Issues and Challenges in the Use of Template Analysis: Two Comparative Case Studies from the Field.

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Abstract: One of the most problematic issues for researchers who conduct qualitative research using semi-structured, unstructured interviews or story telling data collection methods is the analysis of large quantities of rich data. In the past this has often led to fairly unmethodical approaches to analysis which in turn has led to qualitative business and management research being seen as insubstantial and unworthy of consideration.

A relatively recent development in organisational research has been the application of Template Analysis to rich unstructured qualitative data following the primary data collection phase. Template Analysis appears to have emerged from the USA during the 1990s and academics familiar with the Grounded Theory approach to data analysis may see similarities in the techniques used. Nevertheless, it has gained credibility in the UK through the work of Nigel King and other colleagues researching in health and sociology related fields.

This paper provides an overview of the origins of Template Analysis and discusses how it has been used to structure qualitative data. It then goes on to examine through the two case studies how Template Analysis has been extended and used by the authors in two different research projects. In the first case study the research team worked within a Primary Care Trust in the North East of England on a project that explored the Diffusion of Innovation of clinical and administrative computer systems across General Practice within the Trust. Seventeen Trust members were interviewed for approximately one hour and this led to over 85000 words of rich data. The second project focused on the NHS Secondary Care sector and examined IT project management practice related to the development of integrated pathology computing systems across eight separate laboratories in the North of England. Eight senior managers were interviewed and this, combined with participant observation and over 3 years of document collection, also resulted in a large volume of rich textual material. The use of template analysis, combined with a critical success factors methodology, resulted in a novel approach for learning about current IT project management practices.

This paper critically examines these two case studies in terms of their particular research philosophy, epistemological approach and the lessons learnt from the techniques employed. The paper then provides a discussion of the principles and practicalities of template analysis and explores the benefits to the business and management research community at large.
Keywords: template analysis, qualitative, NHS, interview, information

1. Introduction

It can be seen increasingly in Business and Management research a growth in the use of qualitative methodologies and data collection methods. This often results in large volumes of textual material that must be analysed and interpreted. Text data may include field notes from participant observation, transcripts from semi-structured interviews, diaries and stories or narratives. Just as the researcher is required to construct an overall research design it is also necessary to develop an analytical strategy within the interpretive process so that the research is seen as substantial and worthy of consideration.

A relatively recent development in organisational research has been the application of Template Analysis to rich unstructured qualitative data following the primary data collection phase. It is the aim of this paper to consider the use of Template Analysis within the context of business and management qualitative research and illustrate it with reference to two Information and Communications Technology (ICT) research case studies. Both of these case studies used a more innovative approach than is suggested by Crabtree and Miller (1999) and King (2004) but still remain within the accepted Template Analysis framework. In the first case study the research team worked within a Primary Care Trust in the North East of England on a project that explored the Diffusion of Innovation of clinical and administrative computer systems across General Practice within the Trust. Seventeen Trust members were interviewed for approximately one hour and this led to over 85000 words of rich data. The second project focused on the NHS Secondary Care sector and examined IT project management practice related to the development of integrated pathology computing systems across eight separate laboratories in the North of England. Eight senior managers were interviewed and this, combined with participant observation and over 3 years of document collection, also resulted in a

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2. Origins of template analysis

Template analysis is a relatively recent development and appears to have emerged from more structured approaches such as Grounded Theory and Interpretative Phenomenological Analysis (IPA). King (2004) argues that although template analysis makes use of codes and coding of data it is not as prescriptive as Grounded Theory and is not wedded to its realist methodology. In fact it can be used within a range of epistemological positions and thus can be useful to a large number of researchers. However when template analysis is used within a broadly phenomenological approach it is very similar to IPA. The main difference between the two approaches are the use of 'a priori' codes in template analysis and the balance between within and across case analysis.

3. What is Template Analysis and how is it used?

A well accepted text on the early emergence of template analysis is that of Crabtree and Miller (1999). They go on to say:

> *"…researchers can develop codes only after some initial exploration of the data has taken place, using an immersion/ crystallisation or editing organising style. A common intermediate approach is when some initial codes are refined and modified during the analysis process." (Miller and Crabtreee, 1999:167)*

A more recent advocate of Template analysis is Nigel King (http://www.hud.ac.uk/hhs/research/templateanalysis/) whose work in this area is mainly based in healthcare similar to Crabtree and Miller (1999). The Template approach involves coding a large volume of text so that segments about an identified topic (the codes) can be assembled in one place to complete the interpretative process.

The complete analysis process of organising, connecting and corroborating/legitimizing involves:

- Creating a code manual/coding scheme
- Hand or computer coding the text
- Sorting segments to get all similar text in one place
- Reading the segments and making the connections that are subsequently corroborated and legitimised.

Another good source of understanding how codes are developed and then applied can be seen in King (2004) and Miles and Huberman (1994). King advocates one of three positions when starting out on the research:

- Have pre-define codes/ a priori codes based on the theoretical position of the research.

OR

- Develop codes after some initial exploration of the data.

OR

- Take a half way position – some initial codes (possibly from the interview questions?) and refinement after exploration of the data. It may depend on your epistemological position.

Once having established a high level coding scheme King (2004:260) goes on to describe through the use of case material the coding hierarchies e.g.

1. CASE BACKGROUND HISTORY
2. THE CONSULTATION
3. SERVICE CONTACT
4. POSSIBLE AREAS OF IMPROVEMENT

Within "The Consultation" there are various hierarchies/levels

2. THE CONSULTATION
    - 2.1. Presenting problem
    - 2.2. Treatment/management offered
        - 2.2.1.Prescription
        - 2.2.2.Advice
        - 2.2.3.Referral
    - 2.3. Factors influencing treatment
        - 2.3.1.Patient/GP interpersonal relationship
        - 2.3.2.The GP role
            - 2.3.2.1. GP perception of role
            - 2.3.2.2. GP workload

Each of the higher levels can be developed in a similar manner to "The Consultation". King (2004) also discusses parallel coding of segments of text whereby segments of text are classified within the same level. This is referred to later in this paper. In order to contextualise the template approach we will consider two different case studies in business and management research located within a healthcare setting. The intention is to provide insight into the application of the analytic approach.

4. Issues and challenges in case study one

During 2004/5 a Primary Care Trust in the North East of England took part in a pilot project to explore the diffusion of ICT innovation within their GP practices. This section of the paper focuses primarily upon the data collection aspect of this project and the analysis of the interviews conducted with stakeholders.

It is not our intention to provide a detailed discussion of the vast literature base that addresses the area of Diffusion of Innovation. Diffusion of innovation (DOI) research and practice originates from many diverse fields of study. These include sociology, anthropology, healthcare, medicine, social policy, psychology, strategic management, economics, marketing, entrepreneurship, organizational behaviour, research and development, and technology management. An innovation is not just an outcome but a process and is the effort to create purposeful, focused change in an enterprise's economic or social potential (Drucker 1985). It may be viewed as something that is new to an adopting organization but not necessarily new in its own right. Nevertheless, if the reader wishes to explore this subject further they could look at the following authors Rogers (1995); in the area of Information and Communication Technology DOI -Caldeira and Ward 2003; Cragg 2002; Grandon and Pearson 2004; Poon and Swatman 1999; Southern and Tilley 2000; Mustonen-Ollila and Lyytinen (2003)).

Initially a pilot site was selected for the first trial run of the data collection. This enabled the research design to be reviewed, assessed, and refined prior to expanding it across a wider range of respondents and organizations. The study was conducted between January and September 2004 and aided by a small university research grant.

The method of data collection for this study was that of the semi-structured interview. At each of the five research sites, tape recorded interviews were carried out with a core set of staff: a general practitioner (doctor), practice manager, and practice nurse – fifteen interviews in total. The interviews were based around a broad set of topic headings to guide the interviews but we tried as far as possible to allow the participants to lead the discussion. Research consent forms and information leaflets were provided in advance of the study.

Interviews took place at a time and place convenient to the respondent and ideally were limited to a maximum of 1 hour duration. All data has been made anonymous and all confidences respected. Transcripts (verbatim) were presented back for verification by each respondent. Wherever possible, the two researchers were present to enable consistency of the data collection approach and to enable peer reflexivity at a later date in terms of the data analysis and also the research process itself.

Defining the codes and creating the initial template: Template analysis normally starts with some predefined codes intended to help guide analysis. The first issue we faced was how we addressed our extensive NHS and Information Systems Management (ISM) knowledge and how this should be presented in

the template form for NHS staff. Secondly we needed to consider how extensive the initial template should be. King (2004) suggests that if you start with too many predefined codes, then the template might blinker analysis and prevent exploration of more pertinent issues. On the other hand, too few codes may lead to an overwhelming mass of rich and complex data.

Our approach and starting point was the letter sent out to the GP practices introducing the research topic and some of the government and department of health concerns. From these we constructed a template in a graphical format (see Figure 1). This took a period of time and reflection to ensure we agreed on the initial codes. The template was used as a prompt for the respondent and adapted for use if necessary. The key words have been derived from the research literature, NHS documentation related to ICT strategy initiatives, and the personal research experience of the researchers. This approach has a proven record of successful use in qualitative research in healthcare settings specifically investigating "soft" organizational issues (Clarke and Wilcockson 2001, 2002).

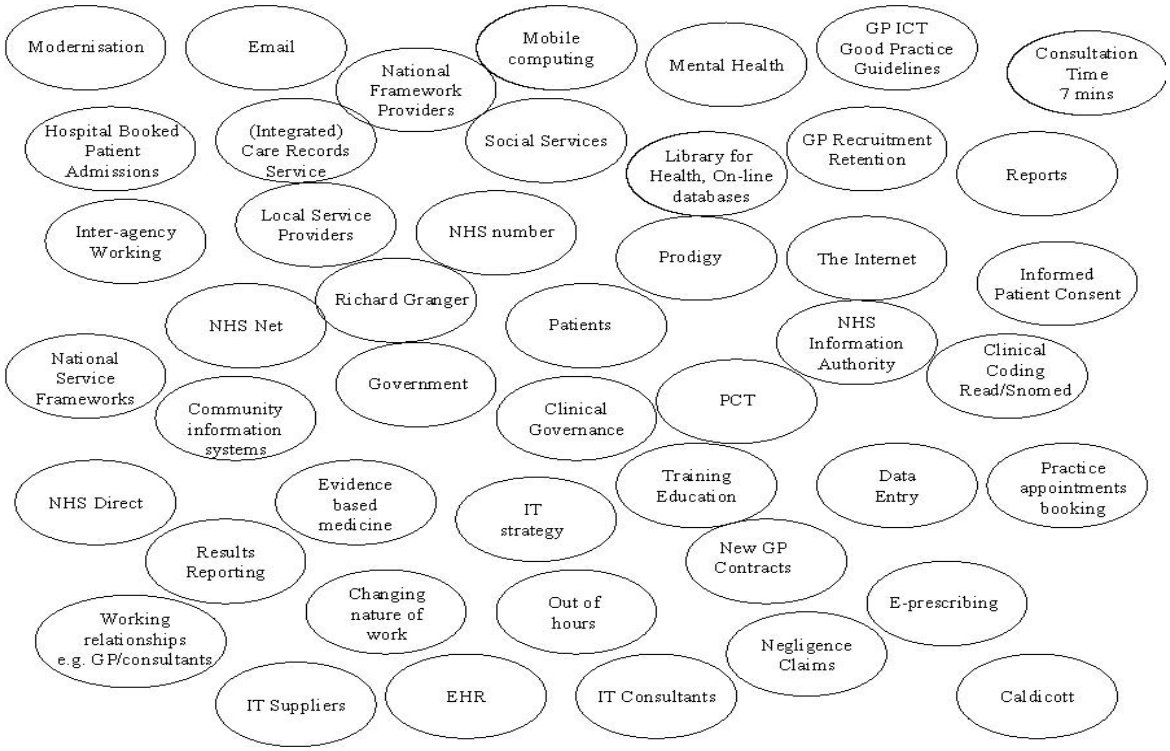

Figure 1: Template for Key Issues Associated with ICT in English General Medical Practices.

Revising the template: It is important to realise that the template must be revised in response to the concerns of the interviewees. Respondents were able to suggest other key words that they thought should be included and enlarged on them if they felt it necessary. They were provided with the template at least 1 week prior to the interview. As part of the research we soon discovered that many of the key issues, words, and phrases that we identified initially were not relevant to all of the interviewees and a number could be deleted. It was also apparent that GPs had issues and perspectives different from nurses and practice managers even when they came from the same organization practice.

The analysis of the data: The template used in Figure 1 was developed to support data collection from individual respondents who were not conversant with the language of ICT diffusion. These people were clinical professionals and therefore in order to engage them in a productive dialogue the codes were developed from the researchers' cumulative knowledge (combined 30+ years) in health and Information Systems research. An objective of the research was to develop a more informed framework of ICT diffusion for Innovations in healthcare and IS. This led us return to the literature to identify a more suitable academic/theoretical framework from which we could identify a priori codes for the data analysis.

Table 1:

	Doctors	Nurses	Practice Managers
Innovation	Mobile technology New use of EMIS –Population Manager Results reporting Internet	Internet Results reporting EMIS – Population Manager, templates	Paper-lite Manager as IT manager E-comms EMIS Population Manager Results reporting

Table 1 shows contextualized attributes for key stakeholders in GP practices, adapted from "Why Organizations Adopt Information System Process Innovations: A Longitudinal Study Using Diffusion of Innovation Theory," E. Mustonen-Ollila and K. Lyytinen, *Information Systems Journal* (13), 2003, p. 282.

If we consider '**Results reporting'** as an example it can be seen that it is an Innovation in all of the three categories of staff. However, within the coding what emerged was:

1. Results reporting
    1.1. Process
        1.1.1. Internal email
        1.1.2. Distribution of printouts
    1.2. Problems
        1.2.1. Technical
        1.2.2. Human/organisational

Results reporting is the process by which diagnostic tests are sent to a hospital laboratory for analysis and the results sent either by electronic or paper-based means back to the GP practice. Staff discussed how it worked for them and the difficulties encountered on a day to day basis. Thus when writing up the research it is much more easy to see how to structure the sections and support categories with illustrative text. It allows comparison within specific groups of staff and across groups.

5. Issues and challenges in case study two

Teespath was formed in the year 2000 in order to establish a 'collaborative clinical partnership across the community, in order to support the Tees Valley clinical network' with the main improvement goals focusing on: information systems, common equipment platforms, common approaches to systems of work, expansion of test repertoire and range of services and improved recruitment and retention of key staff (Clayton, 2000). In January 2002 Teespath was allocated £1.82 million from the NHS Phase III Pathology Modernisation funds towards the costs of supporting the development of a single managed clinical network in pathology (DoH, 2004)

The exploratory nature of this research, within the context of a complex suite of pathology related IT projects and a new organisational network design, guided the authors to adopt a qualitative and interpretivist approach to the inquiry. The study is still on-going but the main interviews were conducted in a 2 month period in 2003. Other primary data such as core documents, emails and notes from personal observation within project meetings have been collected over the period 2002 through 2007. One of the authors is employed full time as a Pathology laboratory manager at one of the participating hospital Trusts. Primary data was collected as part of a negotiated research project in collaboration with the Teespath managed pathology network project. This provided legitimate access, whilst conforming to all ethical requirements, to project meetings, minutes, formal and informal documents as well as his role as a participant observer

The main focus of the primary data collection involved both unstructured and semi-structured interviews. In the first instance unstructured interviews were conducted with the Teespath programme director and IT manager in order to identify possible 'critical factors' deemed important by these key members of the group. The information collected was used to restructure the Somers and Nelson (2001) top ten Enterprise Resource Planning (ERP) Critical Success Factors (CSFs) to contextualise it for the pathology modernisation initiative. This formed the basis of a set of questions for the semi-structured interviews directed towards eight IT managers from every Trust within the Teespath pathology organisational network. Interviews were audio-recorded and fully transcribed for later analysis. In addition the interviewee's were asked to comment on the CSF list and encouraged to comment on the validity of the factors in a NHS environment, and to suggest any factors they felt were absent.

In order to organise, analyse and interpret the text, template analysis was utilised to first code and then re-arrange the text from the semi- structured interviews. Crabtree and Miller (1999:165) state that *'when using a template, the researcher defines a template or codes and applies them to the data before proceeding to the connecting and corroborating/legitimating phases of the analysis process...where the template or codes can be constructed a priori, based on prior research or theoretical perspectives'*. King (1998) advocates compiling a list of codes occurring in each transcript. The distribution of the codes within and across transcripts can help draw attention to aspects of the data, which warrant further examination. In this study an a priori list of codes was drawn up based on a key selection of CSF research from the field of ERP adoption (Somers and Nelson, 2001) and implementation research (see Table 1.) Interview transcripts were manually coded and analysed using coloured highlighters. The distribution within and across the template was facilitated by the use of a spreadsheet. The frequency and distribution of codes was used as a means of making 'connections' within the text. (Crabtree and Miller 1999:169)

The IT managers interviewed in the Teespath project were asked to re-assess and re-rank the top ten CSF's (from Somers and Nelson) to reflect their importance to the 'Teespath' initiative. This was done in order to create a comparison with the original Somers and Nelson (2001) list of ERP critical success factors. It was envisaged that a list of critical factors relevant to NHS Information Systems implementation would be produced, advancing knowledge in this area. The results (averaged out) can be seen in Table 2.

Table 2: Comparison between Somers & Nelson's (2001) list of ERP CSF's compared to those generated for 'Teespath' development

Critical Success Factor	ERP Ranking	NHS ranking
Top Management Support	1	1
Clear Goals and Objectives	4	2
Project Team Competence	2	3
Project Team Management	5	4
Project Champion	8	5
Interdepartmental Co-operation	3	6
Interdepartmental Communication	6	7
Management Expectations	7	8
Careful Package Selection	10	9
Vendor support	9	10

5.1 Template analysis

Each CSF was used as a category to identify further sub-codes within the text generated from the interview data, table 3. The sub-codes were derived by immersion/crystallisation (Crabtree and Miller, 1999) through reading the texts; this was a deductive leading to an inductive research approach with sub-codes emerging from the data and expressed in the particular discourse and language of the respondents. The frequency of statements pertaining to each sub-code and category were then interpreted and recorded by interviewee. The analysis presented in Table 4 demonstrates the density of comments related to each CSF and the particular contextualisation of the issue within the Teespath project.

The most frequent negative comments (most mentions) related to issues concerning *project team competence* (people leaving and joining at will; projects could be improved by taking wider organisational perspectives); *inter-departmental co-operation* (identification of cultural differences between pathology and other stakeholders); *project team management* (requirement to involve users, unstructured project management and no initial success and no delivery). Other strong views were expressed concerning *top management support* (no active support and lack of direction from the Board) and *careful package selection* (may conflict with the Care Records System (a national centralised IT health records or electronic patient record system)).Positive comments related to the *vendor support* (vendors have been supportive), *clear goals and objectives* (goals and objectives are clear).

Table 3: Template analysis, categories and codes (Mn = number of managers' response)

Codes		M1	M2	M3	M4	M5	M6	M7	M8
Top management support	1								
No active support	1.1	****	**	*	***			*	***
IT not high on agenda	1.11		*	**					
Nothing past IT manager	1.12				**				
Lack of direction from Teespath board	1.13	**	****					**	
North Durham opted out	1.2			*	*			*	
Yes	1.3		*			**	**		
All Chief Executives are signed up	1.31		*						
Project Team Competence	2								
Problems with the initial make-up of teams	2.1			**	******				*
People leave and join at will	2.11	*********		*	***			*	*
Projects lack systemic review	2.2	*		*			*		
project teams are competent	2.3			****		*			*
Generally a good mix of staff on projects	2.4	**			**			*	
Could be improved by taking a wider organisational perspective	2.5	**	**	********			*	*****	*
Co-operation	3								
Cultural differences within pathology	3.1	****	***	**	****		*	**	***
Lack of co-operation between laboratories	3.2	**	*		**			**	*
Lack of co-operation between pathology and IT	3.3				****	**		***	
Clear goals and Objectives	4								
No clear goals and objectives	4.1			**	*			**	
Confusion over what the projects are trying to achieve	4.2	*	**	*	*			*	
Confusion with suppliers	4.3			****	*				
Brief getting wider by the minute	4.4		*****					*	
Yes the goals and objectives are clear	4.5	*	*			*	*		*
Project Team Management	5								
Initially unstructured project management	5.1		**	*	*****				*
Initial lack of a project manager	5.2				*				*
lack of documentation	5.3	*	*						
Not text book PRINCE 2	5.4	***		*			*	*	
Requirement to involve users	5.5	********		*******	**				
No initial success not delivered anything	5.6		****	***			**		**
Improved with formal project management	5.7				****				*****
Well managed	5.8	*			*		****		
Interdepartmental communication	6								
Involvement of people who need to know	6.1			****	*				
lack of communication to lab staff	6.2	******	***		*		**	*	**
Not considered a role of the project team	6.3		*						*
Good communication	6.4	*					**		
Staff gain interest as projects complete	6.5	***					**		
Management Expectations	7								
Modernise pathology	7.1	***		**		*		**	
For financial benefit	7.2		**						
As stand alone projects	7.3	*					*		**
Not a money saving excecise	7.4			*					
Reacting to government initiatives	7.5		*						
Project Champion	8								
Initially Director of Tees Health Authority	8.1								*
Project director	8.11	**	*						
IT manager	8.12					*			
No one person	8.2			**	*		*	*	*
Vendor support	9								
Vendors have been supportive	9.1	*	*	*	***		*	**	*
Careful package selection	10								
Extremely careful	10.1				*				
Required demonstration of operability	10.2				****				
Chose the most proactive supplier	10.3								
Cost was a major factor	10.4		*		***		**		
Not a project the traditional IM&T suppliers would be interested in	10.5			*					
May conflict with the ICRS	10.51	*		******			*	**	*
There is no off the shelf option	10.6		***	***	**				
Not actually bought anything	10.7		*					*	*
Doubts over lab to lab project	11								
Question the whole raison d'être of the lab to lab project	11.1	**	***					*	
lack of resources	12	*			*				
No revenue to back capital	12.1			**	*				
Difficulty getting funds released	12.2				***				

6. Discussion

Template analysis is now well embedded in healthcare qualitative research (King, 2004; Crabtree and Miller, 1999). However, it is not so well established in Business and Management research and thus is innovative yet challenging in itself when applied to this different context. Traditionally Business and Management research has emerged from a positivist paradigm and only more recently has begun to accept that interpretivist qualitative research has theoretical as opposed to anecdotal value. Nevertheless, it has been hampered by poor data analysis techniques and a lack of cumulative theory building. Our approach attempts to develop a more rigorous approach to analysis of large amounts of rich textual data but has been adapted from the methods advocated by King (2004) and Crabtree and Miller (1999). We could be challenged that Template Analysis bears little difference from the use of software packages such as NVivo for analysis of data and in fact the software might allow a more comprehensive approach. We would argue that immersion in the data is an essential part of the interpretive process and use of technology can often act as a substantial barrier.

Figure 2 is a diagrammatic representation of our work to date and demonstrates two alternative routes that can be adopted when undertaking template analysis in this context. Case 1 began with the researchers initially considering a grounded theory approach to this project. It soon became obvious that such an approach was unsuitable due to the existing knowledge, experience and biases of the two researchers within the domain of Healthcare ISM research. The research design was thus modified to retain the inductive component but with elements of structure provided by a template analytic approach. The researchers with reference to relevant literature and practice engaged in a contextual dialogue to identify a set of a priori codes that could be used to engage the specific health professional identified in the research project. Data was then collected via semi-structured interviews using the initial codes (Figure 1).

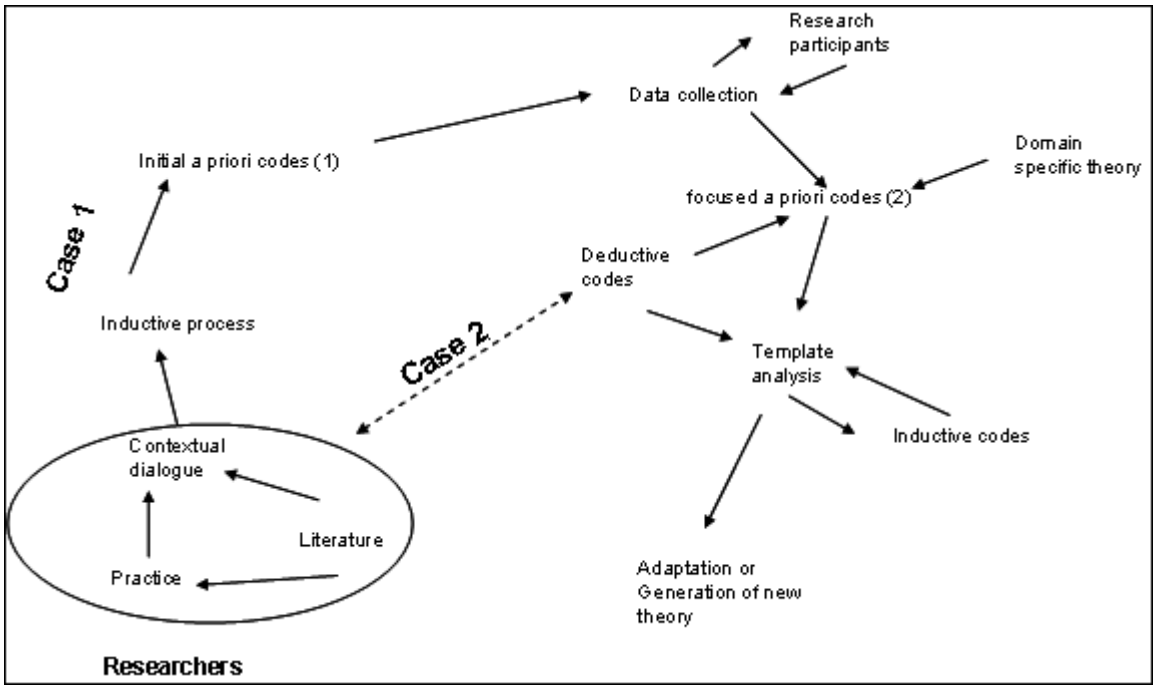

Figure 2: The integrated research process for cases 1 and 2

The recorded conversations were shaped around the initial codes in a random manner as subject chose where they started and where they wanted to focus. After this phase we revisited the literature and identified more domain relevant theory in the field of ICT diffusion research (e.g. Table 1). A best fit framework was identified from the literature and used to produce a list of a priori codes for the analysis. This list was also complementary to the initial a priori (1) codes.

In contrast Case 2 began with a process of comprehensive literature review with an explicit aim of identifying a list of suitable critical success factors for IT project management. The research was designed to assess these CSFs for relevance within a healthcare ICT management project. The literature review was successful in identifying the top ten CSFs which had a major impact on the success of large scale ERP project implementations. This selected list was therefore used as the a priori codes to structure the interview schedule and inform the data collection process. This was a deductive process leading to a very structured

data collection and analysis exercise. The template analysis was very informative in identifying frequency and relationships between individual codes – these are often referred to as parallel codes (Crabtree and Miller, 1999). Through an inductive process of immersion in the text a hierarchical list of sub-codes emerged to provide a much richer interpretation of the IT project management process (Table 2).

It may be seen as a critique of this work that deductive and inductive research is incompatible within the same research project. However Business and Management research can be critiqued for its lack of emphasis on theory generation and development. Many researchers who do use a deductive approach very often find that there is still much unknown about certain theoretical aspects. One area of our research that has highlighted this is the emergence of power and politics within the DOI research we conducted yet the frameworks within the literature do not acknowledge this as having any substantive significance. Figure X allowed us to explore issues that can inform new theory building.

7. Conclusion

This work is very challenging and can be explored further. We still have work to do on reconciling the difficulties within our method. However, we do have other research projects underway that will look at different research contexts. One such project is in the area of Internet abuse in the workplace and hopefully the initial pilot project will be ready to report later this year. We would encourage constructive comments on our work to strengthen it and intend to reflect on them over the coming months.

References

Caldeira, M. M., and Ward, J. M. (2003) "Using Resource-Based Theory to Interpret the Successful Adoption and Use of Information Systems and Technology in Manufacturing Small and Medium Sized Enterprises," *European Journal of Information Systems* (12), 2003, pp. 127-141.

Clarke C. L., and Wilcockson J. (2001) "Seeing Need and Developing Care: Exploring Knowledge for and from Practice," *International Journal of Nursing Studies* (39:4), 2001, pp. 397-406.

Clarke C. L., and Wilcockson, J. (2002) "Professional and Organizational Learning: Analyzing the Relationship with the Development of Practice," *Journal of Advanced Nursing* (34:2), 2002, pp. 264-272.

Clayton, R.(2000) "Teespath: Pathology partnership, scope, purpose and structure", *NHS internal working document*, 2000.

Crabtree B. F., and Miller, W. L.(1999) *Doing Qualitative Research,* Sage, 1999.

Cragg, P. B. "Benchmarking Information Technology Practices in Small Firms," *European Journal of Information Systems* (11), 2002, pp. 267-282.

DoH.(2004) "Modernising Pathology Services," 2004, NHS DOH publication available at Pathology.modernisation@doh.gsi.gov.uk , www.connectingforhealth.nhs.uk

Drucker, P.(1985) "The Discipline of Innovation," *Harvard Business Review*, May-June 1985, pp. 67-72.

Grandon, E. E., and Pearson, M. J.(2004) "Electronic Commerce Adoption: An Empirical Study of Small and Medium US Businesses," *Information and Management* (42), 2004, pp. 197-216.

King, N (2004) Using templates in the thematic analysis of text, in C.Cassell and G.Symon (Eds.) *Essential Guide to Qualitative Methods in Organizational Research*. London: Sage.

King, N.(1998) "Template Analysis," in *Qualitative Methods and Analysis in Organisational Research: A Practical Guide*, Symon, G and Cassell, C., (Ed.), Sage London, 1998.

Miles, M.B. and Huberman, A.M. (1994) *Qualitative Data Analysis: An Expanded Sourcebook*. Beverly Hills, CA: Sage.

Mustonen-Ollila, E., and Lyytinen, K. "Why Organizations Adopt Information System Process Innovations: A Longitudinal Study Using Diffusion of Innovation Theory, *Information Systems Journal* (13), 2003, pp. 275-297.

Poon, S., and Swatman, M. C. "An Exploratory Study of Small Business Internet Commerce Issues, *Information and Management* (35), 1999, pp. 9-18.

Rogers, E. M. *Diffusion of Innovations* (4th ed.), New York: The Free Press, 1995.

Somers T. M., and Nelson, K. "The impact of Critical Success Factors across the stages of Enterprise resource Planning Implementations," in *Proceedings of the 34th Hawaii International Conference on Systems Sciences, 2001*.

Southern, A., and Tilley, F. "Small Firms and Information and Communication Technologies (ICTs): Toward a Typology of ICTs Usage," *New Technology Work and Employment* (15:2), 2000, pp. 138-153.

