supported by Zuboff’s (1988:13) findings that “people who are working with technology for the first time are ripe with questions and insights regarding the distinct qualities of their experience”. As longitudinal case studies can offer a broader understanding of the ways in which people adapt technological systems for their own purposes, particularly over time, a three-year case duration was set in order to determine the causality links more explicitly in this context. Subsequently, the setting of case criteria offered the contextual landscape required to successfully test the research question and internal and external criteria were specified to assist in the identification of acceptable case candidates in this regard.

In order to successfully perform the case study, full and complete company access was vital. In this context, “random selection is neither necessary, nor even preferable” (Eisenhardt, 1989:537). Thus, following the identification of suitable cases, access was negotiated via personal contact with the owner. While negotiation took some time before access was granted, this process was invaluable in ensuring both parties were satisfied with the research terms of reference. Of particular importance was a mutual understanding about the amount of access being requested and the length of the study in elapsed time: three years is a significant investment, not only on the part of the researcher but also in terms of the case participants. In addition, a clear appreciation of the research objectives and the direct contribution in tangible and intangible terms that the research could make to the studied case should clarify boundaries relating to the research before it commences.

An overriding concern of the author’s was that the mere collection of in-depth case data does not provide theory concepts in and of themselves. This point is articulated by Zuboff (1988) who states that while observation could be considered first order constructions, researchers rely on good theory and insightful analysis for second order concepts in order to induce theory. Miles & Huberman’s (1994) suggest that conceptual frameworks can be used as boundary devices in this context, while Janesick (2002) recommends the development of working models and theories in action that explain the behaviour under study. Therefore, variables were identified early in the case and incorporated into a loose conceptual framework to focus the case investigation. Notably, Crossan et al. (1999) suggest that these tools can help define context and promote the move toward theory in the employee learning research milieu. Thus a framework’s latent legitimacy value is significant, particularly if the underlying case purpose is to provide a basis for theoretical replication.

3. Data collection template

A clear schedule of data collection activities was discussed with the micro firm owner at this point in the research process. The author also outlined a schedule of site visits, detailing each visit’s likely duration with the micro firm owner. A variety of data collection techniques allowed for a greater possibility of anomalies to be noted, and sought to accommodate limitations relating to individual techniques (Gallivan, 1997):

Table 2: Data collection activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Time line</th>
</tr>
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<tbody>
<tr>
<td>Observation</td>
<td>Sporadic on-site observation over a three-year period (see details below)</td>
<td>10/01 to 09/04</td>
</tr>
<tr>
<td>Literature review</td>
<td>Evolutionary process completed in tandem with the case study.</td>
<td>2002 to 2004</td>
</tr>
<tr>
<td>In-depth interviews/ conversations</td>
<td>Owner interviews Shop floor manager conversations Employee focus groups</td>
<td>6/8 week intervals QuarterAnnual</td>
</tr>
<tr>
<td>Diary maintenance</td>
<td>Researcher reflective diary Case owner reflective diary</td>
<td>10/01 to 09/04</td>
</tr>
<tr>
<td>Internal Document review</td>
<td>Complete review at the start of 2002, &amp; subsequent review at the end of 2002, 2003 and June 2004.</td>
<td>01/02 to 06/04</td>
</tr>
<tr>
<td>Industry review</td>
<td>Complete review in 2004</td>
<td>2004</td>
</tr>
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- **Observation**: In order to comprehend the employee learning impact, it was deemed important to observe the micro firm and its employees over an extended period. One of the noticeable benefits of longitudinal observation was that general relations were often discovered in vivo, an advantage alluded to by Glaser & Strauss (1967). Thus, the longer the period spent in the field, the better (Gomm et al., 2002) in order to gain true insight into the workings of the micro enterprise in the context of the
research question. This point is particularly compelling in the single case scenario. It should be noted that longitudinal cases, even those that require periodic rather than continuous involvement are labour intensive (Mumford, 2001) and the basic ethos behind the interpretive epistemology necessitates the researcher's direct involvement in all stages of the research process in order to allow the researcher the level of empathy required.

With reference to this case, the researcher was present for an initial two week period, encompassing the week directly preceding and the week directly following the IS implementation. The IS installation and upgrade process took eight to twelve hours daily, during which time the researcher was present for observation purposes, taking detailed field notes as required. Each 'working' day was followed by evenings documenting and interpreting the day's observations in order to establish new lines of inquiry for the following day's work. Subsequent two-day observation sessions at pre-defined six to eight-week intervals in year one and two, and at eight to ten-week intervals in year three allowed the researcher to document employee progress over a three year period providing substantial insight into organisational and social perspectives in the studied case over time. Setting the balance between participation and observation can be difficult. In this research, observer as participant (sometimes identified as interrupted involvement) was deemed the most beneficial. This decision was based on the fact that complete detachment would not create the necessary subject trust to realise the research objectives while complete participation could create conflict of interest. In terms of temporal interconnection, the goal was to establish learning in past, present and future terms. The underlying assumption is that learning causation is neither linear nor singular [founded on Pettigrew's (1990) argument] but rather continual in the context of ongoing change.

Finally, observation invariably raises ethical dilemmas, particularly when conducted in a covert way. This dilemma was considered by the researcher prior to commencing the study and was discussed with the micro business owner at length. It was agreed that the researcher would be introduced, as a management consultant to the case employees, employed to establish the best means of optimising IS operation within the case organisation. The researcher's particular interest in learning was explicit, having been raised at several staff meetings and documented in relevant meeting minutes throughout the observation period. Issues of privacy, confidentiality and the relationship between individual cost and scientific benefit were also discussed with both the business owner and the researcher's peers in order to establish an appropriate balance in this regard. The primary tool used for dealing with risk was an informed consent form. The owner was provided with a simple written statement detailing the study's research objectives, potential benefits and risks, rights to confidentiality, and termination procedures, in acknowledgement of relevant ethical aspects of the research process.

- **Literature Review**: A thorough literature review combined with initial case observations provided a number of potential dependent variables in the context of micro business IS adoption and the resultant impact on employee learning. These findings provided the basis for relevant environmental, organisational and individual employee variables when developing the learning framework.

- **Interviews**: Personal in-depth interviews were carried out with the case owner and Shop Floor Manager at pre-defined intervals throughout the case study. As the case sought to establish protocol, the interview schedule was revised as required based on participant feedback and researcher observation (as suggested by Glesne & Peshkin, 1992). These interviews were not recorded or directly transcribed as requested by the case participants, however, extensive notes were taken during the meeting and written up immediately (as recommended by Zuboff, 1988) to ensure optimum recall regarding the interview content. The goal was to 'document carefully the practical contours of interaction in the varied circumstances in which they unfolded' (Gubrium & Holstein, 2003: 229). It should be noted that recording the meaning of what is being said rather than the exact words of the respondent is more important in this context (Perry, 1998; Stake, 1995). These interviews were enhanced by periodic informal face-to-face conversations with each employee when the researcher was
on-site, and supplemented by annual group sessions conducted by the author. These interactions allowed employees to voice their individual opinions regarding the IS implementation and its impact on their work.

- **Diary Maintenance**: To achieve dialogical reasoning (Klein and Myers, 1999), researchers must confront the preconceptions that guided the original research design (Janesick, 2002) with the data that emerge through the research process. Underlying philosophical assumptions should be transparent in this regard. Specifically, that the researcher is predisposed to factors of perception and prior theories, as well as prior expert knowledge (Yin, 1994), all of which influence what we take to be factual observations. Geertz (1973: 9) articulated this issue as thus: “what we call data is really our own constructions of other people's constructions of what they and their compatriots are up to”. To help overcome these issues, Trauth (1997: 241) recommends, “Self-conscious questioning of [the researchers] own assumptions [to] bring into consciousness the emotional and intellectual reactions to experiences and observations”. In the case study, diaries were used as a supplementary research tool valuable in the pursuit of reliable research by providing an essential audit trail in the research context. Several writers advocate the maintenance of a reflective diary as a rigorous documentary tool in this context (for example: Glaser & Strauss, 1967; Janesick, 2002; Stake, 1995). Thus, the researcher maintained a reflective diary separate to the non-reflective recording of observations throughout the case study. This amounted to a personal journal of the research process, specifically the recording of emergent ideas and results, reflections on personal and case participant learning, and an ongoing examination of personal attitude that proved invaluable when analysing the case data. Separately, the micro firm owner maintained an IS related diary throughout the case duration. Here, the diary provided a simple record of events and sought to assist in the identification of certain activities and the frequency of occurrence. Unexpectedly, the owner diary offered new perspectives that were not articulated in either the interview or the observation process.

- **Internal document review**: Having agreed access with the owner, the author carried out a thorough review of the case site’s internal documentation including internal quality manuals, IS training documentation and user manuals, 2002 to 2004 business diaries, IS vendor correspondence, wholesale supplier literature, and a review of all historic staff meeting file notes and notes included by the owner in the staff's monthly pay packet. Each record provided valuable data relating to the culture of the organisation and its relationship with the IS vendor and dominant industry suppliers. They also offered supplementary knowledge relating to employee learning focus over time.

- **Industry review**: Separate to the case site data collection, the researcher interviewed an industry expert to establish the case's external environment in terms of political, legal and industry pressures placed on a micro firm operating within the sector. Three in-depth interviews were carried out at the start of the case, each lasting approximately two hours, in order to establish relevant criteria relating to the environmental aspect of the learning framework. A thorough review of all relevant public documentation relating to the sector was also completed in this context. Documentary evidence sought to ‘corroborate and augment evidence from other sources’, (Yin, 2003:81). In essence, documentary evidence provides context, particularly in a complex environment, creating greater validity and reliability of the research and the resultant framework.

4. **Data analysis and interpretation**

The philosophical links remain at the data analysis stage of the research process. Considering this research's interpretive stance, the ultimate goal is to describe the context in which events occur. The analytical goal is to make sense of the whole [situation] and the relationship between people, the organisation and technology (Myers & Avison, 2002). Therefore, the underlying philosophy dictates an iterative process of data collection and data analysis (Eisenhardt, 1989; Walsham, 2002), which are tested and modified through cycles of additional data collection and analysis until an adequately coherent interpretation is reached (Glaser & Strauss, 1967). Consequently, the researcher sought to overcome the temptation to convert qualitative data into numbers once it had been collected, in order to preserve the richness of the data and give a holistic view of the research context. While interpretive research does not subscribe to the idea that a pre-
d) In step four, the researcher abstracts the essences from the text. Essences are wholly subjective gestals of what is learned from studying the phenomenon, and requires creativity, intuition and reflection. Thus, analysis depends on an investigator’s own style of rigorous thinking (Yin, 2003). The pre-mentioned reflective diary proved invaluable in this context, not only in terms of the resultant content, but also in the process of reflective thought required to complete the diary task. Finally, evidence is presented in a narrative form, supported by evidence from the statements and behaviours recorded in field notes, diaries and interviews (a process supported by Janesick, 2002; and Kidder & Judd, 1986). Internal validity is established where several pieces of information from the same case point to a theoretical proposition (Stake, 1995) or empirical assertion (Janesick, 2002). Therefore, insights are validated with rich descriptions, direct quotes from participants, and practitioner review of the interpretation (Lacity & Hirschheim, 1993) in order to build the thick description (Geertz, 1973) sought under this analytical ethos.

With reference to the research report, it can be linear-analytic, comparative, chronological or theory-inducing (Yin, 1994) dependent on the research philosophy and underlying assumptions adopted. In this instance, chronological reporting provided the greatest insight into the evolving impact of the critical incident on learning over the case duration. Specifically, a chronological record over a prolonged period should offer greater insight into learning as an evolving phenomenon. As this action is founded in the intentional research process detailed above, the researcher planned for the final report creation from the start of the investigation (as advised by Yin, 2003). This iterative approach to data collection and analysis created an important cycle of discovery within the case. Finally, it was important to establish a strategy whereby the micro firm could gain from the research without impeding on the research reliability and validity from an academic standpoint. Academic rigour had to be acknowledged in this context. Thus, once documented, the micro firm owner reviewed a draft copy of the case study to ensure the document contents were complete and accurate from her perspective. It was also agreed that the author would perform an IS audit as part of the observation process and produce a feedback report on the impact of the learning plans and training programmes on each employee from an individual and collective perspective in this context.

5. Design evaluation

The chain of evidence provided by the established research protocol, the subsequent research template and the integrated application of appropriate research techniques discussed in the preceding sections of this paper sought to legitimise the research results throughout the duration of the case:
As previously stated, complete case access was paramount and its importance cannot be over-emphasised in the context of this paper. The researcher’s presence at the IS implementation and subsequent upgrades proved vital as it offered contextual knowledge relating to employee learning. Specifically, the researcher observed and documented the individual employees’ initial reaction to the information system during the installation and directly following its implementation. This initial investigation sought to identify the relationships and interdependencies between individual learning and collective learning within the micro enterprise, in the context of the external environmental influences and how these elements shape such relationships; culminating in the creation of the learning framework. Having established that the IS implementation required significant adjustment in the employee’s knowledge, observational evidence, combined with internal interviews, focus groups and informal conversations, offered the most appropriate means of assessing the level of employee adjustment in context. The value of multiple perspectives over the initial observation period established broad themes and provided for greater data reliability when analysing the case results.

Building staff/researcher empathy proved valuable in terms of mutual comfort with individual employees during the study. The ambition here was to get as close as possible to the world of the micro firm’s decision catalyst and IS implementation and to interpret this world and its problems from the inside in order to describe both the unique and typical experiences and events within this environment as bases for theory (as argued by Dalton, 1959). Observed data was documented throughout the case study and periodically checked by participants and research colleagues to reinforce objective reporting. The goal was rigorous and systematic data collection, without excluding serendipitous information (Kaplan & Maxwell, 1994).

The complementary data collection techniques used throughout the case proved particularly valuable in the pursuit of research legitimisation. Reviewing the firm’s internal documentation provided greater insight into the firm’s internal culture. It also afforded an appreciation of the micro firm’s ongoing relationship with both the IS vendor and dominant industry suppliers, while the industry expert interviews gave a holistic view of the micro firm’s external business environment.
Maintaining reflective diaries as a complimentary research tool throughout the research process offered an additional audit trail in relation to theme development. Specifically, the researcher’s reflective diary acknowledged and identified personal reference frames on a continuous basis while the owner’s diary offered individual perspective without the imposition of the researcher’s own reference frame during data collection. Lastly, informal conversations with individual staff members and focus group discussions sought to identify individual employee’s interpretation of the IS implementation and subsequent learning needs, rather than being restricted to those of the business owner alone. In this context, the principle of multiple interpretations is of heuristic value because it leads to probing beneath the surface; a benefit alluded to by Hussey & Hussey (1997) and Kaplan & Maxwell (1994) in the introduction.

6. Conclusion

This case study sought to establish a typical case supported by a detailed research protocol (Yin, 1994). The underlying purpose of the case design was to provide a basis for theoretical replication alluded to by Yin (1984). The multiple research techniques applied in this case offered reliability via triangulated results. Finally, the pre-established data collection template provided for a standard approach to data collection and analysis in pursuit of research validation. As a note of caution, this form of research is not just a matter of observing the subject matter and analysing the results at a distance at some later date. It involves observing, participating, talking, checking, understanding and making interpretations over an extended timeframe, all of which are required if the observer is to share and understand important parts of the employee’s experience. In addition, case participants can be seen as interpreters and analysts in their own right, whose horizon is changed by the researcher’s interaction with them (Klein and Myers, 1999). It is inevitable that as the researcher establishes mutual comfort over time, and that they interact with the case subjects at a social as well as professional level. In consequence, reporting on the case participants impartially can prove to be a difficult task. Thus, pre-established standards in each aspect of the case design, protocol, data collection, analysis and interpretation provide for greater legitimisation of research outcomes in this regard.

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