Resigned Robots and Aspiring Artisans:
A Conceptualisation of the IT Service Support Worker

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by

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CERTIFICATE OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this thesis, that the original work is my own except as specified in the acknowledgements or in footnotes, and that neither the thesis nor the original work contained therein has been submitted to this or any other institution for a degree.

..... (Signed)

..... (Date)

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Abstract

In the last two decades the IT service support worker has emerged to be a worker-type of considerable socio-economic importance. Such workers are symbolic of the trends towards the importance of information/knowledge and information technology within modern economic/political systems. Such systems, heavily influenced by governmental bodies and business organisations, have aggrandised the use of rationalising customer-centric management techniques. And yet such symbolic workers are largely hidden and unacknowledged as a specific type of worker in the business literature.

This thesis represents an attempt to conceptualise the IT service support worker as a worker-type, inducing a conceptual model that identifies three aspects to the worker: information systems worker; knowledge worker and service worker and considers them from each of these perspectives. This qualitative research draws on a rich mix of observational and interview data collected across five UK organisations to produce a narrative that suggests that, for different IT service support workers, those different aspects tend to be variably emphasised within their team roles. The study additionally offers a theoretical conclusion that IT service support workers might reasonably be divided into different classes depending upon not only the design of their team role but also their individual career orientations and the nature of the knowledge they actually use in their work. Four such classes are identified as being of particular significance and these are evocatively named: 'Resigned Robots'; 'Constrained Careerists'; 'Establishment Experts' and 'Aspiring Artisans'. Whilst being outside of the scope of this study, it is suggested that this novel typology might also be useful for classifying other worker groupings.

The study is intended to be useful for the enhancement of IT service management practice and makes several contributions in this regard. These include the need for managers to recognise the importance of experientially-acquired knowledge for efficiency in IT service support work and a suggestion that managers might tailor HRM practices for different classes of worker.

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Acronyms and Abbreviations

BCS	British Computer Society
BPR	Business Process Reengineering
CAD	Computer-aided Design
CBI	Confederation of British Industry
CEO	Chief Executive Officer
CIPD	Chartered Institute of Personnel and Development
COBOL	COmmon Business-Oriented Language
CoP	Community of Practice
CoP's	Communities of Practice
CSI	Continual Service Improvement
CTO	Chief Technology Officer
ECDL	European Computer Driving Licence
FHEQ	Framework for Higher Education Qualifications
HR	Human Resources
HRM	Human Resource Management
IBM	International Business Machines
ICL	International Computers Limited
IEC	International Electrotechnical Commission
IM	Incident Management
IT	Information Technology
ITIL	Information Technology Infrastructure Library
ITIL V2	Information Technology Infrastructure Library Version 2
ITIL V3	Information Technology Infrastructure Library Version 3
IS	Information Systems
ISO	International Organisation for Standardisation
ITSM	Information Technology Service Management (a.k.a. IT Service Management)
ITSMF	Information Technology Service Management Forum (a.k.a. IT Service Management Forum)
KM	Knowledge Management
KMDB	Knowledge Management Database
LSE	London Stock Exchange
MCP	Microsoft Certified Professional
MNE	Multi-national Enterprise
MTBF	Mean Time Between Failures
NASA	National Aeronautics and Space Administration (of the USA)
NQF	National Qualifications Framework
OED	Oxford English Dictionary

ONS	Office of National Statistics (of the UK)
POY	Poyet Systems (alias)
priSM	Professional Recognition for IT Service Management
QCF	Qualifications and Credit Framework
SCC	Shire County Council (alias)
SCCD	Shire County Council (alias) Corporate Services, Desktop
SCCS	Shire County Council (alias) Corporate Services Service Desk
SCES	Shire County Council (alias) Education Services IT Service Desk
SER	Server Control (alias)
SFIA	Skills Framework for the Information Age
SIC	Standard Industrial Classification
SIP	Service Improvement Plan
SLA	Service Level Agreement
SME	Small and Medium Sized Enterprise
STOB	Stoneworks (alias) Business Services
STOD	Stoneworks (alias) Desktop Support
STOS	Stoneworks (alias) IT Service Desk
TQM	Total Quality Management
UKHEE	United Kingdom Higher Education Establishment (alias)
UKHS	United Kingdom Higher Education Establishment (alias) IT Service Desk
WFMS	Workflow Management System

Chapter 1: Introduction

1 Another Banking Failure

When, in November 2011, the computer systems at the Royal Bank of Scotland (RBS) failed, up to 15 million of their customers could not access their accounts. An anonymous spokesperson told the press: *'We have a good understanding of the issues and are making good progress with our recovery plans*' (Delgado, 2011). We can note here the use of the corporate '*We*'. When the same systems failed again in June 2012, another anonymous spokesperson revealed that: *'It's an IT problem. Everyone's attention has been diverted to this area until it has been fixed'* (King, 2012, p. 5). We can note here use of the word '*everyone*'. The reality was that neither the corporation as an entity, nor the entire workforce was working on restoring the bank's IT services. Whilst corporate managers and spokespeople were attempting to reassure customers and the business community that the bank was in control of the situation, hidden behind this facade, individual IT service support workers were working with technology and their knowledge of that technology in its contextual setting to rescue the situation. RBS's management, for all their rhetoric, were totally reliant upon this band of workers to relieve the political and commercial pressures that had resulted from the failures (Read, 2012). Management impotency in such situations was revealed in a message sent via Twitter to RBS Group business banking customers after a further '*unacceptable failure*' (RBS Spokesperson, BBC, 2013) of the RBS computer systems in March 2013: '*We're aware of the problems some of our customers are having… We'll get you more information as soon as we have it'* (Tweet by @NatWestBusiness, 7th March, 2013).

The research questions addressed in this thesis seek to go behind the corporate facade by asking:

- What is the nature of the work of IT service support workers?
- How should we understand and conceptualise such workers?

Clearly they use IT skills, so considering them as workers within the IS field would seem to be a pertinent line of enquiry. Similarly, because their technical knowledge is important, we might ask: 'to what extent might we regard them as knowledge workers?' And, thirdly, because the focus for IT service support workers is on servicing an operational system, and providing support, directly or indirectly, to a customer, a further strand for exploration is by conceptualising them as service workers.

The contribution of this thesis is not one of incrementally building upon a single well-established literature but rather one of identifying an important worker type that has been overlooked in the literature and introducing a theory as to how we might usefully understand them. As will be outlined further below, this involves examining and making contributions to the broad literatures on information systems (IS) workers, knowledge workers, and service workers. The thesis can be seen to make those contributions at two levels. At a base level it makes contributions to the specific literatures that are examined separately by addressing gaps in them. At a higher level, the thesis makes an important holistic contribution by drawing attention to, and conceptualising IT service support workers as an important, but overlooked worker type in contemporary economies.

The overall argument of the thesis is that IT service support workers are typically hidden from vision by management design, through a hegemonic IS practice that, through systematisation seeks to dehumanise and dissemble individual workers into objective capabilities that might be readily controllable by management. It is argued that the apparent consensual acceptance of this within the rhetoric of IT service managers has resulted in little becoming known about these important workers. Just as IT operations, as '*a crucial activity to organisations*' is under-researched in the academic literature (Conger, 2010, p. 100), so are the workers involved in supporting operational services; and this thesis, by setting out to understand and conceptualise them through a rich qualitative study, makes a substantial contribution to that literature by filling a previously unacknowledged, gap. In doing so it responds to Barley and Kunda (2001) who have noted that there is a dearth of research on workers' activities and routines and the skills/knowledge they use. The research is also in the

tradition of the historian E.P. Thompson who sought to rescue working men and women '*from the enormous condescension of posterity*' (1968, p. 13). Like Thompson, I refuse to accept that artisanship has been made obsolete by market-driven progress and, here, I seek to rescue IT service support workers from the enormous disrespect accorded them by being rationalised to the point of eradication of their humanity by management 'best practice' theorists. It is considered that, in institutionalising the exclusion of these human IT service support workers from consideration as anything other than being rationalised resource and capability assets (as discussed in Chapter 3) through the diffusion of a powerfully imposed 'best practice' (Green, 2004), there is a negative impact upon organisational performance that is not dissimilar to the negative impact upon organisational performance that results from workers being disrespectfully socially excluded within the workplace (Matthieson and Einarsen, 2001; Einarsen *et al*, 2003). The common denominator between such institutionalised management 'best practice' and institutionalised workplace bullying is the intent of those wielding power to dehumanise. This study seeks to operate alternatively, by seeking to understand IT service support work as a very 'human' endeavour that sustains – and at times rescues - organisations that are reliant upon complex IT systems.

2 Further Scene Setting

To further emphasise the political and economic importance of these workers, by way of scene setting I offer here brief reference to two other recent high-profile news stories that have at their centre, yet hidden from view, IT service support workers working at supporting live IT systems that by their dynamic and complex natures are prone to fail. This is followed by a reminder of the ubiquity of IT service support work as an inevitability of the ubiquity of IT systems across the breadth of society (Carr, 2003).

The first of these cases reminds us that Government policy is now largely implemented by complex computer systems that have revolutionised the

business of government and enabled the evolution from paper-based departmental bureaucracies to electronic data-based bureaucracies.

The very capability of the UK Government to fund its expenditure commitments is dependent upon the live (and humanly supported) computer systems of HM Revenue and Customs (HMRC). The IT systems that have evolved at HMRC have proven to be problematic and major service failures (or incidents) at HMRC (Woodward, 2007; Levene and Osborne, 2008) have had serious political repercussions. One such system failure in 2010 resulted in 5.7 million taxpayers paying the wrong amount of tax and prompted the departmental head into saying he was '*deeply sorry*' to taxpayers faced with an unexpected tax bill (Swinford, 2010). As he was taking the political flak, hidden from view, IT service support workers were using their skills and knowledge to resolve the failure.

There are many similar examples of major live information system failures affecting private-sector firms which have resulted in significant negative impacts on organisational credibility, financial performance, and viability. For example, investors in Research in Motion (RIM) called for the break-up or sell-off of the company after RIM's Blackberry mobile communication services became unavailable to users for successive long periods of time. The service outage was caused by IT service support workers applying a software upgrade; and it was IT service support workers who spent several days trying to restore the service whilst their impotent managers sweated as they watched RIM's reputation collapse, the share price nosedive, and competitors – notably Apple – take advantage (Arthur and Garside, 2011; Waugh and Geoghegan, 2011). As the workers struggled to resolve the failure of the service, it was the management and the shareholders who had no choice but to wait for the IT service support workers to come good in the end. If the failure had resulted from poor management decision-making in the past (in the case of RIM over capacity issues), it was only the skills/knowledge of the IT service support workers that could re-enable RIM to trade. All management could do was rue upon Gratton and Ghoshal's (2003) observation that in IT services knowledge rather than money is the key competitive differentiator.

Thus far the suggestion has been that IT service support work is of great importance to large organisations. It is; but it is also important across the whole fabric of society. This UK-based research takes us across a part of this fabric, stopping to look at IT service support work being done at a defence technology SME [small/medium sized enterprise] occupying modern offices on a provincial technology park; a smaller IT security service provider situated within a few rooms within a multi-occupancy industrial park in the Midlands; a campus-based higher education establishment; the UK operation of a multinational aggregates company, and the imposing county council offices of a large English shire county.

In order to understand these workers, whose job is to resolve IT incidents and fulfil users' requests for changes to be made to IT systems, it was essential that the research involved watching them extensively at work and listening to what they had to say about the work. This was done, with data collected over the course of 2010.

3 The Development of a Conceptual Model

As the research evolved a model was induced that conceptualised 'the IT service support worker' as having three aspects to it (Figure 1.1). Firstly they were IS workers (or 'assets' as the IT Service Management literature would present them) in that they worked with IT as an integral part of functioning information systems. Secondly, they were knowledge workers in that they were equipped to perform the duties incumbent upon them by the knowledge and skills they possessed. And, thirdly, they were service workers in that the output of their work was oriented towards a customer entity.

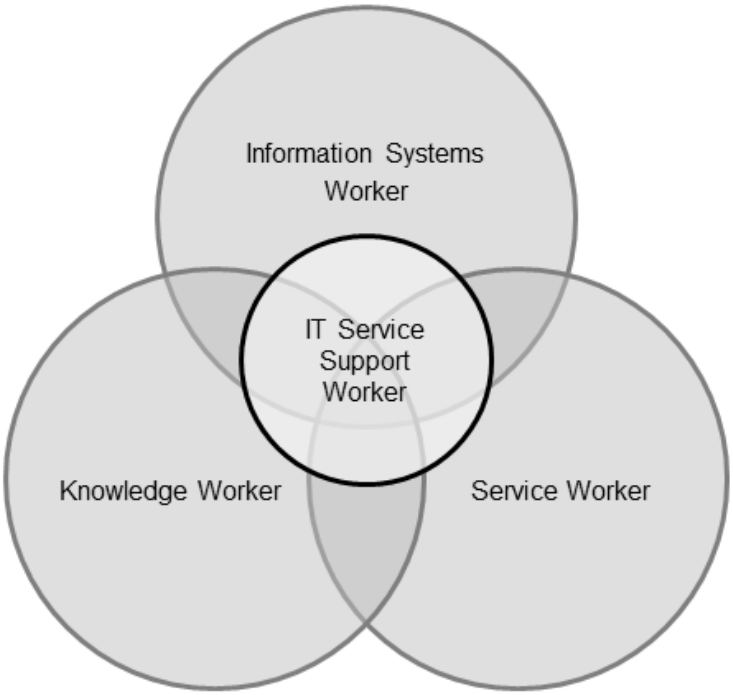


Figure 1.1: IT Service Support Worker: A Conceptual Model.

4 Thesis Structure

Given that the thesis ambitiously builds upon multiple strands of academic thought, rather than aiming at incrementally engaging with a single clearly identifiable body of literature, the structure of this thesis is unconventional whilst still organised logically for ease of comprehension and to arrive at a holistic conclusion that takes its strength from what precedes it.

The IT service support worker is presented in turn as a manifestation of each of the three types of worker in the above conceptual model in three separate chapters (Chapters 3 to 5). The format of these chapters is similar, starting with a literature review followed by data presentation and discussion. The discussion section within Chapters 3 to 5 highlight the specific contribution the thesis makes to each of the literatures examined. Inevitably there is some overlap between the chapters but repetition has been minimised. These chapters are preceded by a chapter setting out the methodological approach, including a

review of literature relating to the interpretation of knowledge work, and introducing the research settings. The thesis finishes with the concluding chapter that draws together the key findings of the research from the preceding chapters. It is considered that this structure is most appropriate for illustrating the identified large gap in the literature and meeting the objective of presenting a credible and empirically-supported representation of the IT service support worker.

5 Academic Contributions

The two core research questions are tackled through the above approach with a result that IT service support work is conceptualised as a variable team working activity. The specifics of that variability represent the core theoretical contribution of the study. This has clear implications for and contributes to IT service management and human resource management practices. These are discussed across chapters 3 to 5 and revisited in a concluding chapter 6. Along the route to that conclusion, additional theoretical contributions are made in relation to how the data is analysed. It is contended that the novel analytical approach taken to this study may be useful for the study of other organisational phenomena related to work and working people.

Chapter 2: Research Methods and Frameworks

1 Introduction

This research seeks to conceptualise the IT service support worker using pragmatically-selected methods. A broadly qualitative approach has been taken but without ignoring the importance of the quantitative dimension. This chapter makes a justification for the approach taken.

It starts by providing a background to the research, including a brief reflexive history of the researcher and a discussion of the implications of that history and reflexivity for the research. It continues by explaining how the subjects of the research (i.e. the organisations and workers observed and interviewed) were selected and access achieved, and how this enabled subsequent cross case analysis. It then details the data collection methods used. These methods included ethnographic observation of workers in their work environment, and particularly close observation of them fulfilling process-driven tasks, and interviews with IT service support workers. This section entails a discussion on epistemological leanings with particular discussion of the influence of Alfred Schutz upon the research.

As the research unfolded across time, the conceptual picture of IT service support workers, comprising elements related to their identities as IT workers, knowledge workers and service workers emerged. This subsequently guided the structure of the analysis undertaken following the collection of the data. This is expanded upon in the section on data analysis which seeks to explain the development of an analytical tool for interpretative comparison between the nature of the knowledge work of three identified 'types' of IT service support worker. This tool, along with three other novel models presented in this chapter as being useful for the analysis of workplace observational data offer contributions to theory.

The chapter then provides the reader with brief details of the multifarious research settings by way of setting in context the study. These details are

supported by an appendix containing a set of interpretative and ethnographic portraits of the settings.

2 Research Foundations / Reflexivity

Initial Objective

As a research project the initial objective was to study knowledge management [KM] within IT service management [ITSM] settings. The inspiration for this was personal experience of subjectively-unsatisfactory knowledge management practices that were driven by IT applications, and a desire to understand why KM initiatives seemed to have limited success. My starting point was a sense that within the 'systems thinking' mindset of IT service managers following 'best practice', the human workers were being somehow neglected. They were seen as being functional organisational assets, known at best for their technical capabilities and at worst as necessary mechanical parts that needed to be tamed out of their irrationality so that they fitted within rationalised processes. It seemed to me that without consideration of the workers' irrationality, complexity, creativity, sociability etc., KM initiatives were bound to be fundamentally flawed. As the research evolved, the IT service support worker became the focus of the research. Whereas at the start the worker was seen as a factor in the study of valuable workplace knowledge, this reversed such that workplace knowledge became an important factor in a focussed study of the IT service support worker. Gradually, a conceptual model emerged that showed the IT service support worker as an example of a knowledge worker as well as an example of an IT worker and a service worker.

Shared-lifeworld Perspective

My background experience of working within ITSM settings and of studying for ITSM 'best practice' qualifications enabled me to adopt a partial 'shared lifeworld' perspective (Schutz, 1953) as I visited organisational settings where elements of ITSM were being practiced along 'best practice' lines. Whilst the study cannot be said to be true 'insider' research (Brannick and Coghlan, 2007) in that I was not in a work role at any of the visited organisations, it nonetheless shared some of the benefits of such research. My history of working for many years in similar settings has enabled me to make the claim that when I entered each of the research settings it was in some way societally familiar to me; thus to some extent, I had an insider's knowledge of the social setting. When Brannick and Coghlan (2007, p.60) write that '*insider researchers are native to the setting and so have insights from the lived experience*' they are in effect writing of the Schutzian concept of the 'shared lifeworld' (Schutz and Luckmann, 1974). My familiarity with similar settings enabled me to analyse the experience of being in these 'new' settings through the lens of my historical experience. It is as Brannick and Coghlan (2007, pp.60,72) argue: '*because we are close to something or know it well ... we can research it ...* [and provide] *important knowledge about what organisations are really like*.'

My proposition is that, along with those IT service support workers that I observed and interviewed for the study, I, as researcher, have multifarious 'lifeworld perspectives'. One such perspective shared by these workers and I might be termed an 'ITSM work lifeworld'. For each individual this lifeworld perspective entails the possession of subjective 'knowledge' of ITSM work. Thus each individual's perspective will differ as their personal knowledge will have been differently '*developed, transmitted and maintained in social situations*' (Berger and Luckmann, 1966, p.15). The similarities between respective individual subjective 'knowledge' about ITSM work constitute '*what can be taken for granted as knowledge*' (Berger and Luckmann, 1966, p.15). This shared 'knowledge' might be said to be akin to – but nonetheless not - objective knowledge. Thus, this 'shared knowledge':

(i) equipped me at the outset of the study with '*insights from the lived experience*' (Brannick and Coghlan, 2007, p.60) that might guide me in collecting and analysing data, and

(ii) is the objective of the study as patterns and themes emerge from the collected data to suggest new quasi-objective knowledge about the nature of ITSM work.

The research thus was approached from a hermeneutical/phenomenological perspective with an interest in understanding each particular setting from the subjective standpoint of a researcher who was unfamiliar with the specific research settings but familiar with similar settings. Therefore, it might be said that as researcher, I brought to the research perspectives of both insider and outsider. In visiting multiple research settings and making comparisons (between these different settings and between different workers fulfilling different IT service support roles) the ontological stance of the research is revealed to be fundamentally positivist in its concern for generalisations that might be considered to be new academic knowledge and/or improved practitioner guidance. Any generalisations arrived at, however, were always to be considered to be tentative in line with the interpretivist 'social science' paradigm that (unlike positivist 'natural science' approaches) acknowledges that there is a '*problem of inappropriately fixing meanings where these are variable and renegotiable in relation to the context'* (Henwood and Pidgeon, 1993, p. 14).

As I explain elsewhere (Trusson, 2011), this research is directed towards academics and practitioners that I have typified in terms of their expectations. In order for the research to be acknowledged as worthwhile by them I must have reflexively 'stepped into' their respective 'lifeworlds' (Schutz, 1953). If I want to be understood by these typified research-recipients then it was incumbent upon me to empathise with these 'lifeworlds' to ensure accessibility/comprehensibility of the written output. There are certain rules associated with the academic 'life world' that must be adhered to, and by implication of the research emanating from a business school, the expectation of the research, as I perceive it, is necessarily business practice-focused. I perceive the *'raison d'être'* of business schools to be ultimately one of generating generalisable (as a pre-requisite for being useful) knowledge for the enhancement of business practice. In this

respect the research is perceived to have a bent towards an objectivist ontology whilst pursuing a subjectivist epistemology. Similarly the ITSM practitioner community is typified as having a positivist 'best practice' mindset. This 'best practice' is founded upon the idea that where a particular form of 'practice' has worked well in one setting it provides useful guidance for practitioners in another similar setting. In theory, over time the practices that work well ‘time and again’ in different settings become 'generalised' 'best practice'. However, as Trusson *et al.* (2013) argue , unequal power-relations are at play within the ITSM community and this results in the diffusion of those practices that are advocated by the power elites of that community who typically have vested financial interests in those practices being accepted as the ‘best’. As such ‘best practice’ for ITSM is often conflated with the ITIL (IT Infrastructure Library) guidelines (discussed further in Chapter 3) which are authored by a select band of ITSM practitioners. The research aims to benefit the wider ITSM community by engaging with the ITSM ‘best practice’ literature and contributing to the broader ITSM discourse, thus informing ITSM ‘good practice’. It particularly does this by conceptualising the IT service support worker into generalised classes. In this respect, through the observing of IT service support workers across several settings, the research strives to analyse generalised IT service support practice with concern for enhancing that practice.

3 Data Access Methods

Identifying an Organisation for a Pilot Study and Negotiating Access

In order to study the IT service support worker and the knowledge that they use as they go about their core duties, I needed to negotiate extended access to such workers. At this stage the research aims were still evolving and it was suggested that a suitable organisation to study as a pilot would be a conveniently-situated higher education establishment (referred to in this research as UKHEE [UK Higher Education Establishment]). More specifically, I approached their IT services department which had recently started to recruit

personnel with ITIL ITSM qualifications and were implementing structural change influenced by ITIL 'best practice'. Following a meeting with a senior manager in this department I was accorded access to two teams and subsequently made eight visits of up to four hours over a period of three months as I refined the research methods to be employed in the study.

Identifying Other Organisations and Negotiating Access

During this period and a further six months beyond I wrote approximately 30 bespoke letters to organisations that I considered might be suitable for the research and might be willing to enable me to collect appropriate data. The key criteria I used for identifying organisations was that they engaged in IT service management practices, particularly ITIL 'best practice'. It also included factors such as locality (i.e. within easy commute), operational breadth (i.e. there would be a good chance that there would be significant IT service support work being done for me to observe during my visits) and, in a few cases, knowing a manager or worker at the organisation. A sample letter, by which access to the IT Services division of a UK local government organisation was facilitated (referred to in this research as SCC [Shire County Council]), is shown at Appendix A. In drafting letters I took the advice of Bryman (2001, p. 295) to *'provide a clear explanation of your aims and methods and be prepared to deal with concerns, [and] suggest a meeting… [and] be prepared to negotiate.'* I also offered an assurance of anonymity to the organisation, to counter any concerns that the research might reveal and publicise shortcomings in the organisation's practices which might possibly be considered as a risk to reputation. In discussion with supervisors it was agreed that for consistency, all organisations would be given a pseudonym so as to preserve anonymity.

I also appealed for access opportunities by: posting messages on the website 'message board' of the IT Service Management Forum UK (ITSMF); at the end of a presentation I gave to a regional branch of the British Computer Society (BCS); and by personal appeals when attending regional meetings of the Chartered Institute of Personnel and Development (CIPD) and ITSMF. The

letters and ITSMF 'message board' message included an offer of providing independent feedback on ITSM processes observed. (The letter to SCC at Appendix A includes such an offer.) My professionally highly-regarded ITIL qualifications enabled me to justify this offer as being potentially of value to the organisations. These offers were in line with Bryman's (2001, p. 297 and p. 295) suggestions to: *'play up your credentials – past work and experience; your knowledge of the organisation and/or its sector; understanding of their problems';* and *'offer something in return (e.g. a report).'*

Accessing Poyet Systems

The first positive response received was a reply from the supervisor of the service support team at Poyet who had read the message on the ITSMF 'message board'. Through her I was able to arrange a meeting with her line manager who agreed to me coming into the workplace to observe and collect data on a full-time basis for a week.

This SME company owes its origins to communication research projects at two leading UK universities and has continued to be involved in academic research projects. However, the key reason for the company's management agreeing to offer access to the organisation to collect data was that my experience and qualifications relating to ITSM 'best practice' would enable me to provide them with feedback on their processes. At the end of the week collecting data I was able to provide feedback on perceived process efficiency whilst retaining confidentiality over any matter that might be construed as being potentially of a personal nature.

Accessing Shire County Council

I had several responses to the personal appeals in the form of contact names of people who might be approached within organisations. I followed

these up via letters, e-mails and phone calls, with the result of gaining a meeting with the head of IT services at SCC. Several other leads were pursued but these failed to materialise into research data collection opportunities. I subsequently came to a similar arrangement with SCC as I had done with Poyet, whereby I would attend the offices for a set period of time working standard hours and provide to management feedback on perceived process efficiency at the end of my visits. I subsequently spent 12 days at SCC collecting data from three different teams each in different office locations.

Accessing Stoneworks

A second response from the ITSMF 'message board' was received from Stoneworks, and again I visited the organisation to discuss the research with the IT service support manager. In conversation it emerged that she was herself studying part-time at Loughborough University and that the organisation had other ties to the University. I negotiated to attend for six full days over a two-week period and during that time was able to collect data from three different IT service support teams. Several weeks later I returned for a morning to collect further data from one of these teams as on reflection I thought the research would benefit from observing another worker on this team.

Accessing Server Control (UK)

Whilst collecting data at Poyet I learned that their third-party IT security service supplier, Server Control, was a local company and it was clear to me that they also engaged in IT service support work. At the end of my time with Poyet I asked the Chief Technology Officer (CTO) if he had any objections to me approaching this company mentioning that I had been collecting data from Poyet and been able to feedback to them on process efficiency. I subsequently managed to negotiate firstly a meeting with the Managing Director (MD) of Server Control and then, following a check made on my credentials, six days'

access to collect data. In this respect the relationship between the CTO at Poyet Systems and the MD at Server Control (UK) was key in negotiating access to Server Control (UK).

I was thus able to collect data for cross-case comparative analysis across 10 teams in five different organisations, two of which received public funding, two of which were private-sector SMEs and one of which was part of a private-sector MNE (multinational enterprise) that was publicly-listed in mainland Europe. Table 2.1 provides a summary of these organisations.

Organisation (Pseudonym)	Type of Organisation	Time Spent Collecting Data
UKHEE	Publicly-funded higher education establishment	4 days
Stoneworks	Private Sector Company – MNE	6½ days
SCC	Public Sector Service Provider – Local Government	12 days
Poyet Systems	Private Sector Company – SME	5 days
Server Control (UK)	Private Sector Company - SME	6 days
	Total	33½ days

Table 2.1: Overview of Organisations Accessed

4 Data Collection Methods

Seeking Typification

As researcher, I set out to collect data that might be interpreted such that a useful understanding of the IT service support worker as a theoretical concept might be achieved. To achieve that interpretative understanding, or *Verstehen* as Weber referred to it, there is an implication of 'objectivity': i.e. the IT service support worker as an objective entity. As Gorman (1977, p.15) explains of Weber's notion of Verstehen, '*to fulfil the necessary criterion of objectivity,*

Weber creates the 'ideal type' [which] cannot be found anywhere in reality.' Thus the data is not collected to reveal reality, but to reveal something of the 'ideal type' of IT service support worker, which might be subdivided into other lower-level 'ideal types'. Schutz highlights the importance of empirical data for the validity of such ideal types, arguing that empirically validated ideal types enable the satisfaction of science's logical requirements while remaining true to the qualitative social reality (Gorman, 1977). Gorman (1977, p.40) argues: '*typification is a means for coming to terms with the world ... [but] types do not exist in themselves*.' In line with this, the data is collected with the intention of conceptualising and codifying in language form the IT service support worker as a type of worker (that might be divided into sub-types), yet it holds to the view of Schutz (1964, p.8) that '*the safeguarding of the subjective point of view is the only ... guarantee that the world of social reality will not be replaced by a fictional non-existing world constructed by the scientific observer*.'

Phenomenological Standpoint

Whilst the broad area of research was identified prior to starting data collection, i.e. IT service support workers and their work as knowledge workers, the research was primarily inductive in that as researcher I resisted looking for data to prove or disprove a preconceived hypothesis. Rather, I sought to draw *'generalisable inferences out of observations*' (Bryman, 2001, p. 10). My phenomenological standpoint, with an objective of gaining a holistic theoretical understanding of the complex phenomenon of the IT service support worker and their work, informed me that hypothesis testing was inappropriate to the study because my subjective observations could never be sufficiently objective to enable proof or rejection of one hypothesis or another (Johns and Lee-Ross, 1998). Rather I saw my role as being in line with the description provided by Johns and Lee-Ross (1998, p.6): *'the inductivist's job is one of meticulous observation and careful data gathering. Once the data have been gathered, they are subjected to scrutiny, were upon natural, inescapable inferences emerge*.'

Different types of data were collected using broadly ethnographic methods. The techniques of ethnography were used for this study to enable the pursuit of '*the true meaning of social processes and human activity which would remain hidden by other methods such as questionnaire surveys'* (Bloor and Wood, 2006, p.73). Whilst I did not reject, as ethnographers often do, formal data collection protocols (Bloor and Wood, 2006), I did adopt a 'magpie spirit' of collecting data informally as and when it struck me as being potentially useful or pertinent; in the words of Hammersley and Atkinson (1995, p.2) '*collecting whatever data are available to throw light on the issues*.' In this respect the research sought to construct a conceptualisation of IT service support workers through the establishment of a broad-based understanding of their '*lives and experiences… in their own setting*' (Bryman, 2001 p.291).

Specification of Focus for the Collection of Observational Data

Before considering further the phenomenological standpoint taken it is first necessary to outline and consider the structure of typical IT service support work, since it is this work that was observed with a view to making sense of what was happening and thus to assist in the conceptualisation of the IT service support worker.

For the typical IT service provider the majority of operational support workers will be primarily involved in the process of Incident Management (IM) (incorporating the process of Request Fulfilment), the objective of which is '*to restore agreed service to the business as soon as possible or to respond to service requests'* (Van Bon *et al,* 2008, p. 186).

The IM process, influenced by 'best practice' methodology, tends to follow a standard pathway with relative consistency across organisations, allowing for valid comparison between the activities of the support workers' observed in different organisations. The standard IM pathway is one of taking a 'broken' situation and investigating then diagnosing it before resolving it, thus restoring 'normal service operation'. In the process of Request Fulfilment the pathway is

one of understanding the requirement and then bringing about the required state (e.g. an application to be installed onto a desktop computer).

A standard Incident Management process (incorporating the Request Fulfilment process) [reflected in the ITIL® V2 methodology (Berkhout *et al*, 2000) and recognisably similar at ITIL® V3 (Taylor, Cannon and Wheeldon, 2007) and in the ISO 20000 specifications for ITSM (Van Bon *et al*, 2008)] consists of several sequential activities with the incident as the object of central interest.

- **Incident Detection and Recording**, in which the Service Desk (or first-line or single-line support technician) will record basic details of the incident, typically on receipt of a communication from a customer.
- **Classification and Initial Support**, in which incidents are classified, matched against any previously recorded problems and 'Known Errors' and assessed for possible quick resolution. Known Errors are defined as a problem where the root cause has been uncovered and a workaround identified, but the problem has not been resolved yet via a formalised Change Management process.
- **Service Request Filter**, in which incidents are filtered that are identified as requests for information or advice, or for additional or modified IT services as opposed to IT service failures. This might include password change requests and standard upgrade requests.
- **Investigation and Diagnosis**, in which the IT technician reflects on the information provided and uses their experience to investigate and propose a resolution.
- **Resolution and Recovery**, in which the IT Technician resolves or oversees the resolution of the incident by way of a solution or work-around, possibly via a formal Change Management process.
- **Incident Closure**, in which the customer may confirm resolution of an Incident or fulfilment of a Service Request before the Service Desk closes the Incident Record.

Alongside these activities, the customer's point of contact (i.e. Service Desk or other front line technician) monitors and tracks the incident throughout its

lifecycle ensuring the IT service provider adheres to an agreed service level and communicates with the customer. The Incident Management process allows for incidents to be functionally escalated to other IT service support workers (i.e. second-line, third-line etc.) for resolution. The 'best practice' literature does not dwell upon the workers' experiences through the process: what is being sensed and perceived by them or what they might be doing in practice. Data were collected to do just this in line with a remodelled Incident Management process that makes the worker rather than the incident the object of focus. With reference to the writing of Alfred Schutz (1953), on the construction of 'courses-of-action types' and their relationship to 'common-sense thinking', a set of complementary Incident Management process models were constructed to illustrate this shift in emphasis so that a better understanding of the actual worker practice of Incident Management might be achieved (i.e. what the worker experiences as opposed to what happens to the incident).

Before introducing these models, some key elements of Schutz's musings that are relevant here are discussed with reference to how they might relate to the experience of the IT service support worker.

Applying Social Phenomenology to the Observation of IT Service Support Workers

We might now give further consideration to the use of the social phenomenological standpoint for this research. What makes IT service support workers of value to an employer is their capability to use their senses and mental capacities to interpret objects and events that come before them in their workplace social setting. To understand the value of the IT service support worker it is therefore important to understand more about this complex capability from a human-experiential or social phenomenological perspective. In his paper '*Common Sense and Scientific Interpretation of Human Action*' (1953), Schutz asserts that '*the thing perceived in everyday life is ... a thought object, a construct of a highly complicated nature'* (p.1), that '*the so-called concrete facts*

of common-sense perception ... involve abstractions of a highly complicated nature [and are] from the outset ... selected from a universal context by the activities of our mind [and] therefore always interpreted' (p.1). The social world in which an individual IT service support worker (assumed here to be female) operates '*has a particular meaning and relevance structure'* (p.3) for her and she has '*a stock of previous experiences*' (p.4) of this social world providing her with '*a stock of knowledge at hand'* (p.4) and this enables her to make useful and reliable interpretations of the facts, events and data encountered. From the perspective of the IT service support worker, we might follow Schutz's argument that she finds herself '*in a biographically determined situation'* (p.6) in which she has her position within the workplace in terms of her physical surroundings, status, role, personal stock of knowledge, and ethical stance (considering such matters as trust, cooperation and commitment to the organisational objectives) and that this position exists at any given moment but evolves over time and thus might be influenced by management decision-making amongst other factors. This historically-founded situation means that the worker has '*certain possibilities of future practical or theoretical activities'* (p.6) which Schutz refers to as the '*purpose at hand*'. The purpose at hand for an IT service support worker might typically be an incident or a service request and it is her biographically determined situation that enables her to interpret the facts, events and data relating to this purpose at hand and then take action to bring about an outcome that she understands to be required and that is acceptable to those in positions of power over her in regard to the purpose at hand (e.g. her management chain and the customer).

This understanding that when an incident is received the objective is to bring about its resolution is not unique to the specific IT service support worker but may be shared with others within the social setting (i.e. other IT service support workers within the team setting). As Schutz (1953, p. 7) writes: '*the world ... is intersubjective because we live in it as men among other men, bound to them through common influence and work, understanding others and being understood by them'.* However because different IT service support workers have different biographically determined situations they may interpret the objects and events pertaining to the incidents differently. Nonetheless Schutz

argues that common sense thinking allows for us to idealise and assume that, until counter-evidence, different perspectives originating from different biographies of different workers are irrelevant for dealing with the purpose at hand (e.g. working at resolving an incident) and that the meaning of events and objects might be taken for granted amongst those sharing the social situation: a grouping Schutz (1953, p. 12) refers to as '*consociates* [who] *are mutually involved in one another's biography [living] ... in a pure We-relationship'*. In such relationships (e.g. in a team of IT service support workers) typical behaviours and underlying motives are apparent and with such typification for the purpose at hand comes the anonymisation of the worker. Such anonymisation can clearly be related to the systems thinking that is typically applied within ITSM settings (e.g. Taylor, Iqbal and Nieves, 2007) whereby management are not geared towards engaging with the individual capabilities and limitations (or learning requirements) of workers but rather tend towards a mindset of worker inter-changeability based on management analysis of objectively-demonstrable past experiences. However, the complexity of IT work, and in particular the importance of contextuality, makes such a mindset questionable and there is a suggestion (addressed in this research) that considerable immersion within the IT service support socio-technical setting is required before an IT service support worker might be considered as a 'full' consociate of team members who have spent a significantly longer period of time within the social setting.

However, it is with such anonymisation that we might consider what Schutz (1953, p. 14) refers to as '*the construction of course-of-action'* as a worker-centric alternative to the incident-centric IM process (i.e. the typical manner in which the IT service support worker approaches and carries out the resolving of an incident). Schutz differentiates between three stages of a 'course-of-action': the motive, the project and the action. The motive incorporates two different concepts which he refers to as the 'in-order-to motive' and the 'genuine because-motives'. The 'in-order-to motive' is future oriented, and in the case of the IT service support worker might be typified to be similar to the objective of the IM process, i.e. to restore normal service operations or to fulfil the customer service request. The 'genuine because-motives' are past-oriented in that they relate to past experience that affect the worker's present situation. So such

motives might typically include the subconscious acknowledgement that she has previously entered into a contractual agreement to carry out the work in exchange for payment.

The term 'project' is used by Schutz in the verb, rather than noun, form to refer to the '*phantasying*' of future activity. This stage is one in which the worker imagines the completion of the activity (e.g. the resolution and closure of an incident) in the same way that the project manager for the building of a skyscraper imagines it standing tall on the skyline. As Schutz (1953, p. 15) writes: '*I have to visualise the state of affairs to be brought about by my future action before I can draft the single steps of such future acting from which this state of affairs will result'*. His thinking echoes that of Marx (1867a, p. 283) who wrote: '*At the end of the labour process, a result emerges which has already been conceived by the worker at the beginning, hence already existed ideally.'*

The term 'action' refers to the broad outline of activity that was 'phantasized' in advance. The steps within that activity (and therefore the composition of the action) may not be as per the phantasy because each step will be dependent upon the sensing and interpretation of results from previous steps. These steps or phases of the 'total action' (which include covert mental work as well as clearly observable overt work) Schutz (1953, p. 18) refers to as 'sub-actions' with their own 'sub-projects' which weld together into the 'original project'.

The relationship between these three stages is reflected in the process diagram at Figure 2.1. Without an initial motive, there is no reason for the worker to project to a future time when some state will have changed. And purposeful activity cannot take place until that change of state and the route to it has broadly been perceived. It is the connectivity between these three stages in the mind of a single 'motivated' human that marks out the work of the IT service support worker as potentially more creative (and less alienating) than work where there is a clear separation between the conception of the work and its execution (McGuigan, 2010).

In this model the 'action' stage has been expanded to elucidate on its internal process which is considered to be an iterative and potentially improvisational (Cunha *et al*, 2009) one across time until the 'phantasized' changed state has

been reached. This expansion is made to address the possibility (that Schutz does not write of) that during the period of time of action, as they encounter and interpret events and objects, the worker's 'in-order-to motive' and/or their 'phantasized project' may change. To provide examples:

i. the motive alters if the customer contacts the IT service support worker to cancel their service request or the service is unexpectedly restored through no action of the IT service support worker;
ii. the 'project' alters if after applying a known fix to a common error the worker does not get the expected result and has to deliberately and extemporaneously improvise *in situ* (Cunha *et al*, 2009), with implications for the originally 'phantasized project', since their envisaged route to service recovery has changed.

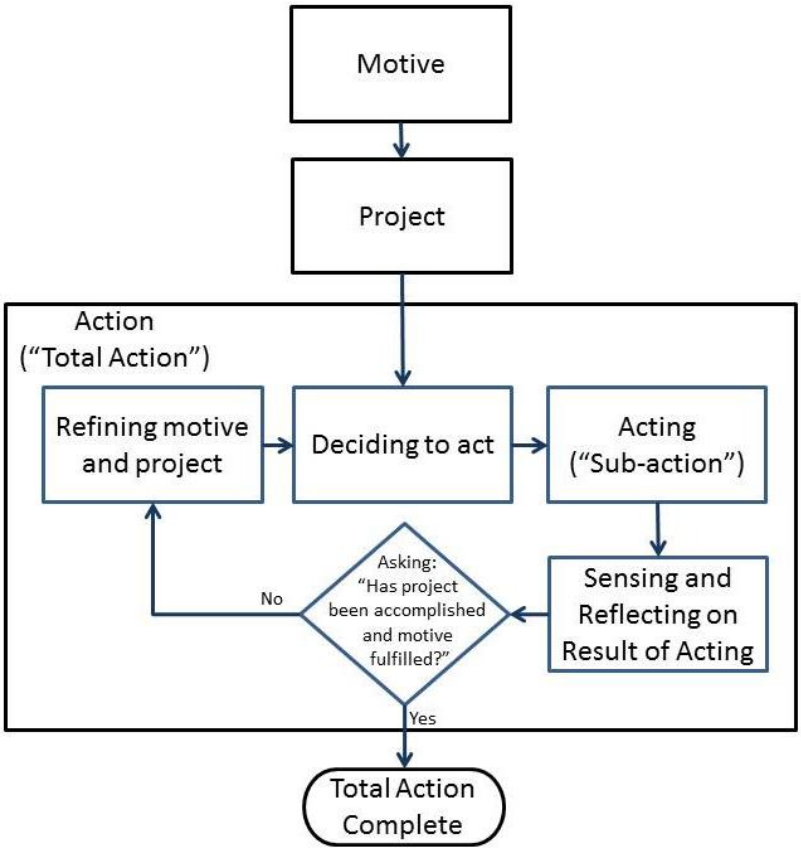


Figure 2.1: 'Course-of-Action' Process Model

And so, having established a motive to take action and projected to a changed state at the end of the 'course of action', the worker decides to take a specific first step towards reaching that projected state; then takes that first step and uses her sensory and mental capabilities to consider and interpret the result of that first step before deciding to take a second step and so on until the projected changed state is reached. This real-time cyclical, iterative and, where necessary, improvisational process of 'deciding, acting, sensing and reflecting' resonates with Swart's (2011, p. 322) concept of know-how-in-action which she defines as '*a routine in practice which consists of specific actions, by specific people, in specific places and times'*. Swart (2011) points to the importance of repeated actions for the maintenance of skilled performance and thus, in this case, effective IT service support at the team level and value creation at the organizational level. The process is also similar to the process of experiential learning presented by Kolb (1985). Kolb's Learning Cycle reduces learning down to four stages in an iterative loop. Learning occurs when one or more of the stages are used to resolve a problem (Kayes, 2005). In the work situation of 'handling' an IT incident through the IM process, the first two of Kolb's stages – concrete experiences and observational and reflective stage - closely relates to 'sensing and reflecting'. The decision to take action is made at Kolb's third stage of abstract conceptualisation; and Kolb's fourth stage of active experimentation (or checking out theories and hunches by testing in the unique situation) is similar to the acting stage. Thus it might be said that, for the IT service support worker, action and learning go hand in glove. As Luckmann (1987, p. 182) writes, *'subjective knowledge is built up from personal experience*' by which he means those events in the stream of consciousness which demand attention. In reflecting upon Schutz's concept of a subjective 'stock of knowledge' Luckmann, considers that whilst all experience contributes to knowledge, the extent of the contribution may be negligible or highly significant and that '*significant contributions regularly originate in experiences in which a problematic situation had to be dealt with, or when problematic aspects arose within an otherwise unproblematic situation'* (Luckmann, 1987, p. 183). Thus, those IT service support workers who face more problematic or unfamiliar situations, causing them to improvise, will be significantly building up their stocks of knowledge – learning – as an integral part of their work. Conversely,

those who work with more familiar territory will make only small contributions to their stock of knowledge.

Like the ‘best practice’ IM model this alternative worker-centric model is longitudinal. Whereas the incident-centric IM model covers the time period through which an incident passes through several stages from being initially reported to the IT service support worker by a customer through to being closed by the IT service support worker, this worker-centric model covers the time period through which an IT service support worker receives and interprets information (through a combination of her senses and ‘stock of knowledge’ that makes sense of the received information) that motivates her to take an initial action through to when she no longer has a motive to act in relation to that initial information.

The organisational structure in which the IT service support worker works, fundamentally affects the worker’s experience since some workers will have the opportunity or expectation to transfer incidents (functional escalation and referral back) to other IT service support workers whilst others will not. If this structural dimension is to be considered, as it must be, there are three distinct types of IT service support worker which must each be considered independently. These types, which for the purposes of this research are referred to as Type 1, Type 2 and Type 3, are defined as follows. Appendix B contains further explanation and a classification of each of the observed teams by worker type.

- Type 1: First-line workers

  These workers work on the front-line of a functionally-structured organisation. Typically, they ‘sit’ on an IT Service Desk and receive incidents and service requests via the telephone, email or web interface. They then investigate, diagnose and resolve incidents and/or fulfil service requests, and/or they may functionally escalate the matter to a Type 2 (second-line) worker who may work either in a second line team or on a second-tier within the same team.

- Type 2: Second-line workers (and subsequent-line workers)

These workers work behind the front-line of a functionally-structured organisation. Typically, these workers are referred work by an IT Service Desk according to set criteria. For example, if the incident relates to a desktop matter, then the Service Desk may, following procedural guidelines, escalate it to a Desktop Services team. On escalation, these Type 2 workers are tasked with investigating, diagnosing and resolving incidents, or fulfilling service requests. They may also functionally escalate the matter to another Type 2 team or worker, who they judge to be a more appropriate resource.

- Type 3: Single-line workers

These workers work in an IT service support function that does not allow for functional escalation. Typically, these workers combine the work of Service Desk workers (i.e. Type 1 workers) and back office technicians (i.e. Type 2 workers), performing all the responsibilities across the 'incident lifecycle' from identifying and recording incidents (including service requests) through investigation and diagnosis to resolution.

With regard to this differentiation between IT service support workers, two versions of the worker-centric IM process model were constructed to assist in the comprehension of what observation data might appropriately be collected such that an understanding of the work of IT service support workers might be better understood. The first of these relates to the work of Type 1 and Type 2 workers operating in what might be called a 'referral hierarchy'. The second relates to the work of Type 3 workers in what might be termed 'expert' teams with no structural opportunity to transfer an incident.

These 'Schutzian' IM Process models are presented at Appendix C with the first model, relating to where there is a 'referral hierarchy', being shown in three distinct parts to reveal the different experiences of Type 1 and Type 2 IT service support workers involved in the working of an incident. The second model is in a single part and shows the experience of the 'expert' IT service support worker who does not have an option of functionally escalating an incident because she

works in a flat organisational structure and is expected to have all the necessary knowledge at her disposal to be able to resolve incidents and fulfil service requests.

Overt, Non-participant Observation

Detailed ethnomethodological accounts were created following overt close observation of how IT service support workers went about their core tasks within the IM process (e.g. opening, investigating, diagnosing, resolving and closing incidents). As researcher, I sat alongside the worker and, using a pen and notepad, jotted down what I observed happening as workers worked on incidents (including service requests). A total of 99 different incidents were observed being worked in full or in part, of which 9 were discarded for reasons explained later. This type of observation is non-participant (Bryman, 2001) whereby I was able to observe behaviour directly in the 'natural' social setting without participating in it. It also had elements of what Bryman (2001) refers to as structured or systematic observation, although whereas typically such structure is imposed by the researcher, in the case of this research it was imposed by the defined process in which the participants were working (i.e. the IM process). A total of 23 different IT service support workers were observed in this manner. The data relating to observations on 20 of these were analysed (see Table 2.2).

As soon as possible after each set of observations I word-processed the account so that each observation of a worker working on a specific incident (or incidents where more than one incident was being worked simultaneously) was formulated into a consistent narrative. Each narrative was effectively a chronological list of the individual observable actions taken by the worker; and over time, a dataset of such lists accumulated. Particular emphasis within these lists was placed on the events and objects encountered by workers and the data/information/knowledge they appeared to be using and/or creating. Attention was paid to the workers' sensory experiences. In line with the theory associated with sensory ethnography, the research adopts a standpoint that

experience, perception, knowing and practice are multisensorial (Pink, 2009). As such I was interested in what workers looked at, touched, listened to etc. on the grounds that it is these human capabilities, combining sensory and cerebral functionality, that determine the need for the worker within the IM process. It is because technology is not available that can replicate the complexity of these human capabilities, that the worker remains integral to this process. The close observation of workers was thus objectified into a set of lists that chronicled what each worker was doing as they worked on an incident. Each list could then be analysed using a consistent technique that extracted low-level data that reflected the component parts of the knowledge used by the worker.

Organisation (Pseudonym)	Number of Teams Observed	Team	Number of Incidents Observed being worked	Number of Workers Observed Working
UKHEE	2 [1 analysed]	IT Service Desk	8	2
		*PC Clinic**	*9**	*3**
Stoneworks	3	IT Service Desk	10	1
		Desktop Support	8	2
		Business Services	4	1
SCC	3	Education IT Service Desk	19	4
		Corporate IT Service Desk	11	1
		Corporate Desktop Services	9	4
Poyet	1	IT Support Desk	8	2
Server Control	1	Service Support	13	3
Totals	10 [9 analysed]		99 [90 analysed]	23 [20 analysed]

* The data collected from the PC Clinic at UKHEE as part of the pilot exercise were subsequently discarded for the purposes of analysis as explained later.

Table 2.2: Overview of Non-participant Observation

Semi-Structured Interviews

Further qualitative data were created from conducting semi-structured interviews with IT service support workers. Semi-structured interviewing was selected as a method to access the meanings that IT service support workers

attached to their work which were '*simply not amenable to observation*' (Bryman, 2001, p. 329). The intention was to access workers' '*descriptions, rationalisations and reflections*' (Bloor and Wood, 2006, p.71) on particular areas of interest. The approach taken was to draw up a list of questions that reflected my thinking at the time as to the direction I saw the research heading in. The range of questions asked is shown at Appendix D. As the research progressed, some of these questions were asked less frequently and others added or accorded greater importance such that interviewees might be pressed further using 'probes' (Yates, 2004) to elicit further information or deeper meaning. Thus a balance was struck. On the one hand I sought to retain some degree of control over the direction of the interview. This enabled me to ensure focus on my research concerns as I perceived them to be at the time so that I might later compare and contrast between answers given to the same question. On the other hand I made a conscious effort to be flexible, making in-flight decisions as to whether to follow the interviewee down a tangential path that they took when responding to a question. This, coupled with a deliberate use of silence, backed up with encouraging non-verbal cues to elicit deeper reflections/meanings, enabled the collection of '*rich, detailed answers*' (Bryman, 2001, p. 313). Workers were typically interviewed individually but occasionally small focus groups were facilitated where this was preferred by workers. Tables 2.3 and 2.4 provide a high level summary of the extent to which interview data were collected. See Appendix E for demographic details of interviewees.

The length of interviews and focus groups varied between 17 minutes and 59 minutes (see Appendix D) and took into account my *in situ* sensitivity towards business needs (given that workers were being interviewed during working hours). The total time spent interviewing was 806 minutes (13 hour and 26 minutes), of which 52 minutes of interview data collected at the UKHEE PC Clinic were discarded leaving 754 minutes (12 hours and 34 minutes). The average length of the interviews taken forward for analysis was 36 minutes (see Table 2.4). The quantity of interview data was broadly-speaking evenly spread between the three identified types of IT service support workers.

Organisation (Pseudonym)	Team	Number of Workers Interviewed Individually	Number of Workers Interviewed in Focus Groups	Total Number of Workers Interviewed by Organisation
UKHEE	IT Service Desk	3		5 [3 analysed]
	*PC Clinic**	*2*		
Stoneworks	IT Service Desk	2		4
	Desktop Support	1		
	Business Services	1		
SCC	Education IT Service Desk	3		10
	Corporate IT Service Desk	1	2	
	Corporate Desktop Services	1	3	
Poyet	IT Support Desk	3		3
Server Control	Service Support	4		4
Totals		21 [19 analysed]	5	26 [24 analysed]

* The data collected from the PC Clinic at UKHEE as part of the pilot exercise were subsequently discarded for the purposes of analysis as explained later.

Table 2.3 Overview of Interviews Undertaken by Organisation

IT Service Support Worker Type	Number of Interviews	Total Interview Time (mins.)	Average Interview Time (mins.)
Type 1 Workers (first-line)	8	295	37
Type 2 Workers (second-line)	6	237	40
Type 3 Workers (single-line)	7	222	32
All Workers	21	754	36

Table 2.4 Overview of Interviews Taken Forward for Analysis by IT Service Support Worker Type

Not all pre-prepared questions were asked of all workers (see Appendix D). As researcher, I made *in situ* decisions based on an interpretation of the contextual relevance of each question, an emerging awareness of what questions seemed to be most revealing, any time restrictions and the extent to which emergent questioning/probing used up some of the available time. These interviews and focus-group sessions were audio-recorded and were later transcribed, thus providing a dataset containing written answers to questions which might subsequently be compared and contrasted so as to identify recurring themes and exceptions. In particular, this method enabled differences

and similarities between workers in similar roles (e.g. Service Desk workers) across different organisations and between workers in different roles (e.g. service desk workers and second line workers) within the same organisation.

Other Data Sources

Additionally researcher field notes were made and other data were collected and/or referred to in the course of writing up the research. These included workplace documents (e.g. service performance reports) and publications of the organisations such as their public websites and corporate literature. My field notes were in the form that Bryman refers to as '*jotted*' or '*scratch*' notes: '*very brief notes… jotted down inconspicuously'* to avoid making people self-conscious (Bryman, 2001, p. 305). These jottings comprised records of informal conversations overheard and engaged in personally, notes on meetings with various managers hierarchically at various levels above the IT service support workers observed and interviewed, and more general unstructured non-participant observations on the work setting and 'life' within the work setting. Often these brief notes were expanded upon either later during the working day – again inconspicuously – or between visits. In such cases I relied upon memory to mentally revisit the circumstances, whilst retaining a concern for authenticity.

The Quantitative Dimension

Whilst these data collection methods were grounded in qualitative research theory, a quantitative dimension is acknowledged as an inherent part of the search for understanding the phenomenon under scrutiny (Johns and Lee-Ross, 1998). In qualitative research this quantitative dimension is often overlooked (Miles and Huberman, 1994). As data were collected it quickly became apparent that I was actually engaging in counting to a significant degree. This is not untypical with qualitative research and needs to be acknowledged. As Miles

and Huberman (1994, p.253) note: '*when you say something is 'important' or 'significant' or 'recurrent' we have come to that estimate, in part, by making counts, comparisons, and weights*.' Specifically, in this research, as detailed later in this chapter, the interpretative narratives for each observation were deconstructed into identifiable knowledge form entities and ascribed characteristics relating to sensory use (visual, auditory, tactile) and contextuality (i.e. highly contextual, highly theoretical, or balanced) . Once deconstructed in this way, it became possible to engage in clustering and counting which is associated with quantitative analysis as discussed later in this chapter.

Cross-case Data

Whilst ethnographic methods were used to collect research data, the claim to this study being 'pure' ethnography is limited in as much as the cross-case research design restricted the opportunity to truly become immersed within a single social setting (i.e. a single workplace). The perspective taken is one of perceiving the multiple IT service support workers' work settings as a single 'ITSM workplace' entity, i.e. I have effectively theoretically amalgamated the work settings to formulate the generic, or 'ideal type', ITSM workplace, in line with the Weberian and Schutzian thinking discussed above. This perspective is justified by the argument that the workplaces occupied significantly overlapping 'shared ITSM lifeworlds'. With this perspective it might reasonably be argued that, in line with the ethnographic tradition, the study involved a prolonged period of fieldwork within the ITSM work setting (Bloor and Wood, 1996). It is argued that, by collecting data across multiple workers, teams and organisations, the reliability of the study's generalisable findings is actually enhanced. As Miles and Huberman (1994, p.173) put it: cross-case analysis '*can help us answer the reasonable question, 'Do these findings make sense beyond this specific case?"* Similarly, the use of a multi-strategy research approach with an objective of dovetailing different aspects of the research – sometimes referred to as complementarity - is employed to provide for a more

holistic study of IT service support work as a social phenomenon (Bryman, 2001).

Data Collection Ethics

Given that the research involved the close observation of human participants and openly encouraged them to reveal hidden thoughts/reflections in interview situations there was a need to comply with the highest of ethical research standards. Loughborough University have procedures in place to ensure that the research meets ethical standards and these were followed accordingly. Above and beyond formal adherence to ethical requirements, I consciously employed my own ethical compass in the collection of data. For example, knowing that SCC had been making staff redundant and that the organisation was unionised, I suggested to the manager who was the gatekeeper to accessing the IT service support workers that it might be appropriate for him to seek agreement with the union to my observing workers. This was partially done so as to minimise any perception that I was a 'time and motion' type observer with a management 'efficiency' remit.

In line with the University's procedures I asked all interviewees to complete an Informed Consent Form and informed them of their rights to withdraw from the study at any stage for any reason. Although I had agreed to feedback to management on processes it was ethically necessary for me to be careful not to reveal to management any information about worker behaviour and attitudes that might result in repercussions for the workers. I immediately assigned gender and heritage-appropriate pseudonyms to each of the participants to disguise their identity whilst assisting the reader in their own interpretation of the data. Outside of workplace conversations involving them at no point did I make use of real names. The recorded interviews were kept confidentially and not made available to anyone else. On transcription, appropriate pseudonyms were inserted whenever reference to a real name was made by the interviewee. Whilst my field notes within organisations were made based on covert observation of a broader population of workers than those who had been asked

to complete informed consent forms, when written up, any situations involving the behaviour of individuals were reported in such a way as to ensure their anonymity and with due regard to the ethical debate on invasion of privacy when using covert research methods (see Bryman, 2001, p. 483)

5 Data Analysis

General Approach and Categorisation

In analysing qualitative data two critical questions were addressed: '*Do the subjective meanings found in the data have a more universal validity?*' and '*Are the meanings found 'correct' beyond the researcher's subjectivity?*' (Miles and Huberman, 1994). In manually analysing the data in its entirety, recurring patterns and themes were detected which, following the advice of Miles and Huberman (1994, p.246), were '*subjected to skepticism*' until those patterns and themes became ever more convincing as representative of useful knowledge. In forming these patterns and themes the techniques of clustering and counting were employed (Miles and Huberman, 1994). Clustering involves the analysis of data such that data that has an element of similarity might be aggregated and separated from other data, thus creating meaningful categories that might facilitate discussion centred on that identified similarity. Counting is an integral part of deciding that things seem to be alike. The placing of data into categories implies the accumulation of data such that significance might be accorded based on the quantity of data within those categories. Such clustering and counting proved useful both in the analysis of the transcripts of interviews and analysis of observational data.

Taking advantage of this research being a cross-case study, the tactic of comparison between data sets collected in different organisations from different types of worker was employed in analysis as the '*time-honoured, classic way to test a conclusion*' (Miles and Huberman, 1994, p.254).

To assist in the process of data analysis, the collected data were categorised. Firstly, the data were sorted by pertinence to the academic considerations in the literature reviews presented within Chapters 3 to 5 which had as their respective foci the IT service support worker as IS worker/asset, knowledge worker, and service worker. Whilst acknowledging that this inevitably resulted in a significant degree of overlap, distinct areas from the discussions within these three separate reviews were identified for further inductive discussion with consideration to relevant data collected during the study. For example, data related to worker autonomy was categorised and sorted for consideration within the chapter dedicated to discussing the IT service support worker as knowledge worker; whilst data related to customer interaction was considered in relation to the IT service support worker as service worker.

It was at this point that some of the data collected during the pilot exercise were discarded. Data had been collected at UKHEE from the IT service support team which could be categorised as being made up of Type 1 workers. It had also been collected from a team that had been set up specifically to deal with IT issues that students had with hardware and software that was **not** part of the organisation's infrastructure (i.e. typical incidents involved the failure of students' personal laptops or applications they had selected and installed themselves). Whilst the data collected were considered as being valid generally, they were deemed invalid within the context of this research. As rudimentary analysis was carried out it soon became clear that there was potential that these data might skew findings such that they impeded the objective of offering reliable, generalisable knowledge for the enhancement of 'best practice' within organisational settings in which workers supported IT infrastructures with clear organisational boundaries.

In turn the data collected pertaining to key selected aspects of the literatures on the IS/IT worker, the knowledge worker, and the service worker were analysed, firstly focussing upon the data collected from Type 1 workers, followed by the data collected from Type 2 workers and Type 3 workers. Once analysed in turn, worker types 1, 2 and 3 could then be analysed further in relation to each other through comparison and contrasting.

Analysis of Observational Data: Introduction

Having collected observational data and formulated them into a set of chronological lists of separate observable actions taken by IT service support workers, a framework and method were devised by which these lists might be analysed so as to better understand IT service support work, and particularly something of the nature of the information/knowledge used by workers in its performance. These drew upon (i) 'knowledge, skills and creativity' frameworks proposed by Frenkel *et al* (1995 and 1999) and re-conceptualised by Hislop (2008), and (ii) a typology of knowledge that emanates from the social phenomenological writings of Schutz (Schutz and Luckmann, 1974).

Analysis of Observational Data: Creating a Tool for Comparative and Interpretative Analysis of IT Service Support Work as Knowledge Work

First Steps: Consideration of the Frenkel et al Knowledge, Skills and Creativity Framework

In constructing and refining a framework for the conceptualisation of work, Frenkel *et al* (1995 and 1999) created a reductive model with three dimensions: knowledge, creativity and skills. The meanings of these three concepts are highly contestable and are closely interrelated as well as being related to other concepts such as learning, thinking, practising and crafting (as discussed in Chapter 4). However the model, along with the critical discussion of it by Hislop (2008), remains a good starting point for the construction of an analytical tool that is useful for making sense of the observational data. As regards knowledge, Frenkel *et al* (1995) place an emphasis on the distinction between theoretical knowledge and contextual knowledge (see discussion in Chapter 4), and on the extent to which workers rely upon theoretical knowledge to fulfil tasks. They reject the notion that work that relies upon a high proportion of theoretical knowledge is correlated with creative work. Rather they suggest creativity as '*a*

process of original problem-solving' which involves the worker in '*inferring a course of action from synthesising diverse pieces of information … [that may be ambiguous, incomplete or situated amongst the vast amounts of irrelevant data]*' (p.779). For their framework they suggest a continuum from low creativity to high creativity. The third dimension of skills is further reduced by Frenkel *et al* (1995) to three separate elements: action-centred skills, which focus on tactile sensing and dexterity; intellective skills, which focus on the cerebral; and social skills, which focus on the exchange of knowledge with others. However, as Hislop (2008) notes in his revisiting of the framework, only intellective skills are shown on the model itself reproduced at Figure 2.2.

Diagram redacted for reasons of copyright. Please refer to Frenkel et al (1995)

Figure 2.2: Frenkel *et al*'s (1995) framework originally labelled: 'The Act of Work and Ideal Types of Worker'.

In his critique and re-conceptualisation of the framework model, HIslop (2008) maintains the importance of acknowledging all three of the skill elements identified in the Frenkel *et al* (1995) paper but which were not included in the model, so as to avoid partial and/or distorted representations of work. He notes that to include all three skill elements would make the framework model effectively untenable. His solution is to replace it with a table format in which

language is used instead of positions on three scales. The key words he selects for use in the table are quasi-quantitative interpretative judgements (e.g. low, medium, high = 1, 2, 3) clarified by broader interpretative comments. For example, the table entry for the intellective skills of the Service Engineer is given as 'Medium - regular need to draw on experience to solve non-standard problems'.

There is an implied consensus across the two Frankel *et al.* models and Hislop's table format framework on the separation of skills and creativity. But if we return to the paper of Frenkel *et al* (1995), we might consider more closely their use of words relating firstly to the creative professional and secondly to intellective skill:

1) '*The professional must be creative in inferring a course of action from* ***synthesising*** *diverse pieces of information'* (p. 779) [my emphasis]

2) '*Intellective skills involve reasoning based on abstract cues, explicit inference,* ***synthesis*** *and systemic thinking'* (p.779) [my emphasis].

The shared emphasis on the capability to synthesise information is clear such that creativity and intellective skills might be seen to conceptually share large parts of the same ground, bound together in the 'motive'-driven action to arrive at the 'phantasized' or 'projected' outcome (Schutz, 1953). As Cigman (2011, p. 38) has commented: '*To be highly creative is to have a tendency to work obsessively towards certain ends, often in pursuit of perfection'*. Where IT service support workers choose to develop craftsman-like skills to a point of mastery through an obsession with their craft (as will be discussed in Chapter 4), they may to different extents inevitably think and act creatively as an expression of those skills.

Further we might note that on the Frenkel *et al* (1995) framework diagram (Figure 2.2) the 'routine worker' is shown as demonstrating both low creativity and low intellective skills whilst the conceived 'knowledge worker' is shown as demonstrating both high creativity and high intellective skills. In their paper Frenkel *et al* (1995) quasi-quantitatively populate their framework with five occupations based on their interpretations of separate pieces of research. The

first of these, the customer service representative, whose work bears similarity to that of Type 1 (first line) IT service support worker (as discussed in Chapter 3), is shown as using both low creativity and low intellective skills and thus fits the criteria for a routine worker. At the other end of the spectrum, the architect is shown as using both high creativity and high intellective skills. The other three worker types (skilled production workers, laboratory technicians and registered nurses) as interpreted by Frenkel *et al* are plotted on the framework as demonstrating greater creativity than intellective skills. And yet in the maelstrom of conceptual uncertainty the qualitative concepts of creativity and intellective skills become so intertwined as to make any sharp distinction between the two a barrier to rather than a facilitator of understanding. Whilst accepting that there is value in this quasi-quantitative interpretative framework for gaining a deeper understanding of workers' work activity in terms of the theoretical and contextual nature of knowledge used, in terms of the utility of the framework for fine-grained activity-level analytical purposes, there is, in line with Frenkel *et al*'s (1995) agreement that there is a strong commonality between these concepts, little value to be gained by the separation of intellective skills and creativity. Both involve the very human process of sensing, selecting and synthesising information. The higher the demands for synthesising information, the more intellectively skilful and creative the worker needs to be. The thinking involved in sensing, selecting and synthesising information might be considered to be what Horne and Wootton (2003) refer to as 'applied thinking', which they explain is the higher-order thinking, comprising creative, critical and reflective thinking, that is needed to turn information into knowledge which guides intelligent action.

However, it remains important not to neglect social skills used to gather and consider information in concert with others, and skills that rely upon tactile sensing and dexterity. These might also be considered to be interwoven within this process of sensing, selecting and synthesising information. Indeed, on revisiting the framework a few years later, Frenkel *et al* (1999), considered social skills to be inseparable from intellective skills, combining them along the axis previously reserved for intellective skills and now re-named social and analytical (or intellective) skills (reproduced at Figure 2.3). The incorporation of

action-based skills within this fused 'skills/creativity task requirement' construct is in line with Drew Leder's (1990, p. 1) treatise '*The Absent Body'* which he introduces with a sporting example:

> *I may be engaged in a fierce sport, muscles flexed and responsive to the slightest movements of my opponent. Yet it is precisely upon this opponent, this game that my attention dwells, not on my embodiment.*

By extension IT service support workers might be considered to not dwell on their action-based skills. These skills evolve and exist as one with the worker's thinking as they seek to fulfil the 'motive and project' of resolving an incident. Thus in analysis we might consider an action taken by a worker working on an incident through a shared life-world perspective and conjecture as to the thinking that caused that action.

Diagram redacted for reasons of copyright. Please refer to Frenkel et al (1999)

Figure 2.3: Frenkel *et al*'s (1999) framework originally labelled: 'Workers as Ideal Types and as Located in the Three Types of Workflows'.

This unitary approach to skills is also implicitly adopted within the knowledge work literature that takes a practice-based perspective to knowledge (e.g. Blackler, 1995; Gherardi, 2000, Orlikowski, 2002). Knowledge is perceived as '*a dynamic and ongoing social accomplishment [that arises]… from everyday activities and thus always 'in the making''* (Orlikowski, 2005, p.2). Thus the worker's skilled physical action and communication (i.e. action-based skills and social skills): (i) become an outward expression of knowing, and (ii), by way of sensorial experience, provide input information of further intellective skill expression within a unified brain-and-body process of knowing. As Hislop (2008, p.583) explains: '*processes of knowing and doing are inter-connected through the work practices people carry out [providing] a way of understanding the types of knowing utilised by a wide range of workers'*.

The nature of IT service support work is such that different levels of skill and creativity are required at different times according to the complexity and rarity of the specific task. It follows that analysis of work skill/creativity requirements (i.e. the extent to which the worker needs to sense, select and synthesise information) should be done at activity level. This contrasts with the emphasis on worker-level analysis implied by the Frenkel *et al* framework. At the micro task level (as opposed to the macro work level which was implicitly the foci of Frenkel *et al.* (1995 and 1999) and Hislop (2008)) analysis relates to specific activity for a specific productive purpose over a fixed time period. The boundaries are clear as to what skills/knowledge/creativity etc. being used by the worker are in scope for analysis. Thus, in line with Swart's (2011) emphasis on time-sensitive 'know-how-in-action' as being of greater importance for the creation of value (i.e. in this context appreciation of the service from management and customer perspectives such that individuals and their structural bases [e.g. team, division] remain notionally competitive) than either knowledge as an objective resource or general 'know-how', this research seeks to analyse the knowledge work of IT service support workers from a time-sensitive perspective.

There are six elements of knowledge work within Hislop's tabular reconceptualisation of the Frenkel *et al* framework:

1) action-based skills
2) social skills
3) intellective skills
4) contextual knowledge
5) theoretical knowledge
6) degree of creativity.

To consider each of these elements at the micro level of the time-bound task runs the risk of being over-analytical to the point of obsessive neurosis. Certainly it is important to differentiate between the contextual and theoretical knowledge being used. Indeed, the analysis of these at task level resolves the question posed by Hislop (2008, p.584) after noting that the Frenkel framework places contextual and theoretical knowledge at opposite ends of the knowledge scale: '*where [would] occupations which would simultaneously require equally high levels of theoretical and contextual knowledge ... be placed [?]*'. A similar question had previously been raised by Frenkel *et al* (1999) themselves in their framework-revisit when they wrote: '*it is unclear whether the rising importance of theoretical knowledge implies a decline in the significance of contextual knowledge'*. Their response to this doubt is to adopt what they call the '*theoretical knowledge as complement hypothesis'* in place of the *'theoretical knowledge as substitute conjecture'* (p.64). In doing so they replace the axis that indicates a predominant form of knowledge (i.e. theoretical ***or*** contextual) with an axis that provides a scale from 'Low' to 'High' 'higher order contextual ***and*** theoretical knowledge' (see Figure 2.3). The combination of the two results in a diminution of the utility of the original (1995) model which helpfully suggested that worker activity results from the use of an imbalanced fusion between contextual and theoretical knowledge. To perform an activity a worker combines, to different degrees, knowledge that relates to the local situation and knowledge that is of more generic use. An implication of this axis from the earlier model was that theoretical comparison could be made between workers that relied heavily on theoretical knowledge that is more easily transferable across organisations, and those who build up stores of organisationally valuable knowledge and as a result might typically be more economically vulnerable if and when they are separated from the organisation.

In their reconceptualisation, Frenkel *et al* (1999, p.67) argue for an implied direct correlation between this 'knowledge' axis and the 'creativity' axis:

> *Workers use theoretical and contextual knowledge to identify, diagnose, and resolve problems… This implies that the more complex and unique the problem, and the more workers are required to combine theoretical and contextual knowledge through analysis and inferencing, the greater the creativity required'.*

In the transition of this 'knowledge' axis from the 1995 paper to the 1999 revisit, Frenkel *et al* have moved from considering the amount of theoretical knowledge used vis-à-vis the amount of contextual knowledge used by workers regardless of the totality of personal knowledge used in the role, to considering the extent to which they use both theoretical and contextual knowledge in the role ***and*** the extent to which these are combined. Whilst it addresses a weakness in the 1995 model, the knowledge scale used in the 1999 model remains somewhat confusing. The scale still does not indicate the extent to which, individually, theoretical and contextual knowledge are used by the worker. Neither does it indicate anything of the balance between theoretical and contextual knowledge used by the worker (e.g. 90% theoretical to 10% contextual; 45% theoretical to 55% contextual).

This confusion arises from the focus of analytical attention. Frenkel *et al* (1999) write of workers using knowledge whilst working on specific problems, implying a need for the focus to be at task level. However, both frameworks focus their analytical attention on the worker at the open-ended occupational level rather than at the fixed-time task level. It is contended that it is at the task level that workers might more usefully be observed and analysed, within time and motive boundaries, in terms of the interpreted extent to which:

(i) they use theoretical knowledge;
(ii) they use contextual knowledge; and
(iii) there is a balance or imbalance between theoretical and contextual knowledge used.

It is suggested that when considered at task-level rather than work-level (i.e. considering actual activity by a real worker rather than a perceived amalgam of the workload of an ideal type of worker) there is a third way of thinking about theoretical and contextual knowledge to contrast with the 'theoretical knowledge as complement hypothesis' and 'theoretical knowledge as substitute conjecture'. This might be referred to as ‘a knowledge totality conjecture’. Within the fixed timespan of specific task activity, the knowledge used to fulfil the task will have boundaries. The analytical scope is clear, bounded by time and purpose. These boundaries theoretically provide an objective quality to the totality of the knowledge used. The observational data, comprising three sets of tasks performed respectively by Type 1, Type 2, and Type 3 workers, were analysed from a shared life-world interpretative perspective to consider the extents to which each of these types of worker made use of both theoretical and contextual knowledge as they, through time, took action.

In this way, the (im)balance between theoretical and contextual knowledge use could be considered and might be represented quasi-quantitatively as two percentages totalling 100 per cent (see Figure 2.4). This is not dissimilar to the knowledge scale on Frankel *et al’s* 1995 model (Figure 2.2), but differs in that it does not presume that theoretical knowledge is superior. Rather it seeks to understand the nature of the work of different teams and different types of work through observation of specific tasks.

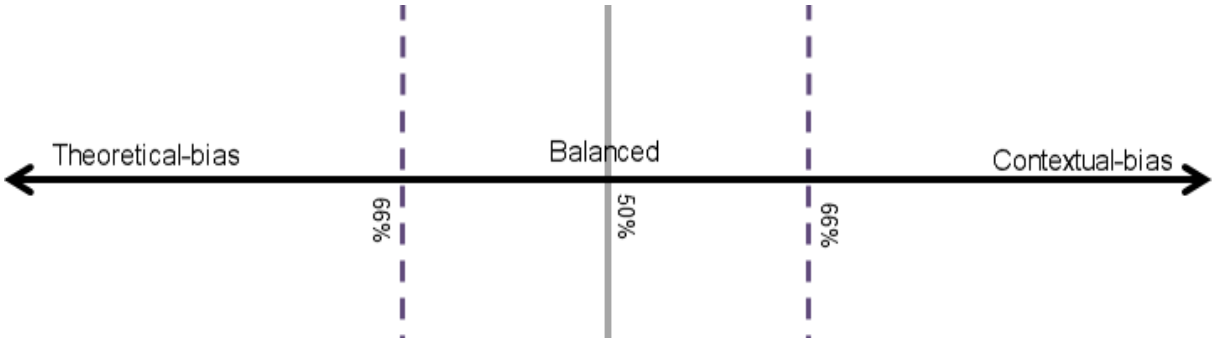


Figure 2.4: Scale to show the balance between theoretical and contextual knowledge used by defined workers.

Returning to Hislop's (2008) identification of six elements, beyond theoretical and contextual knowledge, the three skill elements and creativity might best be considered at the micro task/incident level as being one single interwoven construct that relates to the extent to which the worker has a requirement to use personal skills and creativity, or, as discussed above, is observed sensing, selecting and synthesising information.

Skill and Creativity Requirement: Facilitating Task Level Interpretation

Tasks that have been proceduralised require workers to learn how to fulfil their role within the explicitly or implicitly-defined process. The mere fact that the steps of the task have been defined suggests the task is lacking in complexity and is problem-resistant. As tasks become more familiar to the worker as they repeat them again and again (perhaps using variable contextual data), they will become easier for them to complete with a reduction in the need to be creative - even if the work is objectively complex. This distinction between objective complexity and subjective (to the worker) complexity is considered to be important yet is overlooked in Frenkel *et al*'s framework, which places at opposite extremes the routine worker and the knowledge worker or professional worker, implying that knowledge/professional workers do not work to routines or face pressure to work in a more routinised fashion. A newspaper investigation into vascular surgery (Boseley *et al*, 2010), which is an objectively complex procedure, found that patients are less likely to die when they are operated on in busier hospitals where surgical teams are more skilled because they do more of the same operations. As Toynbee (2010) commented at the time: '*It has been known for decades that to be safe, a surgeon needs to perform the same tricky operation over and over again, reaching a critical mass of experience'*. Similarly Ericsson *et al*'s (1993) review of research on skill acquisition pointed to the importance of having ample opportunities to repeat and gradually refine performance of a task (alongside having a well-defined goal, having the motivation to improve and getting performance feedback). The implication is that as surgeons gain experience and expertness by performing the same procedure (albeit with different contextual factors) again and again, the work becomes significantly subjectively less complex as the activity becomes more of a proceduralised routine to the surgeon in which the

contextuality becomes subsumed within the theoretically learned knowledge. Over time, the complexity of a vascular operation (i.e. knowing what decision and action to take based on the data being sensed in real time) becomes part of the routine. Thus, in this example, the surgeon might be considered to be at once a routine worker and a professional worker. Her measured clinical performance improves as her work becomes more routinised. She might be said to have acquired greater 'routine expertise' (Hatano and Inagaki, 1986) yet as the procedure becomes more routine the subjective requirement for skill/creativity falls. The task becomes familiar to her and she follows a well-practiced path. Of course, at task level, complications may occur or unusual contextual factors might need to be considered, at which point she would need to call upon 'adaptive expertise' (Hatano and Inagaki, 1986) to fulfil the requirement for greater skill/creativity.

Building from this discussion, the procedural nature of the task and the worker familiarity with the task are presented as a matrix at Figure 2.5 which has been constructed to assist in the analysis of task-level observational data; specifically to analyse each distinguishable incident (or service request) encountered by an IT service support worker. This matrix suggests a type of worker who might be required to fulfil the specific task relating to each incident/service request. At the top left quadrant the tasks relating to the working of an incident might be performed by a worker who I have labelled a 'Robot' evoking the treatise of George Ritzer: '*The MacDonaldization of Society*' (1996; 2008). The work of the robot is considered to be low in its skill and creativity requirements because tasks have become proceduralised and are repeated regularly with minimal contextual difference. The sensing, selecting and synthesising of information is done unconsciously by the trained worker following a tried and tested pathway with which they have become familiar. An example from IT service support work would be a password reset request.

Moving down to the bottom left quadrant the incident tasks are still implicitly or explicitly pre-defined for the worker so that the work asserts power over the worker. But here the task is not familiar to her, and thus it might be considered that the overall workload contains some variety. I've chosen for this worker the label of 'bureaucrat', suggesting that she is following 'red tape' guidelines but

the task is more demanding of cerebral capability than a task for the 'robot'. This task requires the worker to consciously engage with it so as to complete it satisfactorily. An example from IT service support work might be a request for remotely installing onto a customer's machine a Windows-based application that is not widely used within the organisation but for which the installation might be reasonably assumed to follow a standardised pathway.

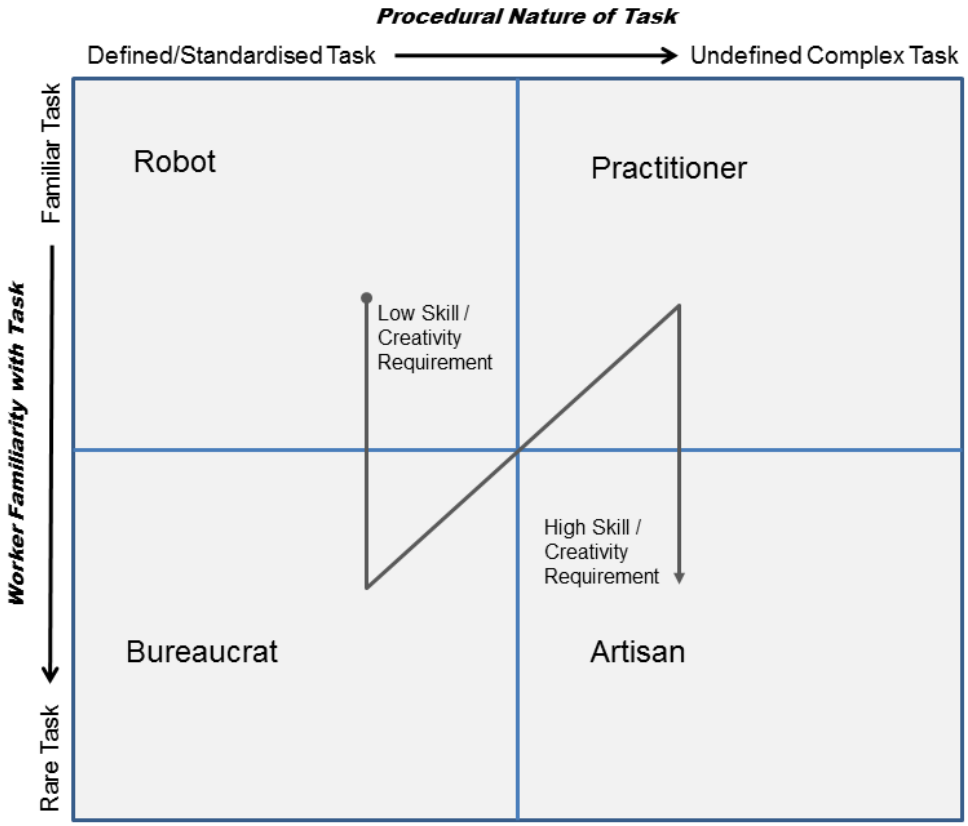


Figure 2.5 Worker Type for Task Requirement Matrix.

It is proposed that there is a greater requirement to skill and creativity in the top right quadrant. The task in this quadrant (like that performed by the 'robot') is familiar to the worker, implying that this is work that is appropriate to the reason for the worker having been employed and, thus, implicitly sanctioned by management for definable and measurable organisational benefits. The task in this quadrant however is more complex, requiring the use of learnt skills and greater problem-solving. In line with a discussion to follow in Chapter 4 about functional practitionership, it seems appropriate to label the worker working on incidents in this quadrant 'practitioner'. An example from IT service support

work might be the building of a desktop computer to meet a bespoke hardware and applications requirement for a specific worker.

The matrix suggests that the greatest requirement for skill and creativity is for tasks falling into the bottom right quadrant. The worker working on such incidents has been labelled 'artisan' to evoke Sennett's treatise *'The Craftsman'* (2009). Here the task is complex and quite unfamiliar to the worker. Thus the worker's route to completion of the task becomes one of deep exploration and extensive synthesis of information, drawing on a depth of underpinning skills and knowledge, and requiring the creation of new patterns or recipes of knowledge to bring about the resolution. An example from IT service support work might be the investigation of a mainframe or server failure where there is no obvious cause or history of failure.

It is proposed that this matrix might stand on its own merits as a useful tool for analysing tasks undertaken by knowledge workers, specifically in this case IT service support workers. This research makes use of this tool for this purpose.

Presenting the IT Service Support Analytical Tool

Resulting from the analytical foci applied to the theoretical/contextual bias of the work (Figure 2.4) and the skill/creativity requirement (Figure 2.5) at task level, a new tool was created to assist in the comparative and interpretative analysis of IT service support work at team level as a manifestation of knowledge work (Figure 2.6).

This model takes the zig-zag line from the 'Worker Type for Task Requirement Matrix' model (Figure 2.5) that reflects the extent to which incidents require the worker to sense, select and synthesise information, and stretches it out along the X axis. Thus observed work, as an interpreted typification of all the observed tasks undertaken by a particular IT service support team, might be considered along this continuum from 'Robotic', through 'Bureaucratic' and 'Practice' to 'Craft'. These latter two 'work types' are differentiated to reflect the difference between a practitioner approach and a craftsman/woman approach as will be discussed in Chapter 4.

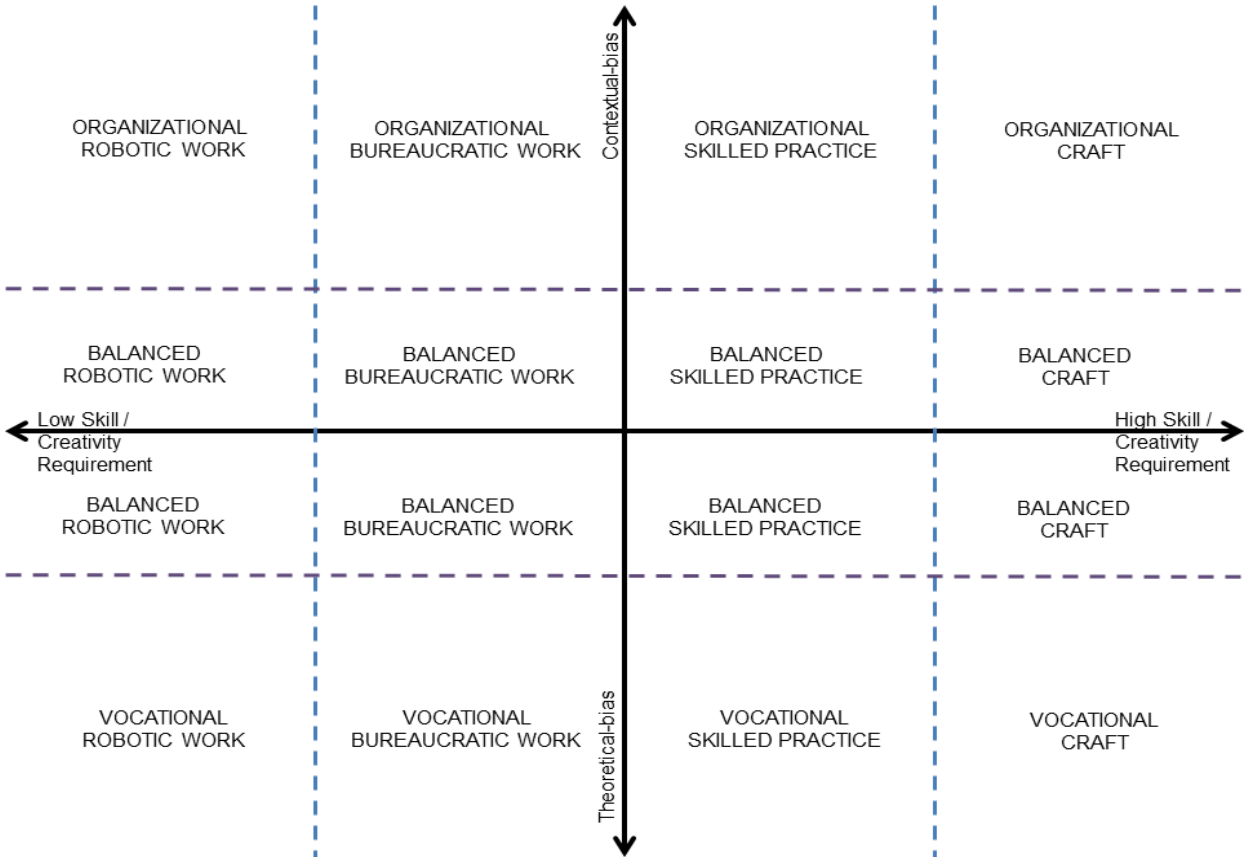


Figure. 2.6: A Tool for the Analysis of IT Service Support Work as Knowledge Work.

The Y axis reflects the balance between theoretical knowledge and contextual knowledge within the totality of knowledge across all incidents observed being worked by members of a particular team. Plotting along this axis relies upon a shared life-world perspective being taken by the observer such that a fair judgment might be made as to which expressive forms of knowledge used might be considered primarily contextual in nature, which might be considered primarily theoretical in nature and which might be balanced somewhere between the two.

Knowledge Reduction into Entities: a Schutzian Approach

The analytical tool implicitly considers knowledge as comprising entitative elements. This is in line with the objectivist positioning of those who advocate codification and capture of knowledge (e.g. Mertins *et al*, 2003; Kankanhalli *et*

al, 2005). My interest however was not in seeking to codify and capture workers' knowledge itself but rather in making an attempt to understand something of the totality of knowledge used by workers in productive activity by adopting a novel interactionist perspective (Swart, 2011) that is based on Schutz's writings on knowledge, and which takes an interest in the interaction between knowing and artefacts whilst seeking to analytically and reductively produce sets of entities that have been separated out, comprising:

(i) those things that are cerebrally known and used by the worker during the working of incidents, and
(ii) those things that are sensorially experienced by the worker during the working of incidents.

This approach makes a theoretical assumption that if the observer and the observed both have extensive experience of working within the same field of work (in the case of this research, ITSM) then to a significant extent they will share a common working 'life-world' perspective which will similarly be partially shared with the worker's colleagues and customers (Schutz, 1953; Brannick and Coghlan, 2007). Whilst it is acknowledged that the observer cannot possess the same 'stock of knowledge' as the worker being observed, because clearly this resides in the thinking mind of the worker, the social phenomenological perspective of Schutz is adopted to justify the validity of the approach:

> *I take it for granted that other men also exist in this my world... endowed with a consciousness that is essentially the same as mine. Thus... my life-world is not my private world but, rather, is intersubjective; the fundamental structure of its reality is that it is shared by us* (Schutz and Luckmann, 1974, p.4).

In the past, expert specialised knowledge will have been acquired (Luckmann, 1983) by both observer and observed through secondary socialisation within typified ITSM settings. Such specialised 'life-world' knowledge relates to Polanyi's (1969, p. 375) concept of '*superior knowledge* [that] *relies blindly on a whole system of [accepted] collateral facts and values*'. The theoretical

assumption asserts that by observing the worker's outward behaviour the 'shared life-world' researcher might deduce the thinking of the worker's mind (Wilson, 2002) and gain knowledge of the tacit dimension of such knowledge (Polanyi, 1966; Tsoukas 2003). Thus, as workers took specific actions I was able to use 'superior knowledge' from a 'shared vocational life-world', so that I might 'see' in real-time, and subsequently through analysis, what the workers were 'seeing'. Similarly I could listen to conversations as the workers had them and be able to interpret their meaning using my experiential knowledge acquired whilst working in similar work settings, accepting the limitations of such interpretation on account of me being in part an outsider of the life-world 'reality' (e.g. through unfamiliarity with context-specific language and exclusion from the voice of one of the parties holding a telephone conversation).

It is the knowledge gained by the researcher about the knowledge employed by the worker that is then objectified, forming a representation of what might be termed the 'experiential knowledge' of the observed workers. This representation may then be analysed and discussed through comparison, clustering and counting. Inevitably, and contrary to accepted practice-based epistemologies of knowledge (Hislop, 2005), this approach is entitative in that it seeks to understand something of the totality of the knowledge employed by the workers by breaking it down into entities and then to categorise those entities. Rather than being a codified representation of the productive knowledge of the workers (as pursued by advocates of knowledge management applications: see Trusson *et al.*, 2013), these identified entities are presented merely as labels that are indicative of the productive knowledge as it is experienced by the worker cerebrally and/or sensorially. For example, whereas objectivist knowledge codification approaches might result in the capture of detailed step-by-step instructions on how to install an application onto a laptop, this approach merely identifies and records that the worker knows how to install an application onto a laptop and the events and objects she encounters in doing so via her senses of sight, hearing and touch. Each such entity might then be considered as to whether it represents primarily theoretical knowledge (e.g. how to install Microsoft Office onto a laptop, or how to edit a routing table), primarily contextual knowledge (e.g. who to escalate an incident to, or how to change

settings for an in-house bespoke application), or fairly evenly balanced (e.g. how to edit and reactivate a parameter file relating to a specific service; what might cause a known customer's specific server to be running slowly).

This reduction of a totality of worker knowledge fixed within incident boundaries into entities makes use of a typology of experiential knowledge that is based upon Schutz's conceptualisation of knowledge (Schutz and Luckmann, 1974). In his discussion of the everyday life-world, Schutz effectively offered his own typology of knowledge which for the purposes of this research has been reformulated into a structural form (see Figure 2.7) that allows for a more rational approach to data analysis than might otherwise be possible. Schutz (Schutz and Luckmann, 1974) suggested that we each possess a stock of knowledge that serves us as we go about our everyday lives. Schutz argued that objects and events confront this stock of knowledge:

> *Each step of my explication and understanding of the world is based at any given time on a stock of previous experience, my own immediate experiences as well as such experiences as are transmitted to me from my fellow-men... All of these communicated and immediate experiences are included in a certain unity having the form of my stock of knowledge, which serves me as the reference schema for the actual step of my explication of the world. All of my experiences in the life-world are brought into relation to this schema, so the objects and events in the life-world confront me from the outset in their typical character – in general as mountains and stones, trees and animals, more specifically as a ridge, as oak, birds, fish, and so on.* (Schutz and Luckmann, 1974, p. 7)

From this we are directed towards paying attention to the experience of the IT service support worker as she seeks to understand and complete the tasks in front of her; to interpretatively identify those aspects of her personal stock of knowledge that she is relying upon, and the objects and events that confront her along the journey from when she starts working on an incident to when she

completes it. Thus from an experiential perspective there are present, within the context of worker activity, two distinct but intrinsically interwoven forms of experiential knowledge: the cerebral and the sensorial.

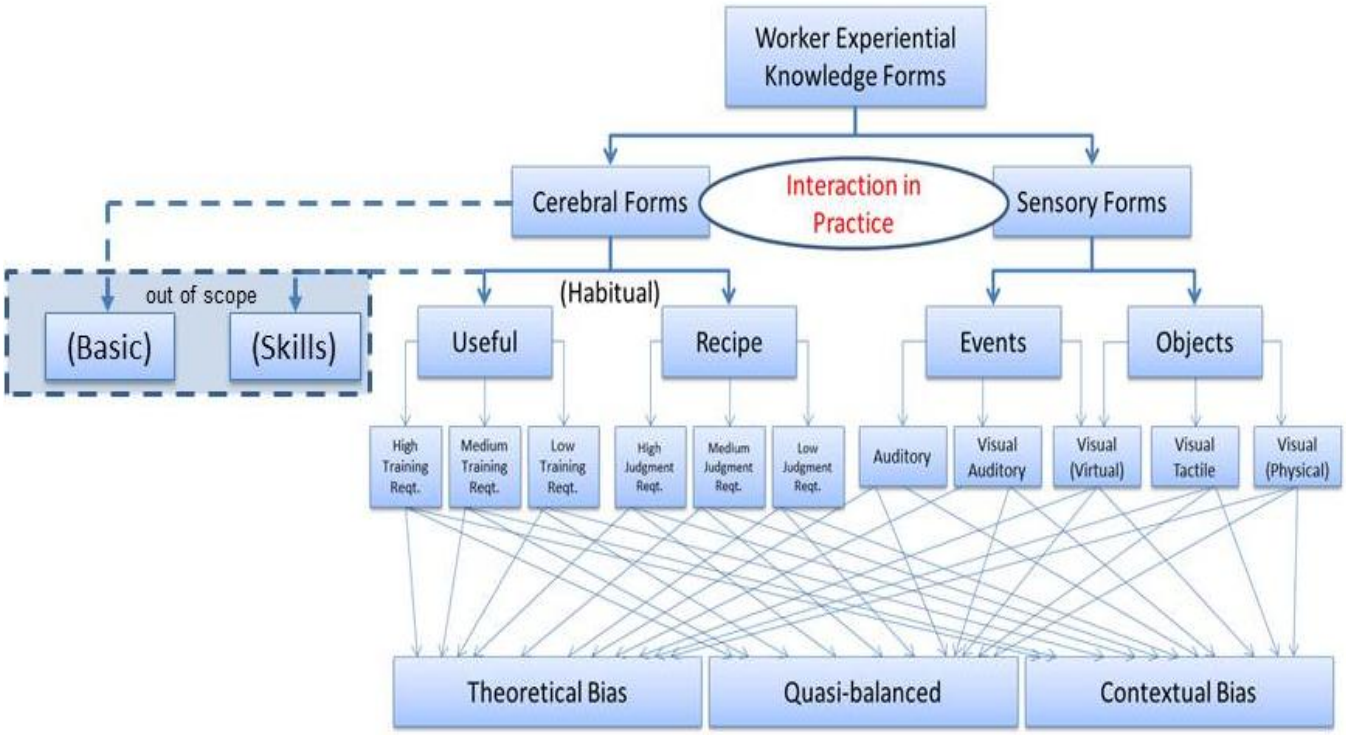


Figure 2.7: A Knowledge Forms Typology Model influenced by Schutz.

Schutz defines two types of cerebral knowledge: 'basic' and 'habitual'. He reduces 'habitual knowledge' down to 3 forms which he refers to as: 'skills', 'useful knowledge' and 'knowledge of recipes'. 'Basic knowledge' is that knowledge that is fundamental to human nature with no social variants, such as the knowledge that something is in reach (Abercrombie, 1980). 'Skills' are described by Schutz (Schutz and Luckmann, 1974, p. 107) as: '*such habitual, functional unities of bodily movement... as have built upon the fundamental elements of the usual functioning of the body... e.g. swimming*'. Similarly, in the context of considering the work of IT service support workers, 'habitual skills' might be extended to include skills that one might reasonably expect to be common to all such workers (e.g. how to use a mouse or keyboard). 'Basic knowledge' and 'skills' might be disregarded from consideration of the specific

specialised experiences of different IT service support workers as it can reasonably be assumed that all able-bodied workers will possess and use these in fairly equal measure. Rather, cerebral forms of knowledge (or what might also be referred to as the worker's reference schema) might be conceived as comprising those Schutzian forms of habitual knowledge that most differentiate individuals in activity: 'useful knowledge' and 'knowledge of recipes'.

Schutz defines 'useful knowledge' as '*skills... in the work zone... [where] it is completely 'self-evident'... to us that we 'can do' this or tha*t' (Schutz and Luckmann, 1974, p. 107). This definition might usefully be refined for the purposes of considering IT service support work such that it refers to the application of skills that have been learned formally through training and reinforced over time through repeated use. For the purposes of analysis 'useful knowledge' was reduced down into those skills that might have required a high, medium or low training requirement to result in self-evident competence. Schutz (Schutz and Luckmann, 1974) writes about 'knowledge of recipes' or cookbook knowledge as partially overlapping with useful knowledge. The interpretation of knowledge of recipes (or recipe knowledge) for this study is of it referring to tacit knowledge that enables the worker to recognise situations as having typical features and using related typical methods to bring about recognisably typical results (Schutz, 1964; Polanyi, 1966). Within the context of observing IT incidents it refers to the fine-grained and creative application of 'useful knowledge' skills by a worker addressing specific questions posed within the 'Action' stage of the 'Course of Action Process' (see Figure 2.1), taking into consideration the contextuality (e.g. what might cause a specific model of server to overheat?). Thus examples of 'knowledge of recipes' might include the application of intuition or 'compressed expertise' (Davenport and Prusak, 1998), or what Sadler-Smith, (2010, p. 24) refers to as '*gut feeling [as] the payback for years of learning, practice... and mistakes'*. And it might also involve significant conscious and creative mental effort and judgment drawing on experiences that share similar features, providing as a by-product incidental learning (Marswick and Watkins, 1990). In this 'cookbook' form knowledge is similar to Tsoukas and Vladimirou's definition of knowledge (2001, p. 973): '*the individual capability to draw distinctions, within a domain of action, based on an*

appreciation of context or theory'. It is the form of knowledge that is typically used by IT service support workers in decision-making as they investigate, diagnose and resolve unfamiliar or highly contextual incidents, relying on a mix of deliberate and instinctive thinking (Gladwell, 2006). Given this emphasis on judgment and creativity, identified forms of recipe knowledge might be reduced down according to a 'shared life-world' researcher interpretation as to whether the specific piece of identifiable knowledge required a high, medium or low level of judgment. Inevitably, this interpretation is highly subjective and any subsequent quasi-scientific analysis using the quantification-biased techniques of allocating weightings, counting and clustering must be regarded with significant caution.

Objects and events in the worker's 'life-world' confront her primarily via her primary senses of sight, hearing and touch: physical objects such as technical manuals, cables and computers; virtual objects such as computerised incident records, web pages and e-mails, and events such as the reporting of an incident by a customer, an instruction from a manager or an error message encountered whilst attempting to resolve an incident.

Sensorial events are defined by Schutz as being '*interruptions in the flow of experience*' (Schutz and Luckmann, 1974, p. 128) that may or may not be useful for the task at hand to be completed, but cause the worker to consider the implications of the event and make a decision accordingly. Events might be conceived as being ephemeral and transitory, and demand of the worker that they make an immediate decision to take an action. In this respect an event can be seen to assert control over the worker's present time and thus restrict their autonomy. Typically events will be sensed auditorially (e.g. a phone call), visually (e.g. an error message) or a combination of both (e.g. a colleague interrupts the worker, changing her focus of attention).

By contrast, sensorial objects are those entities that the worker encounters during the timeframe of working on an incident but which exist across a variable time-frame, and where the demand upon the worker to take action at the time of sensory encounter is less urgent. In this respect an object does not assert control over a worker's immediacy in the same way that an event does. There is

typically more time available to select information from an object than from an event and to contemplate over the object because there is a less pressing time demand for a response compared with an event. Nonetheless a worker subjectively encounters an object as a relevant entity in the pursuit of her objective to complete the task at hand. Typically objects will be sensed visually (e.g. an email retrieved from the in-box or a technical manual) or using a combination of vision and touch (e.g. a hardware item under repair).

Having interpretatively identified specific knowledge entities (i.e. 'useful' and 'recipe' knowledge entities, and 'event' and 'object' entities) from the observations of workers working on incidents assigned to them, each entity might be considered according to whether it is primarily theoretical or primarily contextual in nature, or a fairly even combination of theory and context. Once this has been done, the model presented at Figure 2.7 becomes a potentially useful interpretative tool for the analysis of worker activity enabling differentiation between different teams and types of IT service support teams [i.e. Type 1 (first-line), Type 2 (second-line), Type 3 (single-line)] according to the skill/creativity requirement and the theoretical/contextual balance of the knowledge used. Thus we might present diagrammatically a representation of each team and each type showing the extent to which they typically work :

(i) in a relatively routine manner repeatedly reusing knowledge/skills or, conversely, is faced with lots of different challenges that requires greater creativity and intellective skills; and

(ii) primarily with contextual knowledge that is comprehensible, relevant and/or valuable within the organisation but lacking in comprehensibility, relevance and/or value outside of the organisation or, conversely, work primarily with theoretical knowledge that is comprehensible, relevant and/or of value across a range of IT service support organisational settings.

The high-level plotting of a specific team's position on the tool's grid results from the collection of low-level task observational data as previously discussed.

Each chronological list of work actions taken by a worker when working on an incident was analysed so as to identify what knowledge forms (cerebral and

sensorial) were used by the worker at each step. Examples of such analysis are included at Appendix J and a small extract of one incident is shown below for illustrative purposes (Table 2.5).

Step	Chronological Occurrence. IT Service Support Worker…	Type of Knowledge Form	Actual Knowledge Form	Theory: Context Bias of Actual Knowledge Form
10	Walked to the front of the cabinet and noted that there was still nothing showing on the screen.	Visual Virtual Event	Blank screen indicating non-connection of server	Theoretical
11	Returned to back of the cabinet and moved a cable to a different location.	Recipe (medium judgement requirement)	What might cause non-connection to server	Theoretical
		Visual Tactile Object	Cabling	Theoretical
12	Went to the front of the cabinet and noted that there was now a screen showing.	Visual Virtual Event	Non-blank screen indicating connection to server	Theoretical
		Recipe (medium judgement requirement)	How to connect directly to server	Theoretical

Table 2.5 Extract of Chronological List following Initial Analysis.

Subsequent to this initial analysis of the narrative, a data analysis sheet for each incident was produced by transferring details of the identified knowledge forms grouped by knowledge form type. Samples of these are also shown in Appendix J. The next step of the analysis was to take this data which, given its reliance on language to describe each identified knowledge form, was fundamentally qualitative and to produce unique quantitative grid patterns to illustrate and represent for each team and for each worker type the nature of the knowledge that was typically used in the course of opening, investigating, diagnosing and resolving incidents. The layout of these grid patterns are explained in detail at Appendix K, along with the presentation of patterns created for a sample team for each of the three worker types, and composite patterns representing the work of each of the three worker types. The creation of these patterns enabled evidence-based visual comparison to be made

between the nature of the knowledge used respectively by Type 1 (first-line), Type 2 (second-line) and Type 3 (single-line) workers. These patterns are discussed later in this thesis, primarily within Chapter 4.

Through this method, deeper analysis of the knowledge forms (i.e. events, objects, 'useful knowledge' and 'recipe knowledge') became possible; for example, the extent to which the different observed workers, by team and type, used their senses to different extents and used different proportions of theoretical and contextual knowledge. As discussed later in Chapter 4, and at Appendices L and M, pie charts are used to assist in such comparisons. The 'recipe knowledge' data are identified as more important than the 'useful knowledge' data on account of it being more representative of the personalised tacit knowledge and skills that cannot easily be codified and rationalised for corporate ownership yet are crucial for the creation of organisational competitiveness (Swart and Kinnie, 2003). It is therefore the accumulation of interpretations for each team of the used 'recipe knowledge' as being either contextually-biased or theoretically-biased that is quantified into two percentages totalling 100 per cent. The percentage of the contextual-bias for each team was then transferred onto the 'Analytical Tool for the Analysis of IT Service Support Work as Knowledge Work' (Figure 2.6: Y Axis). The resulting diagram showing positions on the tool's grid for each of the observed teams is presented and discussed in Chapter 4.

Analysis of Interview Data

The interview data were analysed using hermeneutical content analysis techniques (Bryman, 2001). Each transcribed interview was trawled for text that conveyed the authors'/speakers' subjective meanings relating to various research dimensions, some of which materialised, either expectedly or unexpectedly, directly from the answers given to specific common questions asked, and some of which inductively emerged as being of relevance because similarities between what interviewees said were manually identified when reading the transcriptions. These research dimensions included:

- Qualifications and vocational background
- Identification with IT as a career
- Status within the organisation
- Work autonomy
- Developmental experiences at work
- Work intensity
- Customer interaction and customer-orientation
- Exposure to service-oriented HRM practices

Structuring the analysis thematically enabled the voices from within specific communities to be heard (Marcon and Gopal, 2008) in relation to each of these themes. These specific communities might be identified as the following analytical groupings: team; organisation; IT service support worker type (e.g. Type 1 Service Desk worker); IT service support workers, IT workers, knowledge workers and service workers. The manual analysis of the transcriptions of the interviews, had an objective of detecting subjective meanings - i.e. '*descriptions, rationalisations and reflections*' (Bloor and Wood, 2006, p.71) – that could not be reliably ascertained through observation alone (Bryman, 2001). By reading and reflecting upon these individual subjective meanings, recurring patterns and themes were detected (Miles and Huberman, 1994) so as to present to the thinking and interpretating reader a picture of the typical IT service support worker and within that broad grouping, differences between the typical Type 1, Type 2 and Type 3 worker.

6 Research Settings

The research took place across five organisations that had teams that provided an IT service (see Table 2.1). Type 1 (first-line) work was observed at UKHEE, Stoneworks and SCC; Type 2 (second-line) work was observed at Stoneworks and SCC; and Type 3 (single-line) work was observed at Server Control and Poyet Systems. High level information on the research settings is provided below, differentiated firstly by work type and then by team.

Interpretative and ethnographic portraits of life within each of these teams can be found at Appendix F. These portraits largely draw upon journal data recorded at the time of observation as well as publicly-available sources of information and other data sources accessed at the time of observation. The value of them to the thesis is that they provide some context for the reader prior to the chapters that discuss the observed workers from the three aspects of IS worker (Chapter 3); knowledge worker (Chapter 4), and service worker (Chapter 5).

Four teams of Type 1 Workers were visited in three organisations: SCC, UKHEE and Stoneworks (Table 2.6). During these visits 36 separate incidents or service requests, of variable time duration, were observed being worked on by seven different workers.

Organisation	Team	Ref. Code (used to indicate worker's team)	Incidents / Service Requests Observed	Workers Observed	Workers Interviewed
SCC	Education Services IT Service Desk (first line first tier work)	SCES	14	3	2
SCC	Corporate Services Service Desk (first line first tier work)	SCCS	4	1	2
UKHEE	IT Service Desk	UKHS	8	2	3
Stoneworks	IT Service Desk	STOS	10	1	2
	TOTAL		36	7	9

Table 2.6: Type 1 Teams Visited

The two SCC service desks were located five miles apart in different suburban towns and operated semi-autonomously under separate local management with both local managers reporting into the IT Service Delivery Manager. Both teams received their workload from IT service users via

telephone, email or Internet with local arrangements in place to ensure that telephone calls were answered promptly whilst ensuring time could be set aside for workers to work on investigating and resolving incidents without the telephone interrupting them. The service desk workers at UKHEE and Stoneworks similarly worked in single open plan offices, with the Stoneworks' service desk differing from the other service desks in that more ordered and less personalised cubicle workspaces were allocated to each worker.

Nine 'Type 1' workers were interviewed:

- Adam and Sandra (SCES)
- Judy and Kate (SCCS)
- Asghar and Ravi (STOS)
- Jonathan, Doris and Navinda (UKHS).

Basic demographic details of the interviewees are shown at Appendix E. This includes gender (5 female: 4 male), age (4 X 20-29 bracket; 2 X 30-39; 1 X 40-49; 2X >50), years working in IT (range 2 to 44 years), tenure within organisation (range 1 month to 22 years), and level of educational and professional qualification[1] (range Level 2 to Level 6; average level of 3.8 – see footnote 1).

Five sets of Type 2 Workers were observed during visits to SCC and Stoneworks (See Table 2.7). During these visits 33 separate incidents or service requests, of variable time duration, were observed being worked on by eight different workers.

The five teams here include the two service desks included amongst the Type 1 teams. This is because these teams operated a 2–tier process, whereby those workers providing first-line service had the option of escalating incidents to a second-tier within the same team. These second-tier workers were able to take a further look at the incident to see if it could be resolved without the need to escalate to a second-line team such as Desktop Support.

[1] Levels from broadly corresponding frameworks: NQF (National Qualifications Framework); QCF (Qualifications and Credit Framework) and FHEQ (Framework for Higher Education Qualifications) (Directgov, 2011).

In effect, because these second-tier workers did not have to deal with incoming calls and emails in the same way as Type 1 workers, they are categorised here as Type 2 workers: they were, in effect, back office workers rather than front-line workers. The other teams categorised as doing Type 2 work supported users of the systems but typically only had contact with those users at their own initiation after having had a particular incident escalated to them by a Type 1 worker. The two desktop support teams dealt with incidents related to the general applications and hardware used by workers within their organisations. The Stoneworks' Business Service team workers dealt with incidents related to a tailored Enterprise Resource Planning (ERP) system and was staffed by workers who together had significant experience from across the Stoneworks business.

Organisation	Team	Ref. Code	Incidents / Service Requests Observed	Workers Observed	Workers Interviewed
SCC	Education Services IT Service Desk (1st line, 2nd tier work)	SCES	5	1	1
SCC	Corporate Services Service Desk (1st line, 2nd tier work)	SCCS	7	1	1
SCC	Corporate Services – Desktop Services	SCCD	9	3	4
Stoneworks	Desktop Support	STOD	8	2	1
Stoneworks	Business Services	STOB	4	1	1
		TOTAL	33	8	8

Table 2.7: Type 2 Teams Visited

Eight 'Type 2' workers were interviewed:

- Stephen, Tom, Dick and Harry (SCCD)

- Roger (SCCS)
- Gareth (SCES)
- Lauren (STOB)
- Charles (STOD).

Basic demographic details of the interviewees are shown at Appendix E. This includes gender (1 female: 7 male), age (1 X 20-29 bracket; 3 X 30-39; 3 X 40-49; 1 X >=50), years working in IT (range 3 to 23 years), tenure within organisation (range 1.5 to 20 years), and level of educational and professional qualification (range Level 2 to Level 6; average level of 4.75).

Two sets of Type 3 workers were observed during visits to Server Control (SER) and Poyet Systems (POY) (See Table 2.8). During these visits 22 separate incidents or service requests, of variable time duration, were observed. These incidents/service requests were worked on by five different workers. Seven Type 3 workers were interviewed for between 30 minutes and 1 hour, using a semi-structured method, using a range of questions designed to develop an understanding of their work and their motivations.

Organisation	Team	Ref. Code	Incidents / Service Requests Observed	Workers Observed	Workers Interviewed
Server Control (UK)	Service Support	SER	14	3	4
Poyet Systems	IT Support Desk	POY	8	2	3
		Total	22	5	7

Table 2.8: Type 3 Teams Visited

The common denominator between these two teams was that they both were the single point of contact for customers reporting incidents via telephone, email or Internet interface, and both had very limited opportunities for escalation (see team portraits at Appendix F for details). In this sense their work combined the work of the Types 1 and 2 workers.

Seven 'Type 3' workers were interviewed:

- Nigel, Lionel, Darren and Anthony (SER)
- Mike, John and Paula (POY)

Basic demographic details of the interviewees are shown at Appendix E. This includes gender (1 female: 6 male), age (3 X 20-29 bracket; 4 X 30-39), years working in IT (range 5 to 14 years), tenure within organisation (range 0.2 to 7 years), and level of educational and professional qualification (range Level 2 to Level 7; average level of 5).

7 Conclusion

The purpose of this chapter has been to set out the philosophical and academic underpinnings for the approach taken. Additionally, the methods used for data collection and analysis have been explained along with an outline of the organisational settings in which the data were collected. At some length a case has been made for the validity of the interpretative approach taken arguing a case for adopting a shared lifeworld perspective to enhance an understanding of the social phenomenon being studied (i.e. the IT social support worker).

As contributions to theory, four analytical models, presented at Figures 2.1 (and Appendix C), 2.5, 2.6 and 2.7 have been presented with extensive argumentation for their validity with significant reference made to the antecedent models of Frankel et al. (1995 and 1999) and the phenomenological writing of Schutz (1953; Schutz and Luckmann, 1974).

In its entirety this chapter lays the foundations upon which the next three chapters might be considered. These in turn consider the IT service support worker as IS asset, knowledge worker and service worker, and share a common structure of firstly considering relevant literature then presenting research data which is subsequently discussed in the light of that literature.

Chapter 3: The IT Service Support Worker as Information Systems Asset

1 Introduction

To grasp at a collective understanding of the work and experience of IT Service Support workers one needs first to understand their place within the dominant process-based approach to providing and managing IT systems and services. Such consideration leads us to reflect upon the IT service support worker as both a ‘resource asset’ and a ‘capability asset’; terms that are explicitly used within the lexicon of practising IT service managers who have been socialised and trained[2] to use a systems and process thinking mind-set (Taylor, Iqbal and Nieves, 2007).

Within the ITSM 'best practice' literature that underpins this mind-set there is a strong implication that both 'assets' and capabilities' are in some way concrete entities. A rational model is drawn to illustrate the relationship between these two sorts of assets as the ingredients for the creation of 'value' (or output), with people (i.e. IT service support workers) presented as both ‘capabilities’ and ‘resources’. Table 3.1 lists the ‘assets’, categorised into ‘resources’ and ‘capabilities’, which are widely accepted within ITSM environments as constituting the ingredients for ‘value creation’ (Taylor, Iqbal and Nieves, 2007). By implication, success for IT service providing organisations within competitive settings depends upon the rationalisation of human lives into what has been termed ‘human and social capital’, which is theoretically created out of the knowledge, skills, relationships and practices of individual workers within the organisational setting (Starbuck, 1992; Frenkel *et al*., 1999; Swart and Kinnie, 2003). Whilst this may be helpful for an organisation's management in the scoping of areas of responsibility to be allocated, there is no discernible acknowledgement of the ephemeral nature of these explicitly objectified types of capabilities. Organisational structures and management are far from static

[2] ITIL as a popular ITSM ‘best practice’ framework is taught extensively to different levels in accordance with curricula that are tightly controlled by its copyright holder, the Cabinet Office

and comprise the informal as well as the formal. The differentiation between information and knowledge is far from clear cut, and the rationality of the recipe for 'value creation' fails to address the social and individual construction of human skill. Nonetheless the lists do offer the conception of the worker as, on the one hand, a necessary resource (or headcount), sat at a desk, employed for a certain purpose (regardless of their capability to fulfil it), and, on the other hand, as a human machine that is capable of fusing humanly-programmed cerebral knowledge and human sensory functionality, most importantly sight, hearing and touch.

Resources	**Capabilities**
Financial Capital	Management
Infrastructure	Organisation
Applications	Processes
Information	Knowledge
People	

Table 3.1: ITSM ‘Value Creation’ Ingredients

This chapter progresses by considering this practice of ITSM which underpins and directs the activity of IT service support workers. After an introductory section which provides important background information on ITSM, its underpinning ideology is considered in some depth. This is done so that the generically-perceived IT service support worker might be considered more clearly in the light of a better understanding of their IS habitat. From this, the chapter continues with discussion of how these IS human assets might be classified, giving regard to their job titles, the nature of their work and their respective statuses. In particular, attention is drawn to those IS roles that might be classified as specifically in the realm of IT service support as opposed to management, IT development or other specialist skills. Consideration is then briefly given to how these operational support-oriented workers might formulate

their careers. The research data that most reflects this discussion of the IT service support worker as an IS asset are then presented, differentiated by worker type (i.e. Types 1, 2 and 3 as outlined in Chapter 2), and discussed.

2 IT Service Management – A Brief Introduction

IT Service Management (ITSM) is both a professional practice (Taylor and Nissen, 2007) and a process-based approach to managing complex IT services throughout their life cycles (van Bon *et al*, 2008). It has emerged from within the IS arena which is not only concerned with information technology but also with their application, management, and the implications of their use (Checkland and Holwell, 1998). An information system is typically shown as comprising five components: hardware (the computer equipment) and software (the applications run on the hardware) as the IT element, people and their procedural instructions as a human element, and data as bridging the gap between the IT and human elements (Simon, 2000; Kroenke, 2012). Well in advance of the emergence of ITSM as a widely known and understood construct that lauds the virtue of a service-orientation, the notion of IT as a business service was implicit within the broader field of IS (e.g. Checkland, 1981). More recently, as the 'IT as service' mind-set started to become more established, Checkland and Holwell (1998, p.10) reflected this when writing of the purpose of IS:

> *Information Systems exist to **serve**, help or support people taking action in the real world, and ... in order to conceptualise, and so create, a system which **serves,** it is first necessary to conceptualise that which is **served,** since the way the latter is thought of will dictate what would be necessary to serve or support it.* (emphasis in original),

In terms of its present-day meaning, on the one hand ITSM is 'r*eally just a common sense approach to providing IT service*' (ITSMF, undated c. 2009). On

the other hand it is a strategy that is aligned with the goals of the business supported by the IT service (So and Bolloju, 2005, Taylor, Iqbal and Nieves, 2007), and comprises a highly tuned system of defined and continually refined processes that interact with each other to provide an IT service to customers (van Bon *et al*, 2008, Pollard and Cater-Steel, 2009). So the predominant view of the ITSM organisation becomes one of process rather than function, i.e. of *'interlocking... activities devoted to creating outputs'* (Orna, 2004, p. 11) rather than silos of self-contained activities. The ITSM process-oriented approach contrasts with alternative technology-oriented (So and Bolloju, 2005, Galup *et al*, 2009, Iden and Langeland, 2010) or role-based approaches (Thibodeau, 2007) to IT operations.

As IT services have become increasingly important in recent times (van Bon and Dyer, 2009) so has the importance of ITSM practice become increasingly established and accepted across private and public sector organisations (Galup *et al*, 2009) such that today it is a key issue in the management of an organisation's IT function (McNaughton *et al*, 2010). A statistic emanating from the practitioner community suggests that in 2006 90% of companies in the USA were implementing ITSM to some extent (Lynch, 2006). In the UK it is suggested there are around 100,000 IT Service Managers (Aldis, 2009) with legions of staff working for them in what might be described as ITSM 'knowledge work'. Referring in the press to recent high profile failings in IT service delivery, notably in the UK National Health Service, Martyn Thomas (visiting professor at Oxford University) noted that 'IT is a very immature **industry**' (my emphasis) (Beckett, 2009) whilst the international de facto 'trade body', the IT Service Management Forum (ITSMF), claim that ITSM is 'a big **industry**' in its own right and deserving of UK Government recognition as such (Aldis, 2009). In staking its claim for a Standard Industry Classification (SIC) code, the ITSMF has offered a definition for the 'industry' as:

> *An employer who is engaged in the activities of delivering Service Lifecycle Management (Strategy, Design, Transition, Operation and Continual Service Improvement) for IT and Business Systems on or in data centres,*

hospitals, offices, banks, industrial complexes, supermarkets, universities, hotels etc. (Aldis, 2009)

Whilst the ITSMF might claim ITSM as an independent industry, it actually spans industrial and non-industrial work sectors, underpinning all operations that are dependent on information technology; and whilst there are organisations that exist solely to provide an ITSM service, it might be more appropriate to regard ITSM as a subsidiary occupational sector to the broader IS occupational sector.

There are various ITSM frameworks (Galup and Dattero, 2010, Iden and Langeland, 2010) including the popular Microsoft Operations Framework (MOF) which is built largely upon project management principles (van Bon and Dyer, 2009). However, the most widely adopted ITSM framework (Ayat *et al*, 2009, Iden and Langeland, 2010, Kneller, 2010, McNaughton *et al*, 2010), and internationally-recognised '*gold standard*' (Dorfman, 2008) is formulated in a set of books published by The Stationery Office on behalf of the UK Government's Cabinet Office as the intellectual property rights holder (although the framework itself remains in the public domain). As a library these books make the claim that they constitute '*a solid framework of concepts, processes, functions and activities that exert positive outcomes on business value*' (Taylor, Lacy and Macfarlane, 2007, p. vii). Collectively they are referred to amongst the ITSM community as ITIL, an acronym for Information Technology Infrastructure Library. The books provide the core principles for the ISO/IEC 20000 standard and in adherence to the guidance contained in them they promise greater control of the IT infrastructure and services resulting in significant efficiencies and cost savings (West, 2006). The library is authored by multiple writers who, whilst credited in Acknowledgement sections, are effectively anonymised under the '*highly protected'* (van Bon and Dyer, 2009, p.12) ITIL brand.

Since the library's inception in 1989 (Cartlidge *et al*, 2007), the ITIL framework has steadily established itself, claiming to be the most widely accepted approach to ITSM (Bartlett *et al*, 2001; Taylor, Iqbal and Nieves, 2007). Research for Computer Economics Report (2010) suggests that ITIL is the fastest growing IT Management 'Best Practice' methodology, and significant

to this is the industry-reported momentum for uptake of ITIL in the United States (Scarborough, 2010) including major players in the IT field such as IBM (So and Bolloju, 2005) and a recent endorsement by NASA, whose Chief Information Officer, Linda Cureton, acknowledged that the framework's processes offered the assurance of having been '*refined and vetted thousands of times'* (ITILnews.com, 2010).

However, the research for Computer Economics Report (2010) also suggests that ITIL remains an immature practice which is often implemented in a partial or piecemeal fashion, having particular significance for service desk operations, and by implication the process by which service incidents are recorded, investigated and resolved. This research is concerned with such work.

The latest version of ITIL [version three (ITIL V3)] was published in 2007 (with an update release in 2011) in five volumes and represented a major re-write of the version two (ITIL V2) guidelines. The ITIL framework outlined in these volumes is a manifestation of systems theory in that organisational efficiency derives from the conscious configuration of relationships or interdependencies of the parts (Cruywagen *et al*, 2008). The conceptual system is that of a Service Lifecycle, comprising Service Strategy, Service Design, Service Transition, Service Operation and Continual Service Improvement. ITIL V3 implicitly embraces the reasoning of business process re-engineering (BPR) that has been of such significance for western capitalism in the last two decades (Hammer and Champy, 1995; Sennett, 1998). The core argument of BPR is that more can be done with fewer resources and this can be achieved by breaking down functional department structures and re-engineering work practices by focusing on customer-oriented business processes.

3 IT Service Management – An Ideological Perspective

Efficiency Thinking

The history of IT in industry is one of driving innovation, productivity and efficiency gains and this is a continuing trend (Dutta and Mia, 2011, Greenhill, 2011). Investment in IT is typically made because it helps to improve organisational efficiency, effectiveness and innovativeness either by commoditising non-core competencies (Bardham *et al*, 2010) or by further enhancing the efficiency of those competencies that have previously been commoditised. This history of technological waves producing increasingly accessible and user-friendly tools (Kanter, 2011b) has been a journey to a point of business IT ubiquity (Carr, 2003) such that the World Economic Forum asserts a global judgment that IT has become '*an intrinsic part of… business practices and government activities and service provision*' (Greenhill, 2011 p. v). Over its history IT can also be seen to have played an increasingly important role in '*an ideology of enterprise* [that] *has been promoted by governments* [by supporting] *flexible systems of production and management*' (Blackler *et al*, 2003, p.126) and which has a degree of synonymity with the ideology of neoliberalism. As Harvey (2007) argues, IT, and specifically its capacity to use masses of data to guide global decision-making and to compress the density of market transactions, has played an important role in the success of the neoliberal agenda that asserts that social good will be maximised by bringing all human action into the domain of the market. The success of this neoliberal agenda, and specifically its espousal of flexible labour practices (Bradshaw *et al*, 2009), will have inevitably had direct implications for the careers of IT service support workers.

The dominant 'philosophical' approach to ITSM is one of rational mechanistic efficiency and control of the system. The historical evolution over the last two decades of IT in the workplace and associated ITSM techniques (e.g. from ITIL V1 to V3) might be seen to represent the fulfilment of the prophecy of Zuboff

(1988, p. 7) writing at a time when the significance of IT for the future of work was starting to be discussed with greater urgency:

> *'The new technology becomes the source of surveillance techniques that are used to ensnare organisational members or to subtly bully them into conformity… The new technological infrastructure becomes a battlefield of techniques, with managers inventing novel ways to enhance certainty and control while employees discover new methods of self-protection.*

An objective of ITSM 'best practice' is to, as much as possible, produce certain outputs (i.e. service deliverables to agreed service levels) by the tight control of the methods of that production.

ITSM draws on the broader holistic systems thinking philosophy that sees reality in terms of rationally interacting processes, objective entities and objectified and rationalised humans. Such a reality diminishes the human dimension or perspective. As one adherent to systems thinking puts it:

> *The system is the method by which you achieve results. The failure to achieve desired results is caused by the inadequacy of the method or system. Without conscious attention to **systems**, we will focus on **people**... [People] work in systems, but the systems existed before most of the people were hired and will continue after the current employees are gone... When a system is changed, people need to change what they do. (Scholtes, 1998, p. 23 – emphasis in original).*

The system is cast in the role of 'master' with workers (including managers) cast in the roles of 'servants' to the system. The dubious assumption is that workers (or more rationally, human resources) will freely bend to the changing demands of a managed system (or can be disciplined into doing so) and are easily substitutable either by technology (preferably so for reasons of control and/or cost) or by other workers. The inventiveness of the human worker is

effectively discounted from consideration, and thus discussion is culturally stifled as to the effect of systems thinking and process management techniques on organisational innovation (Benner and Tushman, 2003; Seidman, 2007).

The tenet of continual improvement, that is a fundamental aspect of ITSM 'Best Practice' (Taylor, Case and Spalding, 2007) and is implicitly applied to workers as it is to processes, has been applied by industry practitioners to the ITSM guidelines themselves. Thus, over the last twenty years the ITIL way of thinking has matured from being largely about low-level operational management in the first version to being concerned with middle management tactical matters and senior management strategic decision-making at version 2 and the current version 3. And, given that it is at this strategic level that ideology most powerfully impacts, so ITSM practice might be seen to have become increasingly ideological in the last decade, with an emphasis on rationalisation of all aspects of the business system for ever-greater control.

Control and Relinquishment

The efficiency ethic behind ITSM, with roots back to Frederick W. Taylor's (1911) '*Principles of Scientific Management'* can be associated with techniques of management control. By conceiving business IT from a systems perspective management might seek to reduce complexity and thereby mitigate against the lack of control resulting from such complexity. Systems thinking evolved to enable managers to assert control over this nebulous set of interacting components.

Checkland (2000) differentiates between hard systems thinking and soft systems thinking. In succinct terms, the former envisages the world as comprising separate systems that can be engineered (e.g. scoped and definable IS systems that meet specific business systems requirements (Willcocks *et al*, 1997)), and the latter sees the world as one of interwoven complexity and confusion that can be explored in an organised way. Whereas the hard systems stance regards the world as systemic by nature, thus

supporting a management mind-set of always striving to achieve the ideal system under its full control, the soft systems stance acknowledges that this ideal is illusory and emphasises the process of inquiry as being systemic. ITSM practice can be considered in the light of the theory of both hard and soft systems methodologies. For example, the recent emergence of social software platforms such as web-based social networking applications, wikis and blogs (collectively referred to as Web 2.0 or Enterprise 2.0) has posited a direct challenge to the management imperative to control. As Andrew McAfee (2010) has blogged:

> *I used to teach operations management to MBA students, and if there was one mantra we drilled home to them, it was '**if you want to control the outcome, control the process'** ... the successes of Web 2.0 and Enterprise 2.0 have taught me another mantra ... '**if you want a good outcome, back off the process and get out of the way of people.**'*

There are implied dangers of over-zealous control of the IT service support worker as an element within the system: the worker will not have adequate autonomy to use tools that they perceive to be useful to them to inquire systematically as an integral part of their productive activity; the workers will feel constrained and demotivated, and system efficiency will be negatively affected.

Here is the potential for the development of a tension in the psyche of the IT service support worker. On the one hand they might desire to express creativity and sociability as means to the end of solving a problem they have as a task in front of them. On the other hand, their behaviour is inclined to a Foucauldian docility (Foucault, 1975) instilled in them by the disciplining practices of established and regularised work-processes.

In line with this the sociologist Richard Sennett (2009, p. 113), contemplated the work of IT technicians and suggests that '*the surrender of control* [is] *a recipe for good craftsmanship*'. He observes that workers such as IT technicians grappling with problems become experimental and excited and are

willing to risk losing control of their work. The difference between technology and the human worker faced with the circumstance in which control is relaxed is clear to him: '*machines break down when they lose control, whereas people make discoveries, stumble on happy accidents*.' The implication is that by applying control to machines (e.g. regular maintenance as advocated by ITIL) they are less likely to break down, but by applying excessive control to human workers, and particularly to the way they create and express their knowledge, IS managers risk hampering workers' abilities to resolve the problems faced by the organisation. Julian Orr (1996), in his ethnographic thesis on the work of photocopying support engineers makes the more pragmatic observation that in work situations where the concern is repair and restoration of a service (i.e. recovery and re-creation rather than discovery and creation) '*control is fragile… because the technicians… can only restore that state [of the machines working] after the fall'*, drawing the conclusion that '*work in such circumstances is resistant to rationalisation, since the expertise vital to such contingent and extemporaneous practice cannot be easily codified* (Orr, 1996, p.2).'

In continually driving towards systematic efficiency with insufficient regard for the human dimension, the risk is run that efficiency gains are undermined by organisational efficiency losses as workers become increasingly alienated from their work. Scholtes (1998, p. 127) highlights the tension for the manager acting from a systems thinking mindset: '*While we want to eliminate art-form-like caprice and needless variation from work, we do not want to make work oppressively rigid and obnoxiously bureaucratic'*.

Apparent within this phraseology is the acknowledgement that such rational management techniques are closely associated with worker alienation. We might place in historical juxtaposition to Marx's (1844a) writing about worker alienation, the rise of the school of scientific management in the first half of the 20th century, inspired by Taylor's (1911) Efficiency Movement that transformed the US steel industry from its craft base into a bureaucratised system (Drucker, 1974) and most famously influenced motorcar manufacture under Henry Ford. This managerial ideology that evolved alongside modern industry justified the authority of management to remove from artisan workers the right to define their own jobs, their own skill level, and their own standards of quality and place

them under management control (Bendix, 1956). It was this striving for efficiency that undermined the communities of skilled artisans and created new communities of semi-skilled workers working within tightly controlled working practice parameters. With this management control came the authority to measure performance as they saw fit and to specify what measurements constituted satisfactory performance (Stinchcombe, 1990). Numbers are the language of such measurements, and thus quantitative data can be regarded as the food of this ideology of efficiency with its emphasis on the systematic observation and study of work to establish predictability of job performance and control through discipline (Huczynski and Buchanan, 2001). In its continual drive for ever greater efficiency, the modern ITSM workplace reflects Taylor's contribution, as over time, IS work has been progressively de-skilled through the use of management techniques that have asserted ever-greater control over worker activity (Greenbaum, 1979, Scarbrough, 1993, Glass, 2005). It can also be seen to reflect the wider observation of Baldry *et al* (1998) that the modern office generally has witnessed an intensification, mechanisation and Taylorisation of white-collar work that mirrors the industrial factory. More specifically, Taylor's 'Efficiency Movement' has left a legacy to modern day management methods in the form of popular 'best practice' frameworks such as ITIL and the ISO standard for ITSM (ISO20000), and can be seen in the sustained popularity of the inter-related trends of Total Quality Management (TQM), Knowledge Management (KM) and Lean Management (Dupuy, 1999; Betz, 2011). As Huczynski and Buchanan (2001, p. 413) observe:

> *One only needs to look at the current interest in total quality management, ISO9000 and the other management techniques for bringing greater discipline into... work to realize that Taylorism is alive and well and thriving.*

Evidence of it being alive and well in ITSM environments is illustrated in the explicit guidance handed down from an ITSMF publication:

> *When something in business is measured, particularly when this measure is made the responsibility of a manager or a team of people, the behaviour of the people*

> *measured changes ... A well-designed and measured metric is a method of control.* (Brooks *et al*, 2006)

Mainstream ITSM practice, can be seen to further reveal its Taylorist underbelly in other ways. These include the previously discussed attention it gives to the breaking down of a defined system into sub-systems and processes which can then be broken down into activities and then into tasks that can be optimised and controlled for efficiency and intensification. This advocating of specialisation is similarly applied directly to the workforce driving '*the grouping of capabilities and resources under the same span of control to achieve focus, expertise, and excellence'* (Taylor, Iqbal and Nieves, 2007, p. 20).

Worker Objectification and Measurement

Another indicator of ITSM 'best practice' being historically rooted in the traditions of Taylor (1911) is the diktat that each defined process be 'owned' solely by an appointed and accountable (though implicitly anonymous, objectified and substitutable) 'Process Owner' (Taylor, Lloyd, and Rudd, 2007), thus confirming workers as 'servants' of the processes, denied any formal ownership of their working practices. Effectively, as illustrated in this extract from the ITIL V3 Service Strategy book under the headline 'People and Processes', workers are dehumanised and objectified as resource assets to be measured, configured and controlled in much the same way as technological resource assets:

> *All assets can fail to perform at the required level. Assets engineered and maintained for higher performance tend to have higher MTBF [Mean Time Between Failure] under the same operating conditions. This is more intuitive in the case of engineering artefacts such as hardware and software assets. It is harder to define or measure the reliability of people and process assets even where they*

> *clearly contribute to the failure of a service... The concept of MTBF applies to people and processes even if the actual metrics may be difficult or meaningless. The idea is the same.* (Taylor, Iqbal and Nieves, 2007, pp. 174-175).

This is in line with Fiske's (2009, p. 33) definition of a *'form of dehumanization which might be termed objectification, [that] views people as automatons (tools, robots, machines).'*

The power relationship between manager and managed is fairly explicit here and supports Foucault's (1975) observations about institutional power. Historical decision-making by 'social agents of knowledge' (e.g. ITSM 'best practice' evangelists, IT service managers, HR managers, project managers, senior management, etc.) results in different workers' identities being defined differently for them, reinforcing their powerlessness and marginalising them within the organisation to different degrees (Smith, 2000). So, IT service support workers are defined by the processes and routines they are called to follow; and some are historically defined to have more autonomy than others and this might reasonably be seen to relate to their power to resist, by dint of their skills and knowledge that when used are of significant value to the organisation. Thus worker status and autonomy become important issues in the conceptualisation of the IT service support worker. Worker status is discussed further within this chapter and work autonomy is discussed further within Chapter 4.

Within the 'systems thinking' paradigm an organisation might be considered to be a social system (or sub-system), made up of people who interact (e.g. Hackman and Oldham, 1975, Peppard and Steward, 1993). If the social system is to 'work' well within the larger holistic service organisation system (alongside technology, processes and external factors such as third-party service providers) then 'hard systems thinking' would suggest that, as Peppard and Steward (1993, p.269) put it '*this critical human dimension must not be neglected*' else the system's business objectives will run the risk of being resisted or undermined. And as Kanter (2011a) notes, the Internet may be venerated as a revolutionary force changing everything but one of the things

that does not change amidst this is the critical importance of the human side of using technology.

Further indicating ITIL's Taylorist (1911) foundations is its evangelism of measurement for maintaining and improving efficiency and the fulfilment of customer requirements. The creeds of ITSM include '*You can't manage what you don't measure*' (Smith, 2008, Arraj, 2010), '*What you measure gets done'* (Smith, 2008) and '*If you cannot measure something you cannot improve it*' (Computer Economic Report, 2009). These are manifested within the metric-fuelled ITIL 7-step Improvement Process (Taylor, Case and Spalding, 2007). As one ITSM publication puts it, '*the main benefit of ITSM is that it provides the quantitative quality criteria for end-to-end customer-focused services'* (van Bon *et al*, 2008, p.20). Thus a hunger is generated amongst managers for numerical data in order to: validate management decision making; set direction for worker activities in order to meet management-set and customer-agreed targets; justify (to higher-level management and customers) why courses of action are to be taken, and identify those points where workers (or technology) should intervene (e.g. to take corrective action) (Taylor, Case and Spalding, 2007). One acknowledged danger is that managers will tend to wastefully over-measure in an attempt to feel in control of complex IT infrastructures and services (Scarborough, 2010).

4 The IT Service Support Worker as a Category of the 'IS Worker' Type

In this section, I discuss where IT service support work fits into the broader remit of IS work and pose the question as to whether the IT service support worker might be considered to be the Cinderella of the profession, firmly entrenched in a work-life of unfulfilling graft in comparison to those in other IT roles. As part of this discussion the concept of the 'career in IT' is considered.

Whilst the use of IT is endemic across the entire UK workplace, one estimate suggests that 1 million people are specifically employed in what might be

categorised as IT jobs (Inside Careers/BCS, 2010). Arrangements for the delivery of IS services are considerably complex (Feeny and Willcocks, 1997) and as such there is significant variety of IS work. The Skills Framework for the Information Age (SFIA) which is supported by the UK Government and the British Computer Society defines six categories of IT work:

- Strategy and Architecture;
- Business Change;
- Solution Development and Implementation;
- Procurement and Management Support;
- Client Interface;
- Service Management.

The Service Management category has recently been aligned with ITIL V3 (Inside Careers/BCS, 2010) and 'priSM' (Professional Recognition for IT Service Management) which is a service management '*credentialing scheme*' (Clacy, 2011, p.4) introduced and promoted by the ITSMF in 2011 (Burrows, 2011). IT service support can be seen to be a function of the 'service operation' sub-category of the service management category that contains routinised work and different specialisms as well as strategic, tactical and operational management roles (SFIA Foundation/BCS, 2006). This sub-category reflects the ITIL V3 'Service Lifecycle' which is in the long tradition of considering IS projects (and before that manufacturing and construction projects) in terms of having a life cycle (e.g. Royce, 1970, Blennerhassett and Galvin, 1993) comprising various stages across time. These stages typically include agreeing requirements, business and systems analysis, design, development, testing and operations. The ITIL V3 'Service Lifecycle' comprises a central axis of Service Strategy around which are progressive phases of Service Design, Service Transition and Service Operation (Taylor, Iqbal and Nieves, 2007). The work of IT service support workers is primarily in this latter operational phase inasmuch as they support the upkeep of a 'live production' system and/or service.

The SFIA framework implies career progression routes within each separate category but the reality of IS work is such that IT careers typically cut across

these categories. Additionally, some of the category names used imply seniority and experience (e.g. strategy and architecture) more than others even if the framework suggests that work within each category can be found across a range of skills levels that equate across categories.

As this research places the IT service support worker as its central subject, we might reasonably consider alternative broad-based categories of IS worker that cut through the six categories defined in the SFIA to identify the high-level purpose of the employee. The four alternative categories proposed as a theoretical contribution are:

- developers;
- technical specialists;
- managers;
- IT service support workers

Developers create IT products, typically programming software applications. Technical specialists contribute their particular expert skills and knowledge to the overall IT enterprise but are not developers *per se*. Managers might have management responsibilities for systems, processes, projects and/or people. IT service support workers are concerned with the smooth running of a live information system. These categories overlap and specific workers may have responsibilities within more than one category, but all IS jobs might reasonably be expected to be a fair fit for at least one of these four categories. The work of the IT service support worker, being operational, is typically not that of the developer whose concern is typically pre-operational. However some IT service support workers may do some maintenance programming to restore a failed service or to make minor service enhancements; and some programmers may be involved in writing code changes for live applications and thus may be part of the operational support service offering to customers. Similarly the IT service support worker's work might not necessarily be that of the technical specialist whose responsibilities may cut across different stages of the life cycle and not just reside in the operational stage. Likewise, whilst some IT managers will manage the work of IT service support workers only some will involve themselves in 'hands on' operational support work. Conceptually these

groupings of developers, technical specialists, managers and IT service support workers may be presented by way of a Venn diagram showing four overlapping circles (Figure 3.1). Kroenke (2012) identifies 15 major job positions within the field of IS work (excluding workers who use IT as an integral part of their 'non-IS' job), which might then reasonably be plotted loosely on to the diagram.

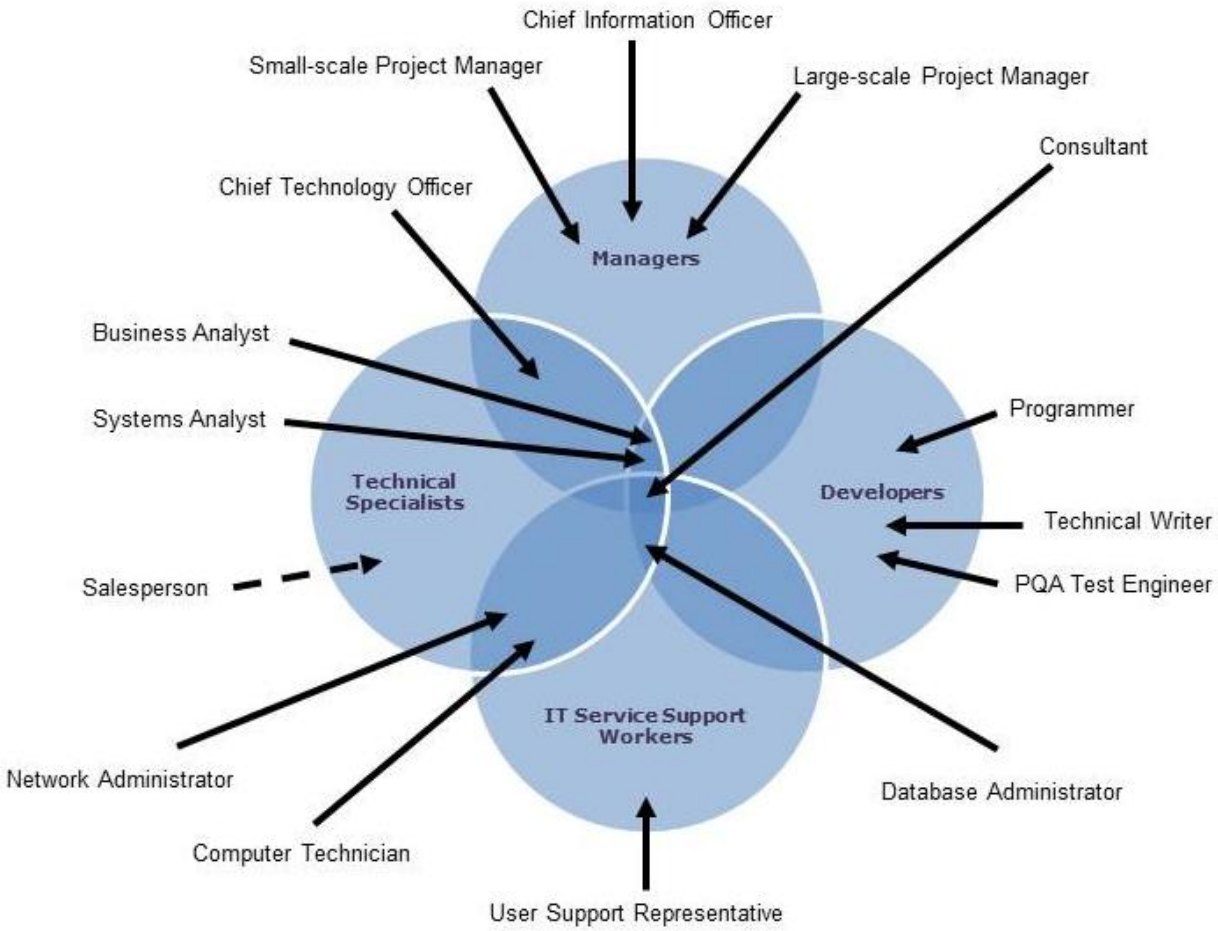


Figure 3.1: IS Workers: A broad-based classification loosely populated with 15 major IS job positions identified by Kroenke (2012)

Whilst this diagram presents the IT service support worker within a single circle it is important to stress that they might also operate at times within the areas of overlap with the other three categories. Thus, when observing the workers some of them were at times seen to be performing managerial-type

duties or were called upon to provide specialist technical advice or were observed writing and compiling programming code.

5 The Status of IT Service Support Workers

The work-status of the IT technician can be seen to be grounded in the rise, during the first half of the twentieth century, of '*the 'lower-middle-class' of salary-earning technicians, clerks, typists and minor professional people'* (Cole and Postgate, 1949, p. 656). Over time, the IS occupation has expanded in terms of the number of workers and the variety of work pursued by them. Having asserted the above classification model that indicates some of the scope of IS work, it becomes more possible to consider the status of IT service support workers vis-à-vis other IS workers.

An obvious marker of the status of a profession or occupation is the monetary value accorded to workers within it. For an individual, their personal status within their field is similarly marked by the value accorded to them in terms of pay etc. In Marxist terms this relates to the labour-power the individual worker offers as a commodity to be traded in the labour market place with a buyer of labour (Marx, 1867b). The economic downturn has impacted on the salaries earned by IT workers in real terms and there continues to be a trend towards moving IT work to countries where labour can be bought at a lower price. However, specific technical specialist skills are in short supply in the labour market and there is a growing acknowledgement of the importance of local contextual knowledge (Inside Careers/BCS, 2010).

A recent salary survey – The Computer Staff Salary Survey, June 2010 carried out by XpertHR using data relating to 60,000 IT professionals - calculated average basic salaries for nine job levels ranging from trainee (£16,643) through to IT director (£126,799) (referenced by Inside Careers/BCS, 2010). Unfortunately this information is not helpful for comparing IT service support workers to other IT workers. It is possible though to produce such comparative salary details using a publicly available database. The website

ITJOBSWATCH (http://www.itjobswatch.co.uk/) tracks the salaries being offered for IT jobs advertised on IT recruitment websites in the UK and offers a search facility to mine the data on its database. By searching on four words to represent the four categories in Figure 3.1 ['support', 'developer', 'specialist', 'manager'] an indication of salary levels for jobs that include those words in the job title can be established, thus providing an indicator of the value accorded to support workers vis-à-vis other IS workers. Of course many jobs that might be considered to clearly fall within one of the categories will be omitted. For example the job of 'help desk analyst' is clearly within the support category, the job of programmer is that of a developer, and, most significantly, a very broad range of IT jobs might be considered to be particular specialisms (e.g. technical architect, security engineer, database administrator) but will be omitted where the word 'specialist' does not appear in the job title. However, the quantity of data within the ITJOBSWATCH database is such that a sufficient number of job titles containing the search criteria are returned for each category to enable a reasonable comparison to be made between the respective salaries offered for IT support jobs, IT developer jobs, IT specialist jobs and IT manager jobs.

Table 3.2 shows the average salaries being offered for each category and Appendix G provides more details on how these were calculated.

Category	Search Criteria	Number of Jobs Meeting Search Criteria in 3 month period	Average Salary
IT Support Workers	'support'	23,769	£31,960
IT Developers	'developer'	91,353	£40,970
IT Technical Specialists	'specialist'	4,246	£41,540
IT Managers	'manager'	37,653	£54,740

Table 3.2: IS Worker Salaries for 3 month Period during March-June 2011 using data from ITJOBSWATCH website.

The resulting data suggest that IT support workers may be paid in the region of 22% less than developers, 23% less than IT technical specialists and 42% less than IT managers.

The distribution of salaries within each of these categories is shown in Appendix G and diagrammatically shown in Figure 3.2. This shows that the most common salary for an IS support worker was in the region of £30,000, for a developer around £35,000, for a technical specialist around £40,000 and for a manager around £55,000.

The analysis of this data would seem to confirm that IS operational support work is considered to be unworthy of the pay given to other IS workers, and by extension it might be considered to be of lower status as has been alluded to in the literature (e.g. Marks and Scholarios, 2007).

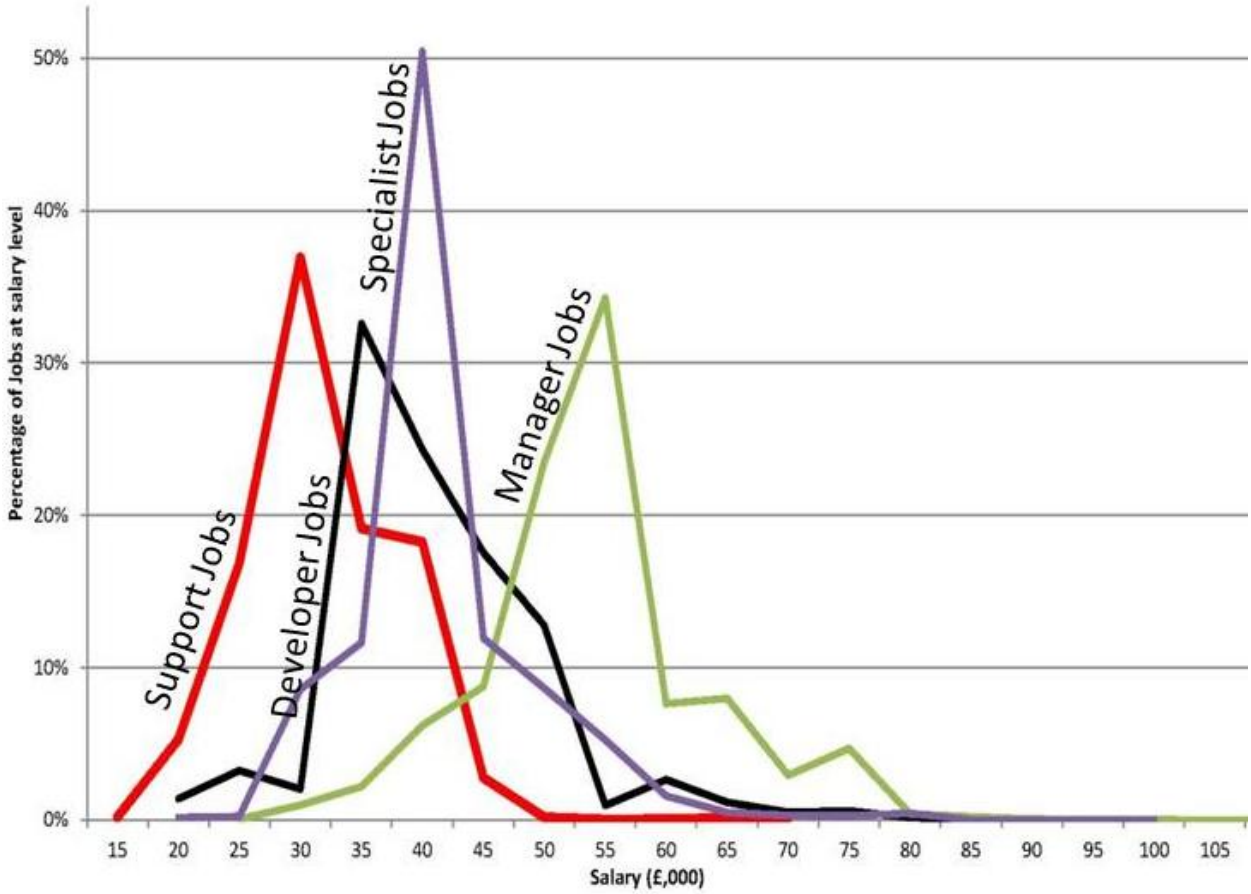


Figure 3.2. Distribution of IS Job Salaries
(3 month periods between March-June 2011).

If we are to consider support work as the Cinderella of the IT profession it is important to particularly consider those at the lower end, in terms of salary, of the IS support worker category. The evidence from ITJOBSWATCH suggests that it is those employed in front-line roles within a service desk type function who might be considered to be at the bottom of the heap. Some of these workers were included within the search made on the string 'support', but a more comprehensive reflection of the salaries offered at this level of support work is garnered by doing successive searches on the strings 'service desk', 'help desk' and '1st line' and then by manually separating operational workers and those with some level of management responsibility. The results, shown in Table 3.3 and Figure 3.3 and in more detail at appendix G, indicate that such operational workers have the least 'labour-power' amongst the general body of IT workers: 33% less than the wider body of 'support' workers; 48% less than 'developers' and 'specialists'; 61% less than 'managers' and 39% less than their own line managers.

Category	Search Criteria 1	Search Criteria 2	Number of Jobs matching both search criteria	Average Salary
Service Desk Operational Workers	('Service Desk' or 'help desk' or '1st line')	NOT ('team leader' or 'supervisor' or 'manager')	1,923	£21,480
Service Desk Managers	('Service Desk' or 'help desk' or '1st line')	('team leader' or 'supervisor' or 'manager')	258	£35,390

Table 3.3: Service Desk Worker and Manager Salaries for 3 month Period during March- June 2011 using data from ITJOBSWATCH website.

Although those with managerial responsibilities within the service desk function are shown to earn 35% less than the average IT manager, analysis of this data shows a clear demarcation between the service desk workers and

their line managers in terms of their pay, with the latter's salary expectations starting where the former's finishes. The implication is that there is often available a direct route of career progression from service desk operational work into one of managerial or supervisory responsibility, but that the pay for this managerial responsibility is considerably less than the pay for managerial responsibility elsewhere within the typical IS organisation.

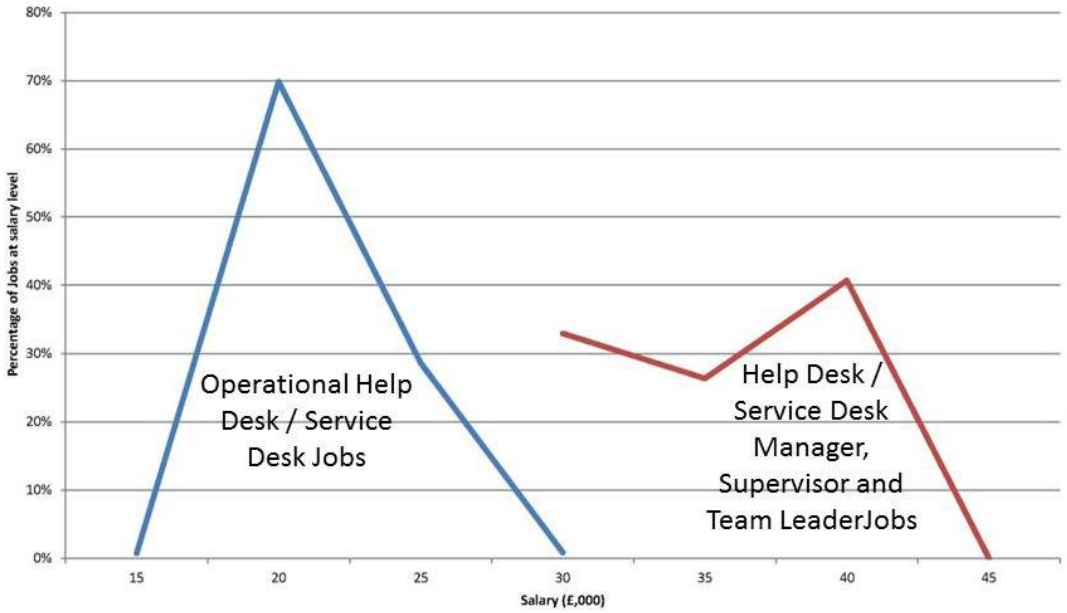


Figure 3.3. Distribution of Service Desk Worker and Manager Salaries (3 month periods between March-June 2011).

From the analysis of the ITJOBSWATCH data it can be seen that in general terms IS jobs that entail supporting live operational systems or services pay significantly less than other IS work. This is explicitly shown in Figure 3.4 which shows that operational support work and the work of managing first-line teams pays significantly less than IT development, IT specialist work or IT management. Within the class of IT support workers, it can be seen that there is a hierarchy with the lowest-status accorded to those workers who work on service desks or help desks, implicitly within a hierarchical organisational structure. There are noticeable similarities between the nature of low order IT service support work and the work of call centre workers. Indeed first-line IT service support work has been synonymised with call centre work by researchers across academic disciplines (Beaumont and Hunter, 2002; Gray

and Durcikova, 2006; Murphy, 2011). Such workers might be differentiated from other call centre workers on account of them being typically expected to take responsibility for the resolution of a problem that emanates from a customer. They are responsive workers where other call centre workers might typically be employed to proactively seek out customers. The reactive problem-solving element of their work may lead to the development of a broader specialised expertise than that that is possible when taking proactive proceduralised actions. Nonetheless the emergence of call centres has clearly had Tayloristic implications for the management of IT service support workers with, for example, the performance metrics (and the incessant presence of measurement) used for call centre management transferring to service desk management (Computer Economics Report, 2009). Further, call centre work has in contemporary Britain become notoriously synonymous with tightly-controlled, low status work with high staff turnover tolerated or even deliberately encouraged. Call centre workers are consequently often portrayed as belonging to an enfeebled and lowly-skilled 'working class' (Baldry *et al*, 1998; Wallace *et al*, 2000; Thompson *et al*, 2000; Wray-Bliss, 2001; Beaumont and Hunter, 2002; Moore, 2011; Standing, 2011). Thus, there would appear to be a valid comparison between call centre work and IT help desk or service desk work which similarly often goes unappreciated and is maligned by those who come into contact with it (Bocij *et al* 2006, p. 736). This has clear implications for the development of an understanding of IT first-line support workers who might work in similar environments to call centre workers and by extension all IT service support worker.

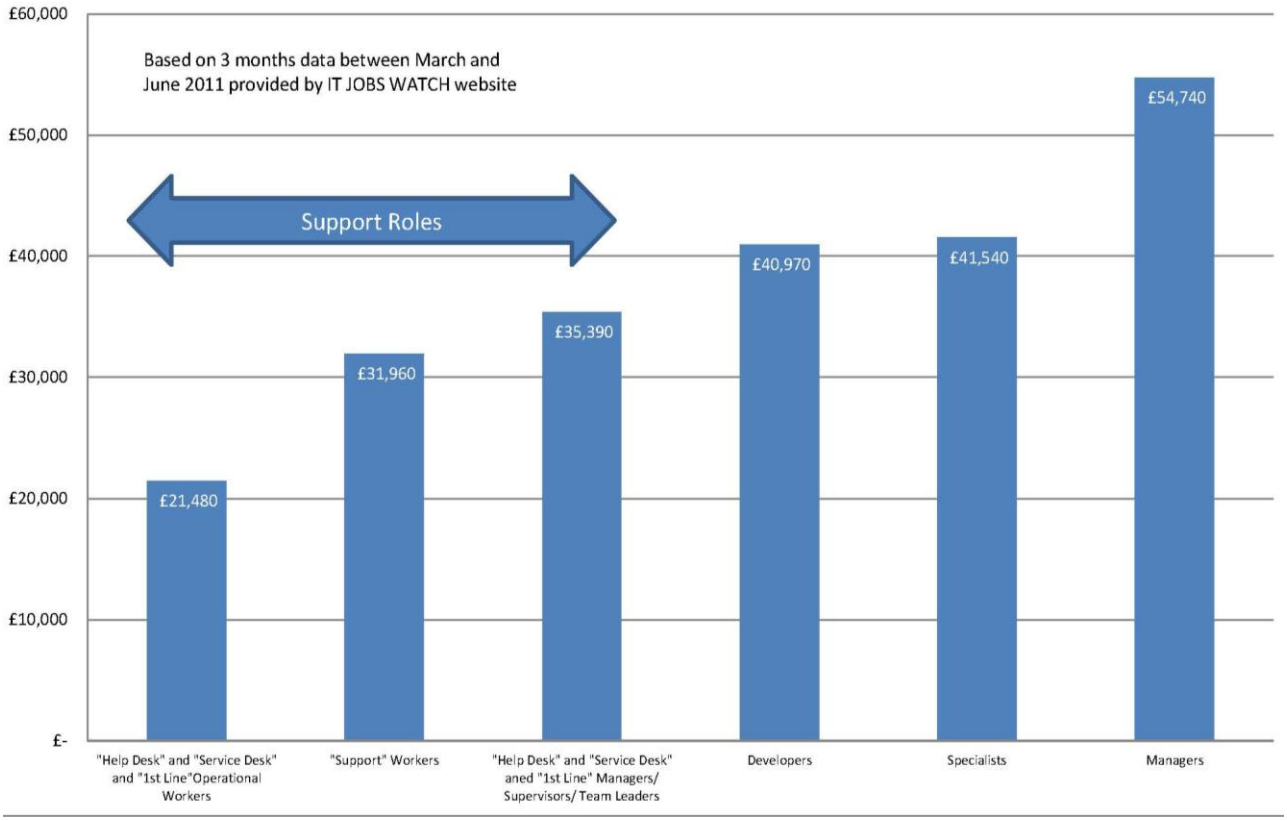


Figure 3.4: Average Salary comparisons for IS workers

6 IT Service Support Work as a Career and/or Profession

By its mere association with call centres, IT service support work can be seen to have a damaged reputation to its status as part of a profession where the most direct route of entry to technical roles is via a degree in computing (Inside Careers/BCS, 2010). However, there is no indication that the IT 'industry' has distanced itself from such work to project and protect an image of IT work as being the sphere of '*smart, ambitious individuals'* (Banerji, 2011). The British Computer Society (BCS), which is the chartered professional body for IT work in the UK, includes lower-level support work within its sphere of interest whilst acknowledging in their career advice literature that the work may entail '*simple and routine* [tasks] *such as setting up new users, re-setting passwords* [and] *talking user staff through a series of actions'* (BCS, 2009). Indeed as a body of institutional power and social agent of knowledge (to adopt the

Foucauldian perspective) the BCS, in working cooperatively with the SFIA foundation to reduce down the body of IS skills into defined components (firstly, into 6 categories, then 20 sub-categories and then 86 'skills' which are then reduced further into skill levels (see example at Appendix H), can be seen to be colluding with a Tayloristic and bureaucratic control agenda (Scarbrough, 1993). This categorisation to the nth degree represents an advocacy of the fragmentation of the body of IS work into specialisations and promotes the idea of being a profession which defines complex hierarchical career ladders and complex criteria which are used to assess what rung of what ladder a worker is on. With a vast range of IT qualifications within the educational/training marketplace, this fragmentation allows for the formal recognition of experience as a substitute for the narrower range of respected qualifications that clearly mark out established professions such as law (Kanter, 1989a).

Whilst the BCS and SFIA have made an attempt to define career routes for IS workers, with qualitative definitions for each hierarchical step on multiple ladders (thus attempting to enable quantitative measurement of worker capability), the complexity of the human life journey and the modern trend towards boundaryless careers (e.g. Bird, 1996) is resistant to this pigeonholing and bureaucratic mechanism. As Scarbrough noted back in 1993, *'the self-directed career has become the principal means of acquiring IS expertise'* (p.947). The IS worker becomes naturally attuned to the march of time as technologies develop and move in and out of fashion. Through experience she has learnt the truism articulated by Sennett (2006, p.98) that '*skills extinction is a durable feature of technological advance'* and has typically been ahead of the curve in regard to Gratton's (2011a) prediction of a future need for workers to '*slide and morph*' across different areas of mastery. It might be reasoned that the nature of IT work, with its focus on greater business efficiency via a rationalism supported by continually evolving technological solutions, inevitably puts the IT service support worker in the vanguard of what Sennett (1998) refers to as the '*new vigorous capitalism'* and which he characterises by the motto '*no long term'*. Implicit in this motto is an insecurity amongst workers that is particularly prevalent in the work sphere of IT service provision because of the enthusiastic adoption by IT service managers of rationalising management

techniques. Such techniques have resulted in: corporate downsizing; the replacement of human labour with technology; mergers and takeovers; the dismantling/flattening of organisational career structures; flexible workforces including strategic labour resourcing for time constrained projects; and IT outsourcing and 'off-shoring' arrangements under time-bound contracts (Earl, 1996; Scholtes, 1998; Sennett, 1998; Simpson, 1998; Willcocks and Fitzgerald, 1998; Jacoby, 1999, Bradshaw *et al,* 2009; Quan and Cha, 2010). The overriding objective has been to increase profitability through the minimising of costs, including costs associated with the cultivation of long-term relationships (Willmott, 2000). For the worker, this has increasingly undermined established notions of employment permanency and job security (Noon and Blyton, 1997; Baruch, 2001; Standing, 2011).

Thus within many such settings, 'turnover cultures' have become prevalent (Quan and Cha, 2010) and IS career progression has become restricted such that workers are deprived of incentives to remain within their employing organisation. Recognising the loss of this incentive and that technological developments are moving on apace outside of the familiar organisational setting has the potential for imbuing the IT worker with a sense of career insecurity (Bauman, 2000; McGuigan, 2010; Standing, 2011) that can only be mitigated against by accepting personal responsibility for their career (Beck, 1986, Kanter, 1989b, Bradshaw *et al*, 2009) through a commitment to learning new skills and the building up of a portfolio of relevant qualifications, and/or a willingness to move from job to job to *'[create] the highest value for themselves'* (Gratton, 2011d, p. 33). This acceptance of Beck's (1986) individualisation thesis has been promoted in the context of a weak UK economy by the Confederation of British Industry (CBI) who implicitly encouraged workers to ensure *'their training is up-to-date and that they have the relevant experience to drop straight into roles as required*' (Bradshaw *et al*, 2009, p.22).

As Barley (2008) reminds us the landscape of the world of computing has changed immeasurably over the last four decades with some 'computing sub-worlds' contracting whilst others have emerged and grown. Programming languages that were once common, e.g. COBOL, have all but died to be replaced by new ones, whilst integrated business applications have shown their

benefits over separate applications for separate business functions. Similarly, hardware has evolved with the growth of mobile technology and cloud computing solutions necessitating the availability in the labour market of skills to support these. In recent years Sennett (2006, p.95) has specifically suggested that '*computer repairmen… have to relearn their skills three times in the course of their working lifetimes*'. This might well be an underestimate to a significant degree, given the speed of technological advancement and attrition and the increased flexibility of the career span. Indeed it might be more pertinent to suggest that they need to have a constant awareness of what learning they are doing and whether that learning is enough to safeguard their careers and/or further their ambitions. It might be reasoned that they have had to shift their goal from being one of gaining secure employment, to one of gaining 'employability', which comes with an implication of insecurity, and an expectation of being able to justify worthiness of employment at any time. Effectively the (IT service support) worker's career hinges upon, or even becomes, the 'stock of knowledge' they acquire whilst in employment (Schutz and Luckmann, 1974; Bird, 1996). This means that the quality of the work experience (as well as the time spent at it) for building up that 'stock of knowledge' takes on a significant importance for mitigating against insecurity. Rather than the strong mutual commitment between the traditional 'company man' and 'his/her' single employer, in this modern world where large companies are '*quick to replace lifetime employees with short-term specialists*' (Sampson, 1995, p. 307), and of boundaryless careers (e.g. Bird, 1996), the IT service support worker might be seen to increasingly take an uncertain journey involving multiple conditional commitments to organisations along the way (Baruch, 2004; Gratton, 2011a, 2011e).

Thus, if IT service support workers do not 'choose' to develop and equip themselves for a 'boundaryless' occupational career then they risk facing the consequences of their implicit choice to remain within an organisation that lacks commitment to them until such time that they are no longer required (McGuigan, 2010). As Bird (1996, p. 164) states: '*Not all boundaryless careers are voluntary choices*'. For the IS worker, Gratton's (2011a) idea of '*serial mastery'* that follows from this trend towards increasing work insecurity is nothing new, nor is

the expectation that their personal skill sets are '*a durable possession'* (Sennett, 2006, p. 95) but rather will need to be serially overhauled during their working life. The uncertainty of technological change (Scarbrough, 1993) and the accelerating pace of technological evolution (Dutta and Mia, 2011; Naughton, 2012) and competition (McAfee and Brynjolfsson, 2008), and their effects on the success of IT suppliers (notably the fluctuating ascendancy and descendency of suppliers such as IBM, ICL, Microsoft, Novell, Apple and Google etc.) might reasonably have an unsettling effect on any worker who has to adopt new IT (Zuboff, 1988; Checkland and Holwell, 1998) and in particular on the skilled IS worker who becomes aware of the vulnerability of a livelihood dependent on a particular skillset. The reasoned argument is that the very nature of IT imbues in the IT worker an underlying fear of being 'underemployable' (Belbin, 1981) as their marketable skills become obsolete (Antonacopoulou, 1999). This fear coexists with a sensitivity to skills degeneration and, where the power relationship permits, a sense to influence work activity '*along their chosen path'* (Baxter, 2000, p.47). Together these present themselves as motivating factors to self-direct a career towards a place of greater security and/or fulfilment. This may involve – to revisit the career ladder analogy – jumping from one IS career ladder to another (or into another work sphere). The implication is that some IS career ladders are more stable and advantageous for individuals than others and IT service support workers might seek various career paths as they strive to assert control over the uncertain and unsettling nature of the work.

7 Data Presentation: Dimensions primarily associated with 'The IT Service Support Worker as IS Asset'

Data were collected to enable the emergence of patterns and typifications that reflect realities of experiences of IT service support workers, with specific relevance to a conception of them as being workers within the field of IS. It is held that such patterns and typifications can inform us and challenge our individually and socially constructed perceptions of the typical IT worker generally and IT service support worker specifically. Three dimensions were

considered to be particularly pertinent to the consideration of IT service support workers as IS assets, and the data in relation to these are presented in turn, subdivided by worker type: Type 1 (first-line); Type 2 (second-line) and Type 3 (single-line). Firstly, data were collected relating to the qualifications and vocational backgrounds of workers, with particular attention to the objective evidence of them being skilled at IT work (e.g. qualifications in computing skills) and being experienced (in longitudinal terms) as an IT worker. Secondly, data are presented to reflect how workers identified themselves with IT as their career. And thirdly, in line with the earlier noting that first-line IT service support work is often made synonymous with call centre work, workers' perceptions of their statuses within their organisations were considered.

Qualifications and Vocational Background

The demographic data collected at interview, as detailed at Appendix E and shown in a condensed form at Table 3.4, suggest that Type 1 workers tend to have less experience of working within the IT field than other IT service support workers. It might therefore be reasonably assumed that they tend to have less theoretical technical knowledge. The interviewed Type 2 workers as a group had been within their current organisations longer than the Types 1 and 3 workers and as such can be expected to tacitly hold more contextual organisational knowledge. The data also point to Types 2 and 3 workers being more likely to hold high-level IT qualifications (either from post-compulsory education or through practitioner training programmes such as those that lead to Microsoft Certified Professional [MCP] qualifications).

Worker Type	Number of Workers Interviewed	Vocational Qualifications	Vocational Background	
		Workers with significant IT qualifications	Workers with >5 years working in IT roles	Workers with >5 years working for current employer
1	9	4	3	3
2	8	7	6	5
3	7	5	7	2

Table 3.4: Qualifications and Vocational Background Overview

Type 1 Workers

Of the nine Service Desk workers interviewed, two (Navinda and Asghar) reported having a higher education qualification in computing. Three (Asghar, Ravi and Jonathan) had been trained in ITIL. Ravi had also gained a Microsoft technical qualification and Jonathan an 'IT Professional' National Vocational Qualification (NVQ). By contrast, five of the nine had not been educated nor trained in IT beyond basic user level (see Appendix E).

Four of the five without IT technical qualifications were mid to late career women who had left full-time education at the earliest opportunity. Amongst these was Sandra who reported that she had left education at aged 16 after GCSE's and adjudged that she had accumulated 12 years' experience of working in IT. She had studied for an IT User qualification and was progressing to the advanced level; but had not acquired any qualifications relating to her work as a support technician.

> Sandra (SCES): *I've done the ECDL[3], we've got the books for MCDSL or whatever it is, not that I've ever even had the chance to have a look.*

[3] ECDL (European Computer Driving Licence) is a level 2 qualification in using IT. There is also an Advanced ECDL at level 3.

Sandra appeared to instinctively recognise that there was a value to gaining vocational qualifications but did not appear to have a personal desire or plan to pursue qualifications beyond that of an IT User. As she later revealed, staff were given half a day a week for self-development which she took advantage of; so there had actually been an opportunity for her to 'look at' the books related to the Microsoft Certified qualification she alluded to (probably MCDST: Microsoft Certified Desktop Support Technician). It seemed that the choices she had made did not include looking at this material.

Similarly Kate and Judy had both left school after taking level 2 qualifications (O' levels) and had not sought to gain any qualifications since then. Their careers had been spent exclusively in the local government sector with gaps for raising children.

> Kate (SCCS): *there was certainly for me no college or uni. It was straight out to work.*

Kate harked back to a time when the expectation of most women, and particularly working class women, was for them to leave school at 16. Similarly, Judy, after leaving school, became a punch card operator at the age of 17 within local government without any vocational qualifications. They had both spent their careers within the IT arena whilst remaining unqualified in IT.

Like Judy, Doris (UKHS) was close to retirement age and had been with her employer for over two decades. In recent years she had been awarded an NVQ in customer service but had never felt any need to gain a qualification in IT, confessing that: '*for me personally, trying to keep up with this new technology, it's a bit of a struggle*'.

The fifth person without IT technical qualifications was Adam who was a graduate and had acquired extensive experience in IT problem-solving over a 15 year period spent largely in the private sector. He had returned to IT in the last few years having spent '*three or four years in sales and account management*'.

> Adam (SCES): *The fact that I've worked in an IT environment for most of my adult life means that probably*

> *my problem-solving skills are a lot better… [I use] a fairly rational approach to any new software problem that we come across…. my experience, my 14 or 15 years have enabled me to be very adaptable.*

Adam's vocational background was such that, whilst not developing objective qualifications, he could capably apply his experiential knowledge to the work that came his way, albeit that work requiring more specialist skills was routinely escalated to a second-line team.

In contrast, Jonathan and Navinda, who both had recently been recruited as 'Senior IT Analysts', suggested that they were overqualified for their actual role which did not require them to use to any great extent the technical skills they had acquired. Both complained about their restricted rights:

> Navinda (UKHS): *there are things that you know you should be able to do and we don't have the option to do so.*

Jonathan was the only interviewee who had taken up an opportunity to pursue an 'IT Professional' NVQ. However, he gave an impression that taking further technical qualifications was not a priority:

> Jonathan (UKHS): *I've got enough technical knowledge to go on and do a kind of desktop support role now, but I like the service kind of things.*

The recent success of Jonathan and Navinda at gaining their current employment would appear to have relied upon their qualifications as much as their limited experience. The youthful appearance of the main SCC Corporate IT Service Desk team, coupled with comments made by Judy and Kate who worked separately from them but to the same management line, suggested that they were in the early stages of IT careers. They appeared capable of handling a range of IT incidents within the 20 minute timeframe before escalation became mandatory. I was made aware that they were fairly new recruits to the authority and, from informal discussion with IT managers in their line of command, it emerged that they were recruited partly based on formal relevant IT qualifications.

The impression formed is that Type 1 workers are a mixture comprising two groupings. This differentiation was identified by Navinda (UKHS) in respect of the personnel of the UKHEE IT Service Desk: *'There are people who have come in fairly new and there are people who have been there a long time and they are very set in their ways'.* The former tend to be younger and have formal IT qualifications and the latter older with a large stock of contextual knowledge from working over a long period of time in an organisation. Recruitment policies would appear to favour the first grouping with objective formal qualifications being essential in a way that they were not for previous generations.

Type 2 Workers

Of the eight IT service support workers who fitted the criteria as Type 2 workers, five had been educated to degree level (Tom, Roger, Gareth, Lauren and Charles) and two others had post-compulsory-education technical qualifications (Stephen and Dick). The exception was Harry, a worker in his fifties who had left school after taking O' levels. All, except Lauren, had engaged with proprietary technical certification programmes (e.g. Microsoft Certified Professional, Apple Support Professional). Additionally, Roger and Tom had been trained in ITIL (see Appendix E).

All four of the interviewed workers on the SCC Corporate Desktop Support team had worked in IT for over a decade. Stephen had over 23 years worked for various companies and as a self-employed IT consultant for ten of those. During that time he had developed his skills working with a wide range of new technologies that had made him attractive to the Council at the recruitment stage 18 months previously. The other three team members interviewed reported that they had spent most of their career at the Council and came together as a team through the merger of various department-specific IT teams across the Council. As Harry reported, they were recruited into the team '*through osmosis'*. Of the other SCC workers, Gareth had the most relevant

background experience having previously worked at three other places in IT technical roles, one of which was on the IT service desk of a major bank. Roger by contrast had moved into IT from a background in Chemistry and then the Council's Social Services department. As such he expressed that he felt that he had '*got quite a bit of catch up to do with the technical stuff,'* although this was not readily apparent during observations of him at work.

Lauren had been in her IT-based support role for three years, having moved there from the Building Materials Division of Stoneworks. Whilst displaying technical skills in relation to the in-house applications she supported, her knowledge strengths (and that of the Business Services support team) were primarily related to the context of the aggregates business of Stoneworks. Charles, in Stoneworks Desktop Services team had moved to Stoneworks less than 4 years previously, having previously worked in financial services. His first role was on the Service Desk but his technical ability had been recognised and he was promoted to work as a second-line worker, although he continued to socialise with the Service Desk workers.

Type 3 Workers

Of the seven Type 3 workers interviewed, five were graduates with the remaining two (John and Darren) having left school at 16 after taking GCSEs. All except Darren and Paula had picked up a technical qualifications indicating specialist skill sets variously in IT security, networking, Linux environments and Microsoft environments. Additionally, the workers at Poyet had all had ITIL foundation training. Most of the Type 3 workers at Server Control had programming skills covering a diverse range of languages that they used for coding and support work, including PERL, C and JAVA, and all were able to comprehend Linux code.

For the most part, all the workers had managed to forge an IT career from first starting work. Having studied computing at college and university, Lionel had spent some time working in a McDonald's fast-food restaurant but '*as soon*

as I found my job in IT that was it: I was gone.' John's computing skills had previously enabled him to enter the freelance IT contractor marketplace, which often commands considerably greater financial reward than full-time work. But finding himself unable to find a new contract he had recently taken up the full-time role at Poyet.

Identification with IT as a Career

Type 1 Workers

Identification with a career in IT might be seen as flowing from the workers' individual investments of time and energy in proactively pursuing IT qualifications and work. As previously identified the Type 1 workers seemed to be divided into a younger, technically educated group and an older group whose organisational value lay in their contextual knowledge. The younger grouping (Asghar, Jonathan, Navinda, and Ravi) can be seen to be predominantly male and in the early stages of an IT career founded on formal qualifications. The older grouping (Adam, Doris, Judy, Kate and Sandra,) can be seen to be predominantly female and generally in such low level IT jobs on account of ***not*** making individual decisions to enhance their career through seeking technical qualifications or more technically challenging roles. For the women it might be suggested that their lack of career progression along a technical trajectory resulted from gender-based social and familial expectations and obligations, and/or gender discrimination across their careers (e.g. through being overlooked for career advancement opportunities).

In the younger group, Asghar (STOS), who had joined Stoneworks on completion of an HND in computer technology, identified himself as a '*techie*' and revealed an ambitious frustration at not being able to develop his technical skills to his satisfaction:

> *From when I first started I could say that my IT had not really taken off as I would have liked it to… This week I'll*

> *be getting to help the desktop team installing… hardware for the wireless, so that is intriguing and I look forward to that.*

Jonathan (UKHS) similarly saw his role on the service desk as a stepping stone to a job within a second line team, where he could work more technically:

> *What I find frustrating is that in my head I've got a lot of technical knowledge… I believe I could move on and do a kind of desktop support role now.*

But he also revealed a tension in his career decision-making:

> *I like the service kind of things and that is why I've moved into this kind of more senior role on the Service Desk rather than moving into a desktop position.*

The second group can be seen to generally comprise more contextually-experienced workers who thought that their IT skills were limited by comparison with those in the first group. Judy (SCCS) differentiated herself from the main service desk group of younger workers (which she referred to collectively as '*the boys*') on the grounds of technical capability:

> *They are technical, and they are all there, and can do all singing, all dancing ... they know more ... when somebody rings up and asks them how to do this, how to do that, they know and can help.*

Despite her self-appraisal of lacking technical capabilities, Judy clearly recognised that she was present at the infancy of IT within large organisations. However, she appeared to make a differentiation between 'data processing' before she left work to start a family and 'IT' when she came back.

> *I was a punch card operator when I left school… that's 44 years I've been in IT… not 44 constant years, I left to have children, then when I went back it was into IT.*

Kate (SCCS) shared the differentiation that Judy made between data processing and IT and appeared to have a more tenuous relationship with IT as being 'her' career: '*I was in data prep for nine years before I came here and then I transferred straight to* ***this IT***'

It is interesting how she referred to IT as 'this IT', suggesting IT is somehow not something she intimately identified with. They both more closely identified with the authority's computer systems rather than with generic IT systems. Neither Judy nor Kate wanted to develop their IT skills significantly. Judy was thinking about retiring and Kate, despite being anxious about her future at the authority, was resistant to formal learning:

> *I don't feel as though there is any long-term future here, and even if I am still employed here I don't know from one 12 months to the next what I might be doing… I would hate to go on a proper training course. Don't suit me, don't learn a thing.*

Judy seemed to believe that IT is a young person's occupation and it was beyond her to pursue a career in IT outside of the county council: '*The young lads… they are more up with the technical knowledge of today'.* Doris (UKHS), although being in an IT service support role, similarly did not identify herself as being a particularly technical worker:

> *'Technology is changing all the time and for me personally trying to keep up with this new technology it's a bit of a struggle … I certainly know that I am not ultra-technically minded. I'm not. You know, some things are just so far above my head it just completely baffles me.'*

Like Judy and Kate she acknowledged that, whilst others brought technical expertise to the team, she contributed valuable experientially-acquired knowledge of the organisation's historical practices and its people: '*if they are not sure of anything* [UKHEE]-*related they just shout up and that's fine.'*

Although a graduate and in early-mid career Adam (SCES) appeared to have more in common with those in the older grouping than the younger

grouping. He thought that he had an IT career but had not managed it successfully so as to protect his future prospects:

> *I want to do some professional training… to formalise the skills that I do have... Unfortunately in today's current economic climate it doesn't really count for much if you just say '**I've got this much experience**'.*

It seemed that there was a note of frustration in Adam's voice. Like the others in the older grouping his decision to *not* pursue more technical qualifications suggested his career had stagnated. Certainly he did not display the optimism of the younger grouping of first line workers.

Type 2 Workers

In interview all of the Type 2 interviewees except Lauren (STOB) identified strongly with being IT technicians, and proudly reported their industry-standard professional qualifications. They also typically intimated that they relished resolving technical issues and had over time acquired expert technical knowledge.

Gareth (SCES), who claimed to have advanced technical knowledge working on servers, reported that it was important for technicians to develop skills over time: *'they need to start at the root stuff of IT support'.*

Stephen (SCCD) acknowledged IT technical work as a vocation that suited him.

> *My job to most people is boring… I love it because I love technology and I love exposure to technology.*

He had previously been self-employed and reported that he missed the freedom to work with the latest technologies, but remained motivated by the challenge of resolving technical issues, and frustrated when time-pressures prevented him from fully-engaging with the root causes of an incident:

> *I do like getting my teeth into solving problems and it doesn't happen very often because… of the timescales we work to… You can get an interesting problem... but the time to get from starting point to resolution is going to be too long … so we just put that on the back burner… just fix the problem and … get it back to the customer.*

This desire to understand the technology at a deep level was also mentioned by Charles (STOD) who explained that he got pleasure from *'getting to the bottom of [an issue]… actually finding out, learning something new, that's what gives me the buzz.'* Similarly, Dick (SCCD) reported that he enjoyed working hard on *'a difficult issue [that's] been an interesting one to burrow down to resolve.'*

At the time of interview Roger (SCCS) was finding it difficult to resolve a tension between his role as a technician and an increasingly significant amount of management work:

> *Doing a lot more management stuff… doesn't leave enough time for learning the technical stuff which I'm getting quite behind on.*

From the short-term perspective of the organisation this tension was of little concern. For Roger, with a longer-term personal career perspective, it clearly was.

Type 3 Workers

All of the Type 3 workers interviewed, with the exception of Paula (POY), gave a strong impression of being confident, highly technical workers with the capabilities to engage with all manner of contextual IT related matters that came before them. From the interview data there emerges a common narrative of being enthusiastic about their work as technicians.

At Poyet, both Mike and John confidently spoke of themselves as being IT experts with specific specialities: Mike's experience had resulted in him developing a broad knowledge of Linux / Unix, whilst John's background was in Microsoft operating systems with recent experience of cloud computing and virtualisation.

> John: *When it comes to Windows, servers and so on I'm an expert.*
>
> Mike: *Without blowing my own trumpet too much, I'm certainly more than competent. I have to be.*

Anthony (SER), amongst other Type 3 workers, was keen to extend his technical knowledge outside of the boundaries of his role, thus affirming his commitment to developing his IT career.

> *I've been doing my CISCO qualifications which are… really more advanced networking and things, which is good because I can bring skills back here... I spend a lot of time at home studying.*

The separation between work and home life is similarly a fine one for Lionel (SER):

> *My partner is quite understanding when I sit at a computer for an evening trying to get something working, out of hours.*

For Darren (SER) his IT career was founded upon a passion for home computing. As a hobby he had taught himself how to build computers and work using Linux code, and it was this experience that had enabled him to apply for the job at Server Control. His role within the team was primarily related to the support of hardware and he held the belief that this was something '*you are either good at… or you're not.'*

Status within Organisation

Type 1 Workers

Across the interviews with Type 1 workers common themes emerge that confirm that first-line IT service support work is perceived to be low status work within organisations. Workers talked of it as being highly regulated work that was 'looked down upon' by those who were or considered themselves to be higher in the organisational hierarchy. Another general finding is that the work appears to be largely unappreciated and marginalised within organisations. Type 1 workers also suggested that Service Desk work could alternatively offer career potential or career stagnation at the bottom of the organisation and/or IT profession.

Asghar's (STOS) work on the Stoneworks Service Desk had been highly bureaucratised with calls typically queuing to be answered and dealt with quickly. The effect of this was that he was unable to develop his skills as he wished and this had implications for his self-perception of status. He talked of '*moving up in the technical roles*' thus placing himself below the second and third line workers in status.

Jonathan (UKHS) similarly referred to service desk work as a lowly place to move on from: *'it's a brilliant starting point and springboard into IT.'* He also implied that, despite having been recruited into the UKHEE service desk as a **senior** analyst, his status was lowly *vis-à-vis* second-line workers and that this was reflected in the restrictions placed upon his autonomy and his pay which he implicitly referred to when positioning himself as being 'other' to and disunited from Type 2 colleagues: '*as you know they are paid far too much to do stuff that we could be doing.'* Navinda (UKHS) suggested that their 'senior' job titles did not reflect their actual status: '*although we are senior analysts we do a lot of first-line support because if we just ignored the phone… there would be quite a lot left to do.*' She also intimated that the first-line workers had to manage their emotions in a similar way to call centre workers, and in a way that second-line

workers didn't: *'At the end of the day we are the ones picking up the phone and being shouted at in the ear.'*

The lowly status of some front-line IT service support workers might also be suggested by their separation from other workers and the workspace allocated to them. Specifically, the Stoneworks' Service Desk team were visibly separated off in a glass-walled room and were allocated desk cubicles half the size of the desk spaces allocated to other IT workers.

Typically, Type 1 workers reported that they had little or no interaction with senior managers. For example, Jonathan (UKHS) said: '*I don't know the senior management and they don't know me.*'

The Stoneworks' Service Desk supervisor, Ravi (STOS), was particularly forthcoming about the perception of service desk work as being low status:

> *Generally Service Desk are kind of thought to be those people that are under you, and people… just think '**yeah, helpdesk, they'll deal with all that crap**'… It is a bit of a dumping ground… These guys are… definitely not valued as much as they should be.*

Adam (SCES), like Asghar and Jonathan, presented himself as confident in his capabilities and gave an impression of being frustrated at working beneath these capabilities, implying dissatisfaction with the status of the role. He revealed his perception of this status rather sardonically when asked what his job title was: '*Service Desk Assistant: very glamorous!'*

Kate's (SCCS) and Judy's (SCCS) status within the organisation was reflected in their marginalisation even amongst the other first-line workers. Late in the interview, Judy summed up their sense of their status in management's eyes as being below that of the main service desk workers: '*The perception is that they don't look on us as being as important as them'.* As evidence of this they told of how, despite SCC having a policy of annually appraising worker performance, neither Kate nor Judy had had one for several years:

Judy: *We've had two appointments and they've both been cancelled* (both laugh)

Kate: *So, we're extremely valued you see* (both laugh).

Kate's sardonic comment is cutting and reveals her perception that they were not seen as being important workers by management. When asked why they felt they hadn't been appraised '*for years*', Kate and Judy took it as an opportunity to give their opinions on their perception of others' status perceptions of them:

Kate: *People above you just aren't bothered… just because we're not vocal people… it doesn't mean we're not entitled to as much… attention (*Judy*: Attention, that's right) from Management as others (*Judy: *Yes, that's right).*

Judy: *… because [the main service desk] are technical and they… can do 'all singing, all dancing' they are more appreciated than Kate and I because they are thinking '**Oh they are just doing that. They are just Admin'**... I do think the boys are more appreciated because they know more* (laughs)*.*

Interviewer: *Do they know more?*

Judy: *I think they do.*

Kate: *In different areas. (*Judy: *Ahh*....(laughs)*) They couldn't come in and sit and do our job.*

They recognised their crucial value to the organisation as providers of IT access to the Council's workers and the importance of the contextually complex knowledge they used in performing their duties. They implicitly felt that they were not accorded the respect or gratitude for their work commensurate with their commitment to the organisation.

Judy: *We are knowledgeable about... the systems… we know, [but] we can tell that it's looked down on (*Kate*:*

Yeah (laughs)*). Can you remember that sketch, you know, '**I look down on him and I look up to him**[4]'? Well we feel that they look down on us because… we just do admin. We know a lot of knowledge… but… we're not technical you see, so we're lower than them.*

Kate: *But what we overlook is they haven't got the knowledge that perhaps we've got on the systems.*

Judy: *…They think that… the job they do is more important than ours because '**oh we only give access, and we only do this and we only log calls**', you know we don't, but they don't see that as important.*

Status and respect were clearly important to Judy and Kate and yet in observing them at work they appeared to retain a dedication and work ethic professionalism that pushed these resentments to the background. Judy and Kate exuded humility and accepted that across their long public service they had remained lowly within the local authority's hierarchy:

Judy: *We started off as punch operators*

Kate: *Oh we've rose to great heights since then* (both laugh)

Kate's comment is, of course, ironic. They knew their place and noticed the attitudes of others: those who sought collegiality and those who sought to 'Lord it' over them. Kate, with Judy's support, made clear that she felt more 'associated' with workers of lower status than those of higher status who might display an air of pomposity or, to use her language, '*so far up 'emselves*':

Kate: *We liaise with people at all levels* (Judy: *Yeah, we do*). *You can have one phone call that you will liaise with a school caretaker* (Judy: *Yeah, yeah*) *who is asking you for his password because he wants to look at his e-mails that*

[4] Judy is referring to 'The Class Sketch' acted by John Cleese, Ronnie Barker and Ronnie Corbett. This was first broadcast on 7 April 1966 in an episode of the BBC's satirical comedy programme 'The Frost Report' (YouTube, 2011; BBC, 2012).

> *he only uses once a month*. (Judy: (laughs))*... He's probably the loveliest chap you can sit talking to and tell you about where they're going on holiday and this, that and the other…. You then get the other extreme where you might have a councillor's PA* (Judy: *Yeah or even the councillor*)*… who are, excuse the expression, but some of them are so far up 'emselves that they think you are just there to '**I want you to just drop what you're doing right now. I want you to do this**'*.

Kate's words, supported by the encouraging affirmations of Judy, are the industrial relations language of 'Us and Them'. In her perception, the 'Us' are the grafters who are working honestly and collegially for the good of the organisation, and the 'Them' are those who, for their own purposes overtly assert power over those they perceive to be lower status without considering the work pressures facing them.

Like Kate and Judy, Doris (UKHS) seemed painfully aware of her position at the bottom of the hierarchical structure at UKHEE when she first reports that '*I'm on the lowest payroll grade*' and then when identifying '*red tape, politics and senior management*' as causes of displeasure at work:

> *If someone speaks out of turn or out of position, it's sort of '**Well it's not your place**' so to speak. I find that a little bit difficult. But at the end of the day they are right, so it's not my place to think about that or worry about that.*

Adam (SCES) similarly expressed resentment at having status-power asserted against him, recalling an incident in the office that had particularly irked him.

> *You know once… I started 15 minutes later than normal and somebody had a right old go… When I raised the matter with my line manager, they just say '**… that person is like that and… you just have to put up with it**'.*

This sense of being 'looked down upon' emerged as a common theme across the interviews. Jonathan (UKHS) summed up the apparent reality of being a service desk worker within a hierarchically-structured organisation: '*Here it's very hierarchical... It's kind of like:* ***'big shot, big shot'****.'*

Whilst Type 1 workers commonly seemed to accept their comparatively lowly organisational status, they did not necessarily make an association between that and job security. Indeed, Asghar (STOS) spoke enthusiastically about Stoneworks offering him a career structure he wanted to pursue, even though he was aware of recent redundancies at a higher grade level within the IT division. He was though restless in his ambition and keen to take the next step: *'I know… what I need to do to progress'.* Jonathan (UKHS) was similarly restless but had recently demonstrated his individualistic spirit by choosing to reject the security of the job he had (at Stoneworks) and seek out an apparently career-enhancing move to another employer (UKHEE). It was only the Type 1 workers at SCC who acknowledged any fragility to their tenure that might be associated with the societal shifts associated with the neoliberal agenda discussed previously and of which Bauman (Network, 2012, p. 26) has remarked lead to '*domination [being] exercised… not by supervision, not by surveillance, not by… punitive sanctions… but by plain uncertainty'*. In acknowledging a job insecurity that directly stemmed from an ongoing large-scale redundancy programme across SCC, Judy clearly believed that having a higher status offered little protection: '*Nowadays, in this day and age, who is secure?*'

Type 2 Workers

From the data a pattern emerges of the status of Type 2 workers being in part different than and in part similar to Type 1 workers. The differences are in their seemingly higher self-regard and the apparent greater autonomy they have as workers. However they retain similar insecurities and a similar sense of being undervalued.

The Type 2 workers tended to be confident with their technical capabilities, typically according themselves status as expert workers who had personally-interesting work that was important for the maintenance of organisational business functionality. Dick's (SCCD) view was that:

> *Every day is different… every day is a bit of a challenge because you don't know what you are going to be faced with … something to almost look forward to coming in for. It's not routine.*

However, this was not a universal view amongst Type 2 workers. Indeed, Stephen (SCED) and Gareth (SCES) bemoaned the lack of challenge in their work.

Several of the interviewees intimated that their expertise accorded them status with their peers within the team and more generally across the organisation.

> Roger (SCCS): *I'm supposedly the senior member of the team… If people need to know stuff about what happens then they usually come to me first.*
>
> Gareth (SCES): *People actually go to you and ask you stuff. That is nice that you are looked up to a bit, because I've been in jobs where you are not really looked up to.*
>
> Harry (SCCD): *Sometimes you can be like a knight in shining armour as you walk into a site that is down and you resolve it.*

Nonetheless, the work was also acknowledged to be work at a low-level within the organisational structures. Stephen, talking of his current position, clearly envisaged he was someway down the pecking order and that there was an opportunity to '*work your way up'*. Similarly, Charles, as a 2nd line worker, looked up to those '*on the third line* [who] *are very much technical'*.

Charles and Tom were in tune with the Type 1 workers who took exception to those who '*looked down'* upon them and treated them contemptuously.

Charles objected to '*demanding people* [who] *are in a certain position [and think…] that they should be sort of streamlined to the front … you know and they want it fixed there and then*.' Similarly, Tom reported that:

> *We get the ones who will suddenly just explode at you when you've just turned up. They've logged the call that morning; you've gone out there as quickly as you can; but because you're IT and it's an IT issue, it's your fault... You know* [long pause] *you have to have a bit of a thick skin sometimes.*

Despite having marketable technical skills and experience, the Type 2 workers were generally revealed to be insecure in their work. Harry (SCCD) and Stephen (SCED) were keen to report that their teams had all recently had to reapply for their own jobs and were now working under revised contracts of employment. This had left them less confident about their ability to remain as respected technicians.

> Harry: *One or two months ago we would all have said we were very insecure because we'd all been issued with 188 redundancy notices*[5]*. So we've all effectively had to reapply for our jobs. We are all about to be issued with new contracts etc. so we feel we're probably okay for a while but in the long-term who knows?*

To put into context his insecurity, Stephen (SCCD) summarised the story of his time at SCC:

> *When I first started this job I thought '**fantastic this is it'**. I had a very shaky start to my job… I was left alone and I didn't know what to do because it was all foreign to me… within a few weeks I thought '**I'm going to be looking for another job. I don't like it**'. But as time went by … it started to grow on me … But within six months of me*

[5] This refers to a UK employer's obligation to consult with employee representatives when proposing to make 20 or more employees redundant at one establishment within a 90 day period: Trade Union and Labour Relations (Consolidation) Act 1992 c.52, Part IV, Chapter II Section 188.

> *starting I was given a section 188 notice of possible impending redundancy, and I thought '**oh, fantastic! This isn't really what I signed up for**'. But I got through that; there were interviews and reselection but in the current economic climate it's going to happen again. There's going to be further cuts. There is continual talk of outsourcing as well, so I don't feel as secure in this job as I did in my last job… I'd thought that if I wanted it I could be here for a long time. It makes you … keep in the back of your mind that the job isn't that secure, just to secure it as much as you can, just by doing the best job possible… Now I don't know where my future lies or if it fits with the County Council. The problem is, once you've been here for a while, getting yourself back out into the private sector is a bit tricky, so I don't know.*

Their SCC colleague Gareth (SCES) summed up their lack of power and control over the situation facing them within a wider macroeconomic context:

> *It's one of those things, the council are getting rid of people. There's no jobs out there or in here. But it's a job at the end of the day.*

Along with the fear of redundancy the Type 2 workers at SCC also alluded to other developments associated with the neoliberal agenda. Roger and Harry pointed to their work showing signs of intensity more commonly associated with first-line work, with clear implications for the status of second-line work; and the threat that outsourcing posed to their livelihoods:

> Harry: *We get a feeling… that we're having to do more and more as the resources are being stretched more and more.*
>
> Roger: *The second-line team* [now] *has to support the first-line on the phones quite a lot… because we've taken on extra jobs from other departments… There is a chance*

that we will be outsourced [and]… *that they might thin down the team.*

Type 3 Workers

Like the Type 2 workers, Type 3 workers presented themselves as having a high regard for their own capabilities as technicians. The stark organisational differences between Server Control and Poyet, make any typification beyond this difficult. Mike at Poyet was still harbouring insecurities from recently having to reapply for his job and his colleague John, as a relatively new starter, was understandably not yet settled. The service support workers at Poyet, if for no more reason than they were a small minority of the technical workers employed, appeared to hold a lesser status than the developers, whereas at Server Control the core work was support work and so as organisational assets, they were far more important for organisational success. Conversely, the technicians at Poyet appeared to have greater autonomy than those at Server Control, where the working environment, and what work was engaged with, was more tightly controlled.

The interview data from the support workers at Poyet reveal a perception of low power and status within the organisation. Paula, as supervisor, complained that *'We tend to be put upon by other departments who can't be bothered and as a result … we can be quite defensive,'* and asserted that *'when I joined Support was very much looked down upon.'* The interviews with Mike (POY) and John (POY) suggested that they perceived that this was still the case and that office politics served to reinforce this either through a lack of respect for their efforts or via complaints to managers about the work.

> Mike: *I don't like politics... I don't like being taken for granted... I think we do a very very good job. And, you know, it's just a shame they aren't more interested…. I do loads of cases in a month and some of them are really*

> *good, but I'm the only one who really sits there going 'Oh I did a really good bit of work.'*
>
> John: *I can't abide politics in offices… There's a lot of people here that throw the teddies out at the drop of a hat because they can't get what they want… Here the politics are very personal… small company mentality; you have to rise above that and just let it wash over you.*

These excerpts, along with others at various stages of their interviews, indicate a frustration at a lack of power within the organisation to affect the organisational politics in their favour. Paula was just as forthright in her view that management were deliberately asserting power over the technical staff (both support workers and developers):

> *We are being a bit ruled by fear that you keep your head down; you keep your nose clean because there is this threat of you losing your job... None of us have had a pay rise for two years and we were basically told,* ***'just think yourselves lucky that you've got jobs.****'*

Working within such a small company, formal organisational status was fairly clear cut at Server Control, with Craig at the top, then Nigel as supervisor and the rest of the technicians at the bottom. However, amongst the technicians, status within the company appeared to be in a state of flux, with each being recognised by management in different ways such as allocation of interesting project work, involvement in management decision-making and customer site visits. The office operated a shift system for technicians, with all the technicians taking turns in coming in early and staying late on their own such that in effect they would all at times be in sole charge of the office.

For the technicians themselves, in interview their technical craft, particularly in relation to customers, appeared to be key to their sense of status in terms of being aware of their value to the company. Lionel (SER) reported how customers told him '*We are spoiled by your response times'*, and Anthony (SER) reported how customers '*will just call us up because we are the only ones who*

will talk to them' about technical problems even if it was not directly related to the service provided by Server Control. Darren (SER) appeared to revel in asserting his craft superiority over customers:

> *It is great to chip them down [… prove them wrong especially if they are standing in such a brick wall way 'It can't be me']… not rub their face in it but maybe explain [their] problem.*

8 Discussion: 'The IT Service Support Worker as IS Asset'

In IT service management circles IT service support workers tend to be notionally dehumanised and anonymised as IS assets within processes (Taylor, Iqbal and Nieves, 2007). One of the mechanisms by which this has been done is through the professionalisation of IT work whereby workers can be objectified on account of their qualifications (range and level). Time spent working with specific technology might also be quantified using capability levels (SFIA Foundation/BCS, 2006), but formal qualifications provide a facade of human resource quality assurance. This discussion highlights how this trend towards rationalised professionalism is borne out by the collected data and compares and contrasts it with an alternative perspective which is more intimately felt by many IT service support workers: the striving for personal fulfilment through a journey of craftsmanship. These themes of professionalism and craftsmanship are returned to in the other chapters as is another worker perspective that is briefly mentioned here: the emotional effects of their objectification within IT service support systems.

Towards Professionalism

As previously mentioned, the dominant voices in the ITSM field proclaim ITSM to be a professional practice (Taylor and Nissen, 2007). This raises the

question of whether it is only the managers that should be accorded the label of 'professional', or whether those who work within ITSM environments, notably IT service support workers, might also be regarded as professional workers. Previously it was suggested that the SFIA categorisation of IT service support work promoted the idea of it becoming professionalised, but that at the same time the association of IT service support work with call centre work undermined this.

The data from this study point to IT service support work becoming increasingly professionalised in terms of the credence given to reputable objective qualifications, albeit that these qualifications are fragmented to reflect the many specialisms within the work sphere. The interviewed and observed IT service support workers might be crudely dissected into those who had engaged with formal IT vocational qualifications and those who had arrived in their IT role without IT qualifications and had learnt to be capable at the job by doing it over time. Considering the data relating to the recruitment of Type 1 workers, it seems that for entry into these roles having objective IT qualifications had now become important. Given that Type 1 work is typically regarded as a first rung on the IT career ladder (SFIA Foundation/BCS, 2006), the implication is that new recruits to the industry bring with them a body of IT knowledge from formal education in a way that previous generations of new recruits did not. As such it might be said that, running parallel with the endorsement of the SFIA framework by the BCS, IT service support work is part of a trend within the broader IT occupational sphere and the broader-still service sector that indicates a greater emphasis being placed on certified training provision (Grimshaw *et al*, 2002). Thus, it might be said that in line with the rationalisation of workers implicit in the ITSM 'best practice' literature, IT service support work is moving in the direction of becoming more formalised and thereby it might increasingly be regarded as 'professional' service work compared to traditional professions, such as law, with a similarly formal knowledge base but having a more apparent business services orientation (Fincham, 2012). Most of the older workers who had been working in their field for years had not embraced this movement towards the objectification of capability (i.e. the authentication of professionalism through qualification) and

as a result were largely uninterested in or resigned to not progressing along an advancing professional career path. The exception amongst the older interviewees, Harry (SCCD), worked in a second-line team where it had become the norm to acquire formal proprietary IT qualifications. If IT service support work is representative of IT work generally, it would seem that in order to progress an IT career, individuals, including first-line workers, must engage with formal IT qualifications as a method of acquiring recognisable proof of their theoretical competence, and thereby, competitiveness within the IT labour market place. These include both proprietary ones such as those offered by Microsoft and Novell, and more generic ones such as those offered by universities and reputable examination boards who oversee practitioner qualifications. These qualifications are 'badges' of having theoretical knowledge, and given the connection that Abbott (1991) makes between personally retaining theoretical knowledge, and professional status, it might be reasoned that those IT service support workers who have the superior mix of quantity and quality of IT theoretical qualifications can lay greater claim to being IT professionals rather than 'mere' IT workers. This association between theoretical knowledge and professional status is returned to in Chapter 4.

Further it might be seen that there is a need for IT service support workers to ensure currency of ‘professional’ credentials. It appears incumbent upon the IT service support worker to continually upgrade and update their IT qualifications so that they might achieve *'serial mastery’* of different facets of IT service support work within the broad and dynamically fluctuating IT profession (Gratton, 2011a). The evidence points to individuals engaged in Type 2 and Type 3 work already doing this to retain positions offering the highest salaries.

For organisations there is a danger emanating from this phenomenon in that by extolling the virtues of professional qualifications the risk is run of undermining the importance of deep-level experiential knowledge built up over time by notionally 'unqualified' workers working for relatively low salaries (as previously discussed) as cogs within unique organisational IT systems. For example, the data reveals that the access management work performed by Judy and Kate had a significant level of objective complexity but, because they had been satisfactorily performing this work over many years thus rendering the

work subjectively straight forward, the knowledge they used for this work was barely acknowledged – even by themselves – and professional qualifications would likely be of limited value to a replacement worker should Judy and Kate leave without satisfactory knowledge transfer. However, their low organisational status would appear to preclude them from an association with professionalism or expertise. For example, Fincham (2012) in his classification of expert labour specifically refers to high status as being a key determinant in the categorisation of IT workers within a business services expert labour grouping.

Related to this, there is a relationship between being regarded as a professional and being respected as a worker. The issue of respect runs deeply through the collected interview data, with Type 1 workers typically reporting significant feelings of being disrespected. Thus we can compare Ravi's assertion that the service desk is '*a bit of a dumping ground'*, Adam's ironical reference to his job as *'very glamorous*', and Judy being reminded of '*the Class Sketch*' from '*The Frost Report'* (Youtube, 2011; BBC, 2012) with Williams' (2013) argument that contemporary management techniques, with their focus on setting worker performance expectations and continuously monitoring their activity, conceal a corporate contempt for low status workers, and Sennett's (2003, p. 3) definition of 'lack of respect':

> *No insult is offered…, .but neither is recognition extended; he or she is not seen as a full human being whose presence matters.*

For the more skilled Types 2 and 3 workers the situation is typically different. In general, the study suggests that, with exceptions, they are generally highly respected by their managers and most, but not all, of those they serve on account of their ability to fix seemingly difficult problems or fulfil complex service requests. It is perhaps these comparatively higher status workers that Fincham (2012) has in mind when he specifically includes IT operations and user support alongside IT managers and IT professionals within an 'IT expert labour' grouping.

Towards Craftsmanship

As previously discussed, the dominant discourse within ITSM circles concerns process efficiency and management control. And yet, as Sennett (2009) argues, over-control has an effect of stifling craftsmanship. The data from this study suggests that in the 'real world' of IT service providing organisations, there is a clear tension between control and craftsmanship, and that the differentiation between types of IT service support worker highlights this tension.

The data suggest that, in particular, Type 1 workers who have remained within their organisation for an extensive period at the same level tend to not strongly identify themselves as craftsmen/women, or what might be referred to as IT careerists with a desire to develop their IT skills towards expertness. Rather, in parallel with their contextual knowledge being of recognisable value to themselves in their work and thereby to the organisation, their orientation tends towards their employing organisation.

More recent recruits into Type 1 IT service support work, along with Types 2 and 3 workers, tend to show a stronger affinity to IT as a craftsman-like career. These workers have typically individually invested in: (i) studying for and acquiring formal qualifications, and (ii) developing and refining over time generic IT-related capabilities. Together these personal investments have the effect of connecting the workers to the broader IT worker community and IT labour market place. Typically such identification is not to the exclusion of a self-identification as being a holder of important contextual knowledge within a setting that provides them with an outlet for the use and development of IT knowledge/skills within a familiar (i.e. well-understood) IT environment. In this respect most IT service support workers are revealed to develop duel identities as IT artisans and company loyalists between which there is a tension (Kinnie and Swart, 2012) that at critical points may require one of these identities to assert itself.

This tension was apparent in the situation that Roger (SCCS) reported he currently faced. He was being led into accepting greater management

responsibility within his organisation but was aware of the impact of this upon the development of his IT skills. At such critical points an individual worker might choose to assert one identity-forming force against the other, for example by moving to another job with a different employer to further develop their IT skills (asserting their identity as an IT craftsman) or accepting greater management responsibilities at their current place of work (asserting their identification with and sense of belonging to the organisation).

Contrasting decisions had been taken by John and Paula at Poyet. John's dominant identity-forming force was that of being an IT craftsman. He had recently enjoyed the challenge of moving between different short-term IT contracts, developing his knowledge as he went, and in his present role he reported being most motivated by his involvement in the company's virtualisation project because it offered him the opportunity to *'slide and morph'* (Gratton, 2011a) into IT areas that were becoming more prevalent, thereby making him more marketable in the labour market. By contrast Paula, exceptionally amongst all the Types 2 and 3 workers, had shied away from taking on technical responsibilities despite there being ample opportunity to do so, preferring to focus on supervisory and administrative duties whilst looking to develop her career away from IT service support work.

The noticeable technical confidence displayed by many of the Types 2 and 3 workers might be related to them developing specific detailed knowledge within an IT specialism. Where workers were called upon to act at the boundaries of their specialism they acted less confidently, e.g. taking their time, reading manuals and 'visibly' thinking and asking for help. Thus there might be said to be a relationship between identification as a confident IT craftsman/woman and learning. Where IT service support workers are familiar with the incidents they are tasked to deal with, however objectively complex they might be, they work with apparent confidence moving seamlessly from one step to another, but do not extensively develop their knowledge/skills. It is though the times when they display less confidence as they work at the boundaries of their existing personal 'stocks of knowledge' that they typically relish the most; as Charles (STOD) had put it: *'learning something new, that's what gives me the buzz'.* So, in contrast to the prevailing ITSM management culture that desires control to provide

confidence that systems are robust, it might be said that many IT service support workers at a personal level desire, at least to some degree, the opposite. They want to be pushing at the edges of their personal control over situations that face them (i.e. the incidents they are tasked with to investigate and resolve). It is through facing 'new' challenging situations (i.e. incidents) that a worker's personal confidence might be extended as they learn how to overcome any barriers they encounter that place restrictions on their confidence. Thus they might develop their craft by *'sliding and morphing',* equipping themselves with skills that have currency (evidenced by the fact that the situation has just occurred and is new to them).

The conception of IT work as a craft must take account of the rapidly changing territory as new technologies replace old technologies, requiring new skills and knowledge to be humanly applied in the support of them. A traditional but less complex craft, (e.g. upholstery) might result in the modern-day worker adopting some changes to the way they work (e.g. using a staple gun instead of hammer and tacks), but such changes are around the edges of the core skills that are honed by the craftsman/woman over time. For an IT worker, the environmental changes are outside of their control and an ever present force upon them. By way of example, at SCC the responsibilities of the Desktop Support team had recently been extended to include the support of mobile devices but at the same time a project to standardise desktops around the council's diverse offices was making some of their skills and knowledge redundant. Thus whereas skilled upholsterers have a low risk of losing their acquired craft skills, IT workers have a high risk of doing so as the environmental situation '*slides*' away from them. Thus the skills related to RIM BlackBerry devices still being acquired by the IT service support workers at SCC at the time of observation may now already be sliding towards redundancy (e.g. if a decision has subsequently been made to move away from using BlackBerry devices). To keep their footing on this slippery surface the individual IT service support worker must *'morph'* into a worker with a different individual skill set offering that includes the new skills and knowledge related to the incoming technology whilst retaining the contextual knowledge acquired whilst working with the old technology. Thus if another mobile device becomes the

standard issue, the knowledge previously acquired is fused with the new knowledge: thus '*morphing'* occurs (Gratton, 2011a).

As discussed, IT service providing organisations are encouraged by a prevailing powerful ITSM discourse to rationalise workers. By implementing ITSM best practice managers distance, depersonalise and dissemble workers into anonymised ‘resources’ and ‘capabilities’ (Bauman, 1989; Taylor, Iqbal and Nieves, 2007). As such they might be said to be un-acknowledging, if not unaware, of their dependency upon individual IT service support workers’ capabilities to *'slide and morph'* so that their systems might remain robust as they technologically evolve. Technologically evolving organisations rely on IT service support workers to carry forward some aspects of the contextual and technical knowledge relating to the out-going technology. Whilst the importance of knowledge passing through time from project to project has been acknowledged (e.g. Swart and Kinnie, 2003), the importance of knowledge passing through time from technology to technology within an ongoing project such as that of an IT service support function has not been similarly highlighted. This study promotes the suggestion that behind the rationalising management techniques promoted by the ITSM ‘best practice’ literature there remains a management expectation that actual individual workers will fuse this carried-forward knowledge with the newly-acquired knowledge relating to the incoming technology. It is contended that this expectation goes unacknowledged because such ‘best practice’ fails to acknowledge an inconvenient truth that workers are individuals who carry in their heads unique historically-formed and contextualized ‘stocks of knowledge’ rather than easily interchangeable assets that are readily available in the labour market. Thus a risk is suggested for organisations that pursue HRM strategies that discourage long-term tenure: whilst knowledge of the incoming technology can be brought into the organisation, those workers will lack essential knowledge carried forward from working contextually with the outgoing technology.

Towards Emotional Labour

An organisational dependency on IT service support workers to assimilate the new into the old may enable Types 2 and 3 workers to maintain the healthy self-esteem levels that were not so evident in the data relating to Type 1 workers. However, the service nature of all IT service support work, and particularly the time pressures associated with the work, reveals a common propensity for significant numbers of those being served by IT service support workers to treat them contemptuously. The suggestion is that it is not only Type 1 workers who might be associated with the emotional labour demands of call centre workers (e.g. Taylor and Bain, 1999; Deery *et al*, 2002). In the same way as call centre workers have a need to manage their emotions when confronted with unsympathetic 'customers', IT service support workers might expect to face similar hostility at work from those they serve. This is mentioned here because of its association with occupational status, but is returned to in Chapter 5 for a more thorough discussion as a key issue in the conceptualisation of IT service support workers as service workers.

9 Conclusion

In this chapter the IT service support worker has been conceptualised as a rationalised asset within the IS setting. It has been suggested that 'best practice' within such settings encourages managers to dehumanise and anonymise workers, dissembling 'real' humans into conceptual 'assets' and 'capabilities' to be employed for clearly defined purposes. Such a mindset inevitably encourages a short-termism based around current IT projects. This has clear implications for the IT service support worker seeking to self-manage a career across a longer time frame.

A novel theoretical model was presented that identified 'IT service support workers' as a distinctive class of IT worker (Figure 3.1) and through using this it was established that this class of workers, reflecting a lower status, were

generally paid less than other classes of IT worker. The research data have indicated that amongst IT service support workers, Type 1 workers are accorded the least status and this upholds associations previously made with call centre workers.

The data point to IT service support work having become more professionalised through the increasing importance attached by both managers and workers to objective qualifications of both a generic and proprietary nature. The issues of learning opportunities whilst working and the emotional demands of the work have also been raised as being of importance to IT service support workers, and thereby a conceptualisation of them. These issues will be expanded upon further in Chapter 4 and Chapter 5 respectively.

Chapter 4: The IT Service Support Worker as Knowledge Worker

1 Introduction

Knowledge Work: Historical Background

Knowledge work has been around for as long as mankind. The work of the hunter-gatherer was work that relied upon the acquisition, use and re-use of knowledge about the what, when, where and how of acquiring food and materials for survival. The skilled pre-industrialisation craftsman worked with '*knowledge filled with intimate detail of materials and ambience*' (Zuboff, 1988, p. 40). But only in 1957 was the term 'knowledge work' coined within the business literature, followed five years later by the term 'knowledge worker'. Indeed as recently as 2003 Tom Peters referred to the concept of the knowledge worker as feeling fresh (Deutsch, 2003). ITSM has a particular interest in knowledge work as the occupational sector increasingly sees knowledge rather than capital as being key to competitiveness (Gratton and Ghoshal, 2003).

The term 'knowledge worker' is, like 'knowledge management' (McInerney and LeFevre, 2000), a slippery term. It suggests superiority over an assumed 'non-knowledge worker'. Yet, since all human workers must to some extent use learned knowledge in their work, there can be no absolute non-knowledge worker. Consequently, it must require a socially constructed individual judgement as to the extent of the knowledge superiority of one worker over another.

When Peter Drucker first used the term 'knowledge work' in his 1957 book, *Landmarks of Tomorrow*, he was imagining the future of work as one where the workers were '*the products of the educated society*' but was also aware that already (at least in the USA) '*the majority of personnel employed even in manufacturing industries… are… people doing knowledge work, however*

unskilled' (Drucker, 1957, p. 122). For him, at this formative point for the term, knowledge work was not elitist work but was work which resulted from capital investment in the formal theoretical training of people to acquire knowledge to be used in productive organisational activity (Drucker, 1957; Adelstein, 2007). At this point, knowledge work referred more broadly to, as he put it in his reflections when the book was republished four decades later, '*the shift to knowledge as the new major resource*' (Drucker, 1957, p. xi).

Drucker had been considering the knowledge worker in earlier writing with specific reference to work that might be considered to be part of the ancestry of modern IT service support work. In 1954 he wrote about technological changes greatly increasing the number of '*maintenance jobs*' (Drucker, 1954, p. 291) and referred to the individual 'knowledge work' of telephone installers, which shares similarities with the modern work of installing computer equipment typically performed by IT service support workers.

Exclusivism and Inclusivism

As the percentage of people in the workforce who might be identified as knowledge workers has proliferated (Stewart, 1998; McInerney and LeFevre, 2000), so the evolution of the meaning of 'knowledge work' can be tracked against the changes to organisational structures and technological advancements since Drucker's origination of the term. Hislop (2008) identifies within the academic literature two high-level conceptualisations of knowledge work. Firstly there is the idea that knowledge work is an exclusive term used to differentiate the work of elite and prosperous occupations, typically work that otherwise might be classified as professional, managerial or creative (e.g. Kessels, 2004), or specifically creative IT work (*The Economist*, 2011) or creative work that involves intricate problem solving (Swart and Kinnie, 2003). And by contrast there is the more inclusive perspective by which the knowledge employed by workers in the course of their duties across a broader range of occupations might be considered as being a fundamental part of the work. This latter inclusive perspective is more in keeping with a knowledge-based theory of

the firm, a branch of the resource-based view of the firm that focuses upon knowledge as the most strategically important of organisational resources for competitive advantage (Penrose, 1959; Barney, 1991; Grant, 1996; Gratton and Ghoshal, 2003).

Kanter (1983, p. 56) is amongst those who embrace the inclusive approach to knowledge work, pinpointing 1973 as being '*a watershed in which even shop-floor factory workers may have started to become knowledge workers because of new technologies*'. Here she is suggesting that lower paid/lower status workers were increasingly being required to interact with technology with their activity determined by their perception of the data/information presented to them by the technology. Kanter's association of knowledge work with work that involves the use of technology has similarly been made at different stages of IT advancement, including by: Argyris (1991); Barley (1996); Haag *et al* (2006), who suggest technological advancement as a reason for the proliferation of knowledge workers in an advanced economy; Harper (2010), who notes the requirement for knowledge work technologies to support the distributed activities of globalising organisations; and Malone *et al* (2011) who herald an acceleration in IT knowledge work.

The IT profession retains a reputation as a '*privileged area of the labour market*' (Webster, 2005, p. 4) and there is an implication that the problem-solving work of 'IT specialists' supporting the IT that 'IT users' use (i.e. the work of IT service support workers) has an even stronger claim to being knowledge-intensive 'knowledge work' (Scarbrough *et al*, 1999; Swart and Kinnie, 2003). If those who use IT are to be considered amongst the class of 'knowledge workers' then how much more must those who advise and support them by their capabilities to problem-solve be knowledge workers?

This thesis is not the place to discuss the meaning of knowledge to the deepest philosophical level, suffice to note that no clear consensus has emerged and that it might become everything and nothing (Alvesson, 1993; Grant, 1996). Clearly though a discussion of the knowledge worker and an attempt to deconstruct the knowledge work of IT service support workers needs to take a stand on what might constitute knowledge within an organisational

setting. In doing so, knowledge might be differentiated from data and information which are typically cast as lower level constructs (e.g. Jonscher, 2000, Johnson and Higgins, 2010). Whilst acknowledging that it has its critics (e.g. Alvesson and Karreman, 2001) and explicitly incorporates the word 'information', the much-cited definition offered by Davenport and Prusak (1998, p.5) remains a useful ‘recipe’, indicating its various ingredients:

> *Knowledge is a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information.*

The use of the terms 'framed' and 'framework' points to a systems thinking bias which fits with the ITSM mind-set. Also, the focus on the individual worker’s experience, insight and information in the form of objects and events to be sensed and made sense of with a reference to the worker’s ‘stock of knowledge’, fits with the adoption of social phenomenological methods to gain a greater understanding of the nature of the work of typical IT service support workers.

From an inclusivist perspective, those IT service support workers whose work may be objectively fairly routine (e.g. repeatedly fulfilling common service requests) but which still requires them to be responsive to different contextual data, might still be considered to be knowledge workers even though their practice may not involve significant use of complex theoretical knowledge/skills. From such a standpoint their significant use of contextual customer-related knowledge that is often overlooked on account of its distance from management decision-making (Huczynski and Buchanan, 2001) might define them as knowledge workers. However, from an exclusivist standpoint the term might be restricted to IT service support workers who more closely fit the more elitist definition suggested by Hislop (2005, p.217) as those ‘*whose work is primarily intellectual, creative, and non-routine in nature, and which involves both the utilisation and creation of knowledge*’. This prompts us to further consider what differentiates theoretical knowledge from contextual knowledge.

This chapter considers the extent to which IT service support workers might be considered to be 'knowledge workers'. The argument that they are strong candidates for consideration as such is that their work inherently involves problem identification and solving (Adelstein, 2007).

Several themes are addressed in this chapter, through discursive literature review, data presentation and further discussion in the light of that data. The first of this chapter's themes is autonomy, which has been strongly associated with knowledge working. This is considered within a broad discussion of organisational politics, with particular concern for the ITSM context. This is followed by a wide-ranging consideration of the developmental experiences of IT service support workers within the typified IT service providing organisation. The concepts of learning, expertise and craftsmanship, as well as creativity and skill, are all considered in the pursuit of a deeper understanding of IT service support work as a knowledge-intensive occupation/profession.

2 Autonomy, Organisational Politics and Control

Writing about the telephone installers that he implicitly identified as knowledge workers in 1954, Drucker commented: '*I have never heard ... of any need for checking up on their work*' (Drucker, 1954, p.291). The implication was that such knowledge workers, working as individuals can and should be trusted with unsupervised autonomy in a way that workers '*organised like machines'* (Drucker, 1954, p.290) might not. Drucker suggests that maintenance workers have power over their work but do not exploit that power because there is meaning for them in the work; the autonomous nature of the work empowers them and gives them self-respect. As Sennett writes of autonomy: '*the reward for converting necessity [of working] into desire is self-respect*' (Sennett, 2003, p. 120). Perhaps then knowledge work might be conceived of as work which enables the worker through autonomy to retain self-respect in the workplace.

By the turn of the century, Drucker (1999, p.142) had become more explicit and adamant about the importance of autonomy for the knowledge worker: '*knowledge workers have to manage themselves. They have to have autonomy*'. However, he advocates the management application of both qualitative and quantitative measurements to knowledge work: '*Quality is the essence of the output ... Productivity of knowledge work ... has to aim first at obtaining quality ... only then can one ask: 'What is the volume, the quantity of work?''* (Drucker, 1999, p.143). Perhaps then knowledge work might be conceived of as work which is of a complexity that necessitates the foremost critical eye to be placed on worker performance quality before quantity. And further, that often that critical eye should be applied by the workers themselves. Indeed, given the specialist nature of IT service support work (particularly of Types 2 and 3 workers) it is likely that management would be largely unable to judge work quality and as such the worker is susceptible to becoming somewhat 'invisible' to management. With such invisibility, management might reasonably assume that the work results achieved by IT service support workers meet their requirements, until evidence emerges to the contrary. This chimes with Stewart's (1998, p.48) assertion that '*knowledge work ... has a professional flavour. Professionals are measured not by the tasks they perform but by the results they achieve*'.

By 1993 Drucker's concept of the knowledge worker had similarly adopted a more elitist tone, with the defining of three types: knowledge executives, knowledge professionals and knowledge employees. He also makes a clear differentiation between knowledge workers and service workers who '*as a rule, lack the necessary education to be knowledge workers*' (Drucker, 1993, p.8) and are largely denied the opportunity to move into knowledge work (see Drucker, 1993, p. 206). The contention of this study is that the modern IT service support worker straddles this boundary that Drucker implies exists between 'knowledge worker' and 'service worker'. From an inclusivist perspective it is contended that all types of IT service support work have traits of service work and knowledge work, but to different degrees. Further it is argued that, given that knowledge work is associated with autonomy, and service work is associated with subjugating the self to another person or to a

corporate entity, there is a political dimension to be considered when seeking to conceptualise the IT service support worker.

The knowledge held by IT service support workers can be seen to give them power within the organisational political 'dance' with management. The imagery of a dance generally implies unspoken mutuality and trust, acting together in symbiosis; and this is perhaps the organisational pretence. However, the relationship between management and workers might more usefully be seen as an entrenched political battle between capital and labour with knowledge workers owning the 'tools of productions' which are difficult to control, portable and marketable (Drucker, 1993, Scarbrough *et al*, 1999). By way of example, within the typical ITSM work setting attempts to extract '*valuable knowledge*' via knowledge management databases (KMDBs) can be seen as being '*part of the long-running battle for control over expert labour in the face of heightened uncertainty and risk*' (Chumer *et al.,* 2000, p. xxiii). Such management instinct to capture and control knowledge can be seen to be at odds with the worker instinct to protect their existing personal marketable resource and have ample opportunity to develop their skills/knowledge through discovery, thus bringing them further advantages in the labour-market (Crouch, 2006). As Illich (1971, p. 89) asserted: '*The man who has the skill profits from its scarcity and not from its reproduction*'. This is, as Davenport and Prusak (1998, p.28) argue, the '*reality of knowledge politics ... if knowledge is power, then the owners of knowledge have power that may dissipate if other people come to know what they know*'. The thing about a battle is that not only does there tend to be a victor and a vanquished but the conflict itself tends to be destructive to all parties and their shared interests (i.e. counter-productive to the organisation). After acknowledging this reality of knowledge politics, in the next breath Davenport and Prusak (1998, pp.28-29) nonetheless give a battle cry to the ranks of management pitched against the ranks of knowledge workers:

> *One of the challenges of knowledge management is to ensure that knowledge sharing is rewarded more than knowledge hoarding*.

The word 'ensure' is one of management assertion of authority, control and domination and implies the objective of victory over workers. Further, the

suggestion that workers 'hoard' knowledge is confrontational because it implies that they are deliberately acting against the best interests of their employing organisation. They are in effect being accused of being the enemy within, saboteurs who must be defeated and forced to disclose their hoard of knowledge for truly it should be seen as belonging to the organisation rather than to them personally. Here, the knowledge worker as 'managed human resource' is placed at the centre of the discussion about organisational competitiveness and efficiency. It is, as Little *et al* (2002, p.301) argue, '*clear that the management of people is central to any aspiration to manage knowledge*', and thus establishing and maintaining good industrial relations becomes essential for success in organisations dependent upon the human processing of information and knowledge.

In this analogy of battle the picture is presented of the knowledge worker defending her personal knowledge from the threat of capture by management as servants of capital. The image of the worker not willingly sharing knowledge has gained considerable traction in the academic literature, the assumption being that knowledge workers are inclined to hoard knowledge (e.g. Davenport and Prusak, 1998; Hull, 2000; Walsham, 2001; Beaumont and Hunter, 2002; Quinn *et al*, 2002; Lam, 2005; Currie *et al*, 2008). Predicated by this assumption, the knowledge work discourse that has emerged within the academic literature is dominated by managerial and organisational values and the use of technology to capitalise knowledge, claiming workers' knowledge for the organisation (Bergeron, 2003; Adelstein, 2007). This is, as Willmott (2000) expresses it, '*no longer 'simply' a matter of capturing knowledge and/or disembodying it. It is more a question of how to foster it and diffuse it.*' As will be discussed below, the concepts of the Learning Organisation and Organisational Learning have established themselves as being significant within this discourse.

The assumption that workers will, without appropriate management techniques, hoard their personal knowledge is acknowledged within the ITSM 'best practice' literature (i.e. ITIL): advice is given to practitioners that there is a need '*to encourage members to… move past the old paradigm that knowledge*

is power and job security and therefore needs to be hoarded' (Taylor, Lacy & Macfarlane, 2007, p.194). However, Dixon (2000, p.7) questions this, making an opposing case that people are naturally willing to share what they know but that people are disinclined to do '*a very different thing [and] ... write something to send into a database*' which is precisely what the ITIL authors have in mind when they advocate meaningful rewards for the contribution of 'valuable knowledge assets' (Taylor, Lacy & Macfarlane, 2007). A similar point to Dixon's about worker disinclination is made by Davenport and Prusak (1998, p.110) when discussing an engineering team: '[*they] may have designed a great product, but nobody on the team has the time, inclination, or skill to describe what happened in a project and put it into a repository*'. Their answer is for the organisation to employ '*people who will extract knowledge from those who have it, put it in structured form, and maintain or refine it over time*'. The implication is that with the right skills (they suggest journalistic skills) a knowledge 'extractor' might extract objective knowledge from a compliant worker's rationally-ordered brain just as a dentist might extract an objective molar from a compliant patient's rationally-ordered set of teeth.

Similar faith in techniques to capture and codify knowledge is expressed by other researchers. Staats and Upton (2011, p. 105) call for assumptions about the tacit nature of knowledge to be confronted, arguing that with persistent questioning '*a surprisingly large amount of knowledge work can be specified*'. Ambrosini and Bowman (2001) suggest that a shift from a focus on tacit knowledge to a focus on tacit skills opens up possibilities for using the technique of causal mapping to enable management to capture workers' tacit skills for reuse by others. They argue for the skilled worker to be continually asked what they do that causes success and encouraged to tell stories. There is a power dimension to this approach as the organisation seeks to divest the worker of her skills that by Ambrosini and Bowman's concession are deeply ingrained in the unconscious. The image is one of one-way interrogation which may well result in resistance rather than a two-way social exchange.

Penetrating and controlling knowledge from outside so that it might be transferred from one to another is impossibly difficult (Alvesson and Karreman,

2001) because of the ‘stickiness’ of knowledge (Szulanski, 1996, Szulanski and Cappetta, 2003). And so there is good reason why, as Ambrosini and Bowman (2001, p. 811) put it, ‘*tacit knowledge has resisted operationalisation*’. The intuitively thinking mind often uses metaphors and visual images (Sadler-Smith, 2010) and as Frenkel *et al* (1995, p. 791) state ‘*the emotional quality [of tacit knowledge] is difficult to communicate since it is bound up with first-hand experience*’. More philosophically, Pears (1971, p.37-38) ponders:

> *If I know a taste when I encounter it, or a colour when I see it, must I be able to produce some factual knowledge about it? ... It is enough that I should be able, and know that I am able to recognise turquoise when I see it. I need not even remember where I have seen it before.*

Similarly, Polanyi (1966, p.4) writes:

> *We can know more than we can tell… We know a person’s face, and can recognise it among… a million. Yet we usually cannot tell how we recognise a face we know. So most of this knowledge cannot be put into words.*

In contrast to a formal knowledge capture approach, reflecting the battleground analogy, others make more convincing cases for the promotion of techniques more in line with the dance-floor analogy. Sennett (2009) advocates interpersonal sharing of knowledge across an organisation by way of mentoring which involves an engaging sense of community and learning and which, when perceived as being ‘given’ by a ‘master in the field’, is valued by early-career workers (Gratton, 2011b). Similarly, inter-organisational secondments and the fluid movement of staff support the sociable transfer of tacit forms of knowledge (Easterby-Smith and Mikhailava, 2011). In Yanow’s (2003, p.40) study of organisational learning in a flute-making company, she notes how workers integrate new workers ‘*while keeping language use ‘abstract*’’ and argues that they ‘*might be said to have learned to make their tacit knowledge ‘visible’ to one another*’. The suggestion is that effective learning takes place efficiently through workers 'doing' or 'practising’ whilst being guided by a skilled worker who need

not necessarily employ language as the primary tool for knowledge transfer but nonetheless is intimately involved in the process.

This presents a management dichotomy (or tension) that echoes the contrast between a battle and a dance. On one side there is the rationally and mechanistically-driven process whereby powerful management assert their authority over workers, pressuring them into recording their experiential knowledge as objective information. On the other side there is the promotion by management of mentoring and interpersonal knowledge exchange (Swart and Kinnie, 2003; Bradshaw *et al*, 2009), which is primarily social and fulfils human needs such as being spatially connected to others (as in a dance), being understood by others, feeling free to spend time in communication with others and being altruistic.

As an organisational initiative, the process of mentoring as promoted by Sennett (2009) might be employed by management to encourage knowledge sharing through joint-practice. This inherently implies a significant degree of management control in terms of authorisation and enablement. However, when such control is absent workers may still have a propensity to fulfil those same human needs of connectivity and altruism. Orr (1996) discovered through ethnographic research into the work of highly-autonomous photocopier technicians (i.e. technology service support workers within the ancestry of the workers under study) that they saw it as part of their job to spend liminal work/social times (e.g. lunch and coffee breaks) with each other. At such unstructured 'meetings' they would swap 'war stories' about specific machines. In the process of doing so, they shared elements of their experientially-acquired knowledge such that as a group they might be said to have developed an interwoven collective body of knowledge that might be accessed by them as individuals for the benefit of the organisation. The effectiveness of this unmanaged mechanism was apparent but the organisational security of this collective body of knowledge could only be assured through a management acknowledgement of the importance of experiential knowledge held by specific, named workers. In other words the organisation's capability to repair and maintain photocopiers was resistant to management practice that advocated

the anonymisation and interchangeability of workers. Specific workers with specific experientially-acquired knowledge, working with the support of other specific workers with similar but different specific experientially-acquired knowledge, had quietly asserted their autonomous power by informally/socially discussing matters related to their shared identity as technicians. They had done so not specifically to develop their own primarily contextual knowledge (such as the quirks of particular photocopiers), but for myriad reasons including better enabling them to successfully solve the problems that might come before them and thus enabling them to develop their individual reputations as valuable skilled professionals in meaningful, self-esteem-enhancing work. It wasn't so much in the sharing of the stories that they exhibited their worker power, it was in the exercise of their duties as technicians performing tasks. They were better at their job because of the historical experiences of time spent with colleagues away from their duties performing tasks. Through this cooperative work ethic, how they as individuals carried out task activities was shaped by what Bartel and Garud (2003, p. 326) label 'narrative knowledge': '*an inseparable mixture of both abstract, technical understandings and tacit, informal practices*'.

Orr (1996, p.142) writes of:

> *[celebrating]… the technicians' competent and [collective] heroic practice… as a counter to the image of service presented by the corporation in their insistence that service work is merely following directions.*

In effect, through their instinctive understanding of the complexity of interpersonal '*sense-reading and sense-giving processes*' (Walsham, 2001, p.606) and their autonomous actions of 'finding time' to exchange information, they ascribed themselves to Scarbrough's (1993) assertion that '*coping with technological uncertainty demands a high-level of autonomy*'.

Orr suggests that the organisation's senior management had, in line with Davenport and Prusak's (1998) thinking, an objective image of the knowledge required for service support. From a detached perspective, management

thinking was that anonymised technicians might be trained up so that they were interchangeable clones able to rationally follow instructions. This thinking was implicitly backed by most people in the organisation who had never worked in the field; they regarded the time spent telling 'war stories' as time-wasted '*when one should be working*' (Orr, 1996, p.140). The simplistic belief amongst those detached from an understanding of the work was that the technicians were sharing knowledge that was of no practical use to the organisation. Only the technicians and their immediate managers clearly and intimately had an understanding of the usefulness of the social exchange of knowledge through storytelling. The manager's minimal role here was to recognise the value of the time spent in this liminal work/social activity: for example by delaying the start time of team meetings '*because the technicians were telling each other stories about their most recent experiences*' (p. 140). The line manager had understood what the senior management hadn't: that support technicians tend to work with unique situations and that because of this '*it is the learning and not the knowledge that is the primary source of value… and it is the ability… to learn [that] becomes the source of power*' (Jacques, 2000, p.208).

The manager who chooses not to engage in a battle but rather who concedes autonomy to knowledge workers to use, share and hoard knowledge as they see fit, using the technological tools they choose (rather than have imposed upon them), may be the manager who frees up the flow of knowledge within the organisation. Such a manager may do so out of an implicit belief that there is a correlation between workforce engagement and productivity, and that problem-solving workers will be more engaged where they are free to practice their ability to negotiate new meanings through the inherently human, social and experiential process of learning (Collins *et al*, 2002).

Management might address this tension between the ceding of autonomy and the retention of control within a measurement-oriented system through pragmatism, acknowledging the value of both. An example of such compromise is the practice at Google where IT staff are authorised to spend 20% of their working time working on whatever they want (*The Economist*, 2011). This shifting of the balance from control to consent, encouraging responsible autonomy for highly skilled technicians in scarce supply, can be seen as a

management tactic to encourage worker engagement and, more cynically, to disguise the organisation's dependency on the workers. Noon and Blyton (1997, p. 149) argue this latter point thus: '*By emphasising autonomy, discretion and an absence of close supervision, they can engage in a more subtle attempt to obscure the exploitative nature of the labour process, and particularly the commodity status of labour.*' Google would appear to benefit from the apparent relinquishment of supervision, whilst retaining control through the management of cultural norms of behaviour, including the expected adherence to time measurement processes.

3 The Developmental Experiences of IT Service Support Workers: Expertise, Learning and Craftsmanship

The IT service *management* tension between ceding autonomy and asserting control is reflected in a similar IT service support *worker* tension. On the one hand workers might have the desire and instinct to spend most of their time working alone, learning their 'craft', developing their 'expertise' and deepening their theoretical and contextual knowledge. On the other they might be confronted by management techniques designed to encourage them to engage with others in sharing knowledge and learning from each other, often via ICT tools, such that the organisation can be more assured over its capability to evolve with minimal reliance on the knowledge/skills of specific individuals.

Whilst the concepts of expertise, learning and craftsmanship (as well as other concepts such as skill and creativity) clearly overlap in terms of how they are generally understood, this section has been subdivided in an attempt to apply focus to each of them in turn from an ITSM perspective. Prior to that, by way of context setting, the close relationship that ITSM 'best practice' has with the construct of the 'Learning Organisation' is discussed. This preliminary discussion once again raises the importance of autonomy as a key determinant in understanding the work of different types of IT service support worker.

ITSM and the Learning Organisation

A good part of the attention given over to the gathering of organisational knowledge within the business literature has been centred on the systems thinking construction of the 'learning organisation' (and associated with it, organisational learning). As discussed in Chapter 3, the systems thinking approach to ITSM practice tends towards undermining the individual, and thereby their political power, by an implicit strategy of distancing, depersonalising and dissembling workers into 'resources' and 'capabilities' and anonymising their personal contribution to organisational output. Such anonymisation is similarly apparent within the literature relating to organisational learning and the learning organisation which inspires much organisational practice (Harrison, 2002), and which might be seen to have influenced mainstream management practice in organisations even where there has been no formal adoption.

The concept of the learning organisation was introduced as a management tool by Peter Senge in his book *The Fifth Discipline* (1992) and rapidly achieved common usage in management theory and practice (Stewart, 1998). The learning organisation is conceived of as an ideal type of organisation which prospers through its capacity to learn effectively (Easterby-Smith and Lyles, 2003). Senge's 'Fifth Discipline' is 'systems thinking', imbuing it with a common currency with ITSM 'best practice'. His idea is that in a process of becoming a learning organisation (Wilson, 2004), workers are subjected to five disciplines. As well as '*developing people who learn to see as systems thinkers see*' (Senge, 1992, p. 367), workers are disciplined into buying into a shared vision by '*unearthing shared 'pictures of the future*'' (p.9), and committing to: developing *'personal mastery'*, which entails '*seeing reality objectively*' (p.7); '*team learning ... because teams, not individuals, are the fundamental unit in modern organisations*' (p.10); and being open to '*a shift of mind*' (p.160) so that their values, beliefs and attitudes are in tune with an organisational message pertaining to preferred values, beliefs and attitudes.

One implication is that the tangible human worker is diminished as it is the amorphous team and ultimately the organization and its values that are of importance. Another is that all workers should learn to act and speak predictably whilst continually improving the skills, technologies and processes used within their team in the cause of efficiency. In short, the concept of the learning organisation can be viewed as a totalitarian blueprint for the disciplining of the worker into 'being' as management would have them to be: their '*subconscious… 'trained"* (Senge, 1992, p. 365) and their thinking culturally altered to be more systematic as they strive for 'mastery' of their life '*in the service of [their] highest aspirations* '(p.8). The learning organisation is seen by Senge (1992) as being a management tool for organisational evolution and so his interest is not so much in the enlightenment of the worker but rather as he would have it '*the reciprocal commitment between individual and organisation*' (Senge, 1992, p.8). Reciprocity implies a political dance rather than political battle and Senge argues that the learning organisation is the antithesis of the traditional authoritarian controlling organisation (see Senge, 1992, p.5). It is instead typically conceptualised as empowering workers to work autonomously (Driver, 2002). However, this masks the subtle nature of power, control and authority imposed upon the worker in the typified learning organisation. Power is exercised over workers under an illusion of interpersonal traits of cooperation, collaboration, loyalty (Coopey, 1995), support and trust (Harrison, 2002). Their behaviours are theoretically controlled through the normative manipulation of the working culture such that '*it is the employee's self that is claimed in the name of corporate interest*' (Wilson, 2004, p.228). Seen in this light the control mechanism of the learning organisation is no better than the traditional control techniques alluded to by Senge (Akella, 2008) and masks a political agenda that management (or capital), rather than workers, is the perceived beneficiary of the presumed gains from adopting the principles of the learning organisation (Coopey, 1995, Harrison, 2002).

ITSM 'best practice', with its shared systems thinking roots, embraces the concept of the learning organisation with its emphasis on vision, ongoing service improvement and the manipulation of worker behaviour (Taylor, Case and Spalding, 2007, Taylor, Iqbal and Nieves, 2007, Johnson and Higgins,

2010). It emphasises the importance of vision and the management of the organisational culture: '*as you change employees' behaviour then over time this becomes the organisation's new culture*' (Taylor, Case and Spalding, 2007, p.160). Measurement is seen as being crucial to changing (and ensuring) worker behaviour. Amongst the Tayloristic advice provided to managers on how to ensure that workers behave as you would have them behave is the glib adage, '*you get what you inspect not what you expect*' (Taylor, Case and Spalding, 2007, p.161).

In the theory of organisational learning, it is at the organisational level (rather than the individual level) that errors are detected and corrected (Argyris, 1999) and this is akin to the purpose of the ITIL Continual Service Improvement (CSI) phase which holds that '*organisations learn to realize incremental and large-scale improvements in service quality*' (Taylor, Iqbal and Nieves, 2007, p. 9) and the problem management process which aims to identify the root causes of recurring incidents and help define process-related and service-related problems (Taylor, Case and Spalding, 2007). The worker, who necessarily does the actual learning on behalf of the organisation, making decisions on where improvements might be made, is excluded from any recognition of their contribution. Their invisibility means that they can expect no acknowledgement of the value that they bring through adhering to the CSI message. For example, the analysis of data generated within the ITIL V3 7-Step Improvement Process becomes a dehumanised organisational activity rather than an individual one. As such, in theory, there is no scope for discussion as to the skills and experiential-knowledge required of an individual who necessarily does the analysis. Similarly, since such analysis is theoretically performed anonymously there is little management incentive to praise, thank or otherwise reward or motivate an individual who has used personal expertise, based on a personal experiential-history, to perform the analysis.

With concern that such dehumanisation may have negative implications for worker engagement and thereby organisational performance, this study, in considering IT service support workers as 'knowledge workers', explores the extent to which knowledge/skills individuality, as opposed to homogeneity, might be important for organisational capability. In its advancement of tight

management control and continual striving for ever more efficient standard practices, ITSM 'best practice' implicitly rejects Drucker's (1993) argument that knowledge workers have to have autonomy. This leaves a tension. On the one hand are specific workers who, in line with social changes that have led to a '*growing sense of autonomy among individuals*' (Gratton and Ghoshal, 2003, p.2), wish to learn through unrestricted interaction with personally-selected specific other workers who have specific practice-based professional knowledge they lack. On the other hand are organisational structures and norms that place barriers in their way, restricting by emphasising time-based performance requirements and imposing 'functional silo' barriers to interpersonal communication. Rather than develop as they want to, there is an apparent risk that ITSM 'best practice' has the potential for stifling IT service support workers' respective abilities to develop broader and deeper knowledge (theoretical and contextual) through autonomous working. This might result in workers feeling constrained and frustrated with the slow pace of their personal/professional development or resigned to routinised work with little personal/professional development. Such feelings can be associated with alienation and disengagement and represent an instinctive sensitivity to the fragility of their capacity to economically support themselves and their families. As discussed in Chapter 3 and argued by Castells (1989), workers who are unable to acquire relevant knowledge/skills or do not invest in continuous learning risk exclusion from the labour force.

Given that IT service support work does not typically lend itself to communal working at the task level, and that the complexity of much IT service support work will often require concentration, reflection and study of the data relating to an incident, the opportunity to engage with a variety of 'stretching' work is key to the worker's learning and development. With autonomy restricted, the worker risks finding their opportunities to learn similarly restricted. This study explores the extent to which different types of IT service support worker feels restricted in this manner.

ITSM and Expertise

Organisational success is often seen as resulting from the exercise of specialist knowledge and competencies and the management of those specialisms, and as such expertise has become an important area of interest (Reich, 1992; Starbuck, 1992; Drucker, 1993; Blackler, 1995; Bou *et al*, 2006). IT service support technicians establish and build up knowledge and practical skills that enable them to fulfil their duties through experience. Through this experience the IT service support worker might be said to develop 'expertise' which, along with experience, derives from the Latin verb *experiri* meaning 'to try', the implication being that the accruing of expertise is about activity as opposed to passivity, i.e. about the experience of trying to reach a 'phantasized' outcome (see Chapter 2) rather than the accumulation of knowledge through a process of unthinking and inactive osmosis. Because it is founded upon activity, expertise, when related to IT service support work, might also be regarded as the application of theoretical knowledge within the IT service providing context.

As briefly discussed in Chapter 2, theoretical and contextual dimensions are clearly important when considering the knowledge used by the 'knowledge worker' (Frenkel *et al*, 1995; Thompson *et al*, 2000; Tam *et al*, 2002; Hislop, 2008). Following Abbott (1991), who associated theoretical knowledge with the knowledge that legitimised professional status, Thompson *et al* (2000, p.216) define the '*traditional knowledge worker* [as] *someone who has access to, learns and is qualified to practice a body of knowledge that is formal, complex and abstract*', further suggesting that such workers rely upon a theoretical, technical and explicit core of knowledge. They contrast this image of an 'expert' with the worker who works with *'[lesser value] knowledge that is contextual, social and tacit*' (p.216).

To illustrate the difference we might contrast a medical consultant, relying upon an 'expertise' bedrock of previously-learned theoretical knowledge of the human body and available treatments etc. which will largely be applicable in a variety of hospital settings, with their long-standing personal assistant/secretary who knows about the people and processes within the specific hospital. We

might agree that the secretary's knowledge might reasonably be considered to be of '*lesser value, significance or centrality to work'*, given that the hospital is in the business of treating patients and only the consultant is able to do this. But, whereas the consultant might be easily substitutable for another consultant carrying the qualifications that testify to their theoretical (medical) knowledge, a replacement secretary faces a significant challenge of acquiring the 'stock' of contextual knowledge acquired and dynamically updated and enhanced, typically through verbal, and specifically oral, experience over time by her predecessor. Thus, in considering and contrasting data collected from long-tenured but 'unqualified' IT service support workers, and short-tenured but professionally 'qualified' IT service support workers, the study necessarily gives consideration to the importance of contextual knowledge as well as technical knowledge.

Tam *et al* (2002) acknowledge the importance of contextual knowledge, arguing that the synthesis (or fusion) of theoretical and contextual knowledge is a key feature of knowledge work. Some IT service support workers will have a bedrock of theoretical knowledge – perhaps degrees in IT and/or proprietary qualifications, such as those awarded by Microsoft. As discussed in Chapter 3, such workers may have followed a career route founded upon their possession of formal generic IT qualifications, the knowledge from which they might synthesise with contextual knowledge as they move between organisations. These might be contrasted with other workers who have learnt their craft within an organisation through work-based experience and minimal training, and who are more likely to possess an abundance of organisationally-specific contextual knowledge/skills (Marks and Scholarios, 2006) that they synthesise with theoretical knowledge acquired over time. Whilst this contextual knowledge is valuable to the organisation, for it cannot be readily replaced in the labour market, it places the worker at a disadvantage should she find herself in the labour market herself (Crouch, 2006). Nonetheless, because their technical knowledge has been accumulated through activity (i.e. by 'trying') they might still be reasoned to have 'expertise' – it is just that that 'expertise' is highly contextualised and cannot be so easily objectified for management purposes of selecting for specific project roles.

Of course, having theoretical knowledge and using it in its raw form whilst engaged in productive activity are two different things. The complexity and inter-connectedness of IT systems means that theoretical knowledge must meld with contextual knowledge. As a concept, context is typically used without explanation with an holistic implication that in organisational use it might incorporate various intertwined environmental elements. These elements might be considered to be both external (e.g. economic, social, political) and internal (e.g. structural, cultural, political, technological) to the organisation (Pettigrew *et al*, 2001; Edmondson, 2002). When associated with knowledge, context relates to the situation or environment in which theoretical knowledge is applied. It might in this sense be said to mediate the application of theoretical knowledge.

Two examples of contextual elements are given to illuminate the breadth and importance of contextuality: technological and social. Contextual knowledge that is technological might include how a change to one part of the IT system is likely to impact on another part of the system. When, in 2011, RIM's Blackberry service suffered a major failure, the theoretical knowledge of IT service support workers tasked with resolving it will have been mediated by their historical knowledge of the 12-fold growth in users since 2007 and how the system had evolved to cope with that growth (Arthur and Garside, 2011; Bienfait, 2011). Given that length of tenure is important for the development of 'mastery' as opposed to just 'proficiency' (McKinlay, 2002), if RIM, following the neoliberal trends of flexible labour practices (Bradshaw *et al*, 2009), were reliant upon technicians whose theoretical knowledge was not mediated by this historical technological dimension, then their organisational capability to respond to such a critical incident swiftly, so as to minimise the negative commercial impact, would have inevitably been curtailed.

Contextual knowledge that is social might include who within the organisation is likely to be able to help resolve an incident. From just these two perspectives, we might see that, for IT service support workers, contextual knowledge is crucial if they are to succeed at completing their everyday tasks, and thereby it might be reasoned that context significantly contributes to 'expertise' when applied to IT service support work. If 'knowledge work' implies the use of 'expertise' then the suggestion is that, when applied to the IT service support

worker, contextual knowledge has an important part to play in the knowledge mix. However, if we are to acknowledge and engage with those who tend towards taking an exclusivist perspective on ‘knowledge work’, regarding the term as applicable only to an elite who predominantly use theoretical knowledge in a creative way, e.g. architects, then it is important to consider the different extents to which different types of IT service support worker use theoretical knowledge. Thus, whilst adopting an inclusivist stance towards knowledge work, this study considers the extent to which different types of IT service support worker use different mixes of theoretical and contextual knowledge, with a view to determining which of these types might be reasoned to most warrant the moniker 'knowledge worker'.

Since the interest of this research is on workers’ productive activity working at resolving specific incidents, the primary area of contextual interest is the task at hand. The worker’s context here will include the specific details of the incident including: the customer and their team/organisation; non-generic (i.e. organisationally-specific or bespoke) elements of the technology being supported and used; and information/knowledge available within the organisation.

Because of the typically more dynamic nature of contextual knowledge relating to the investigation and resolution of specific incidents vis-à-vis theoretical knowledge, one might reason that workers who work with a significant degree of contextual knowledge in the 'knowledge mix', will engage significantly in communicating with others, requiring them to make significant use of their sense of hearing (i.e. apply listening skills) to gather the contextual knowledge that they need. This reasoning correlates with the assumption that because Type 1 workers are typically the first point of contact for customers, they will use their sense of hearing significantly more in the working of incidents reported to them. This study captures data relating to sensory use to confirm this and consider the implications for management.

I now return more explicitly to the notion of expertise by reflecting upon the specific experience of listening to a German opera on the radio whilst writing. I have an awareness of it playing in the background but I am not actively

engaging with it and, not possessing any proficiency in the German language, I have no conscious idea of any storyline. My listening experience is peripheral and limited, and my expertise as regards German opera remains negligible. Should I desire to become 'an expert' of German opera I should need to, over an extended period, actively *try* to become proficient in the German language and then, again over an extended period, obsessively and actively study German operas. Should I then desire to compose an opera using German lyrics, I should need to, over another extended period, actively *try* to do so. Similarly, to become an expert at IT service support work within a contextual setting requires active trying (*experiri*). It is not enough to passively receive information about the work and this is particularly so when the work is objectively complex. It is through trying that IT service support workers build up their 'stocks of knowledge', comprising interwoven, rather than separate, theoretical and contextual elements (Hislop, 2008), and might learn what does not work as much as what does. Just as the process of becoming a chess grandmaster is '*a process of acquiring a vocabulary of patterns*' (Burns, 2004, p.442), so the feedback IT service support workers get from working on incidents is key to their development of personal capacities to draw upon complex patterns of thought.

These complex patterns are related to typified patterns such that a specific pattern might be related to a similar but different pattern from previous experience, subconsciously or consciously noting not only the presence of similarity but also the absence of similarity (McKinlay, 2002; Gladwell, 2006). As Dreyfus and Dreyfus (1986, p.10) note: '*hunches and intuitions, and even systemic illusions, are the very core of expert decision-making*'. Specifically within the field of IS work, Feeny and Willcocks (1997, p.467) note that: '*a lengthy immersion in IS enables the individual to build mental models which capture the fundamentals and provide a lasting base from which to interpret new developments*'. The use of the word 'individual' is key here as it highlights the uniqueness of workers' experiences and therefore the uniqueness of each IT service support worker. Through having similar experiences (i.e. by working on similar tasks like the photocopier engineers that Orr studied) workers might establish a degree of commonality within their shared organisational and

occupational 'life-world'. They might be said to develop a '*common sense*', as defined by Sosa (2009, p.60) as '*that degree of judgment which is common to all men with whom we can converse and transact business*.' But, whilst two workers may both be said to know something, they will know differently, in terms of depth of understanding and relevancies to other knowledge (Hamlyn, 1983). The process of specific worker immersion leads to an expertise that is in part unique and dynamic (i.e. in that new learning occurs and previously learned skills deteriorate) and in part is common with other workers. By stressing the importance of worker judgment-difference, this perspective implicitly challenges the management perspective whereby worker judgment-commonality is presumed, thereby facilitating worker anonymity and inter-changeability.

Stinchcombe (1990) emphasises that higher-level skills are required where the task before the worker is particularly uncertain and complex. It is at this point that the worker needs to draw upon her creativity, in the sense of the OED (2010) definition of creativity as the ability to produce something from nothing. Where there is a high degree of task uncertainty, skill needs to be supplanted with creativity. As Frenkel *et al* (1999, p.64) put it: '*where work is heuristic (open-ended), the worker must improvise, using and creating knowledge*'. Thus, work tasks that are familiar and defined within a process might be regarded as demanding little in the way of worker creativity, whereas work tasks that are less frequently encountered and cannot be readily handled by the worker (i.e. are intensely complex and problematic by nature) might be regarded as demanding of the worker's creative problem-solving abilities. In being creative, the worker will though draw upon learned practical skill and in the process 'learn' a new pattern that they might recognise in the future. Dreyfus and Dreyfus (1986), draw upon Merleau-Ponty's emphasis on the human capacity to develop flexible styles of behaviour to give the example of a driver who is able to create new personal knowledge/skill of how to use a gear stick on the floor of their car by using their already existing knowledge/skill of using a gear stick on the steering column even though the procedural rules describing the sequence of movements would differ. As has been discussed in Chapter 2 this research is concerned with such creativity in the deployment of skills.

The connection has been made between experience and expertise that comprises an in-depth specialised knowledge built up through years of training and experiential learning (Nguyen, 2006). The acquisition of this expert specialised knowledge is, according to phenomenological sociologists, said to occur during a process of secondary socialisation, or institutionalisation enabling 'insider' activity and multi-sensorial engagement within specific institutional subsystems (Berger and Luckmann, 1966, Luckmann, 1983, Huysman, 2004). The importance to organisational success of knowledge built up during the process of secondary socialisation is often overlooked, particularly when revolutionary rather than evolutionary management strategies are adopted through business process restructuring and re-organisation projects (Hull, 2000, Sennett, 2006). Suddenly, taken for granted knowledge is removed from core functions and unforeseen negative consequences (in terms of organisational performance) result (Future Foundation, 2010).

ITSM and Learning

If the work is, subjectively to the worker, of a routine and unchallenging nature, experiential learning that contributes to the accumulation of expertise may be negligible, whereas if the work is subjectively complex and problematic then learning may be considerable. In effect, the knowledge worker starts to be conceived of alternatively as a 'learning worker' whose learning is typically evolutionary as they encounter new tasks similar to previously encountered tasks. As was discussed in Chapter 3, IT service support workers typically ply their trade in environments of accelerating change and technological evolution (Dutta and Mia, 2011). New, more efficient or attractive products (applications, hardware, programming languages, operating systems etc.) are developed and adopted within organisations. IT service support practices necessarily evolve to enable the support of these products. To 'survive' these changes, the worker has to learn according to the nature of the change thus 'morphing' to the necessary level of capability to support the new technology. The process by which this 'morphing' takes place is informed by Antonacopoulou's (1999)

theorising that there are two forms of knowing: *'learning by knowing the same*' and '*learning by knowing differently*'. The former supports stability, and through it the maintenance of existing power, as learning is built upon existing knowledge. The latter supports change by encouraging a process of letting go and creating new, more effective, knowledge, and thus threatens the power of acquired expertness. As was discussed in Chapter 3 IT service support workers need to *'slide and morph'* to maintain mastery within their profession (Gratton, 2011a). In '*learning by knowing the same'* the worker develops their expertness within an existing area of individual specialism. Where they have to *'learn by knowing differently'* they may simultaneously be *'sliding'* away from using knowledge/skills that may have served them well in the past but which may have become obsolete, and '*morphing*' towards the development of knowledge/skills in a new area of individual specialism.

By way of illustrating the grey area between Antonacopoulou's (1999) two forms of knowing, Table 4.1 gives examples of the learning/adaptation that might be required by an IT service support worker when confronted with different technological changes.

ITSM and Craftsmanship

Returning to my lack of expertise of German opera, it is highly unlikely that I shall ever become an expert in this specialised field simply because I am not interested enough and do not associate it with my identity. As Jeremy Bentham (1776, p. 193) wrote: '*Experience…is the Mother of Wisdom... Interest is the Father*'. The suggestion is that motivation and a sense of professional identity are important and integral parts of becoming an occupational expert.

IT Service Support Change Example	'Slide and Morph' Requirement (Gratton, 2011a)	Dominant 'Form of Knowing' (Antonacopoulou, 1999)
The organisation's desktop computers are upgraded from Microsoft Windows Vista to Windows 7	The desktop support worker is able to use her acquired knowledge of Windows Vista as the basis for learning the subtle differences between Vista and Windows 7	'Learning by Knowing the Same'
The organisation is adopting a 'Cloud Computing' model for network access	The network support engineer is able build upon her knowledge of networking as she learns about how the adoption of Cloud Computing affects her support role	No dominant form (Combination of 'Learning by Knowing the Same' Learning by Knowing Differently)
The organisation rewrites its in-house applications, previously written in COBOL, in Python code	The application support technician needs to discard much of her COBOL programming knowledge, and draw upon her innate personal attributes (e.g. logical thinking) that influenced her towards a programming role initially, so that she might learn to understand Python code as well as she understood COBOL	'Learning by Knowing Differently'

Table 4.1: Examples of 'slide and morph' technological learning requirements for IT service support workers

For high achievers in a specialist field personal motivation and a sense of identity manifests itself in an obsessive approach to the specialism (Gladwell, 2009). Obsessiveness is essentially a personal rather than organisational trait. Obsessive people accord a high degree of their identity to the subject of their obsession and willingly choose to spend time on it, typically developing their expertise in a craftsmanlike fashion over a long period of time. An example of such obsession was recounted in a BBC radio documentary about a type of

worker which has an ancestral link to the modern-day IT service support worker. This documentary, titled: '*The Wireless World of Gerry Wells'* (2010), started with the introduction: '*This is a portrait of a craftsman with an obsession for radio'.* It told the story of a technician, Gerry Wells, who had spent his 80 year life '*making and repairing wireless sets*… [having been] *completely obsessed with all things electrical since the day he was born* '. During the programme, in his workshop working at repairing an old wireless set, Wells was asked what he was doing. He responded:

> *Listening and diagnosing. For a start there's quite a layer of dust which I'll blow out. Most of the trouble is down to what you call Hunt's condensers. A.H. Hunt Limited manufactured condensers, the cheapest, nastiest condensers on the market. Every manufacturer used them because they were at least halfpenny a dozen cheaper than anybody else.*

The documentary is full of similar evidence of Wells' obsessive historically-referenced specialist expertise as a technician, built up slowly over time. At one point in the documentary he is referred to as '*a guru who teaches his craft to disciples*', and at the end of the programme he talks about his career:

> *It's not everybody like myself who are doing work for a living that they like… Whilst I was still at school I was told quite severely that we can't do for a job the things we like doing… It's all been fun, it's been a laugh. I don't intend to retire. I'll die in the saddle so to speak.*

In dichotomous contrast to Wells, technicians who, having contracted their time to an organisation, have their autonomy restricted and are compelled by an authority figure to spend hours-upon-hours engaged in prescribed activity are not obsessed but oppressed. In crude terms they might be characterised as preferring to spend their time doing something else but must instead grind out their workload so as to produce acceptable statistics to satisfy management. In psychological terms they might be said to develop to a point of '*arrested*

development' where their performance reaches a '*level of automaticity and effortless execution'* (Ericsson, 2008, p.991)

The individual expertise of the obsessives are achieved through autonomous work activity, perhaps drawing upon support as needed (e.g. from colleagues with different experiential histories). Through experience, they become ever more self-reliant, increasingly able to handle greater complexity, and they develop an ability to be increasingly innovative. They do this, according to Ericsson (2008, p.991), by seeking out developmental opportunities so that they can '*increase speed, accuracy, and control over their actions [and] exceed their current level of reliable performance*'. This contrasts with an expertise achieved through hours of working under the constraints of management control including imposed restrictive processes such as a requirement to escalate incidents to specialised teams. Thus the idealised 'obsessed worker' develops expertise over time by asserting personal control, in contrast to the idealised 'oppressed worker' who develops competence to a level of management-controlled pragmatic automaticity.

The contrast between the obsessive and the oppressed echoes the differentiation made by Sennett (2009, p.45-46) between the absolutist and the practitioner:

> *to the absolutist ... each imperfection is a failure; to the practitioner, obsession with perfection seems a prescription for failure.*

ITSM 'best practice' is functionally minded in that it advocates that service levels be agreed with customers with one of the purposes being to ensure that '*IT ... have a clear and unambiguous expectation of the level of service to be delivered*' (Taylor, Lloyd and Rudd, 2007, p.65). To deliver a service level above that agreed is regarded as being wasteful of resources. Further, the prevailing neoliberal management trend for flexible working practices (Bradshaw *et al*, 2009) discourages long-term employment relationships on the implicit understanding that the short-term benefits to be gained (e.g. cost minimisation) outweigh any longer-term considerations. ITSM 'best practice' implies an ideological position of workers as anonymised, interchangeable and

readily available functional practitioners: assets to be bought in the labour marketplace for specific time-bound projects and discarded when no longer required. This rational management mind-set descends from Adam Smith's (1776) observation of the 18 steps to pin manufacture and culminates in '*hyperspecialisation*' of IT work where, facilitated by technology, the organisation avoids paying for the '*myriad peripheral activities that could be done better or more cheaply by others*' (Malone *et al*, 2011, p. 59). In adopting this standpoint there becomes no logical economic reason to give credence to concerns about the loss of experience or to commit financial resources to the development of staff. Learning becomes something that is sanctioned by organisations to meet specific measurable objectives (e.g. Newall, 2001) rather than out of a management judgment that, for the organisation to survive and thrive into the longer-term, risk might be minimised by maintaining and developing a 'professional' workforce. The functional mind-set is thus a product of short-term 'situational' values (Seidman, 2007, Gratton, 2011c). Decisions are made based on the calculation of what immediate benefits ensue from a short-term opportunity. Lying behind these values is (i) a need to assert management control over the worker, to undermine any 'absolutist' leanings they might have; and (ii) the belief that the shorter the term, the greater the capability to control. Thus, this short-termism stands in conflict to the aspirations of absolutist IT service support workers who, exercising personal 'sustainable' rather than 'situational' values, might want to hone their crafts as IS professionals on an on-going basis over an extended period of time. Drawing upon this, this study analyses the extent to which IT service support workers are 'obsessive' and 'absolutist' about their work, setting themselves high quality standards, thus asserting their credentials as craftsmen/women.

Sennett (2006) advocates a broadening of the traditional use of the term 'craftsmanship' to embrace what he calls 'mental craftsmanship'. Craftsmanship to him is simply '*doing something well for its own sake*' (Sennett, 2006, p. 104). For example, the 'craftsman' IT service support worker might want to delve deeper into the issue at hand so that they might better understand the application, hardware item etc. before them. This might be contrasted with the 'functionally minded practitioner' who might be more likely to take their lead

from metrically-driven management directives. Such encouragement of functionality and discouragement of craftsmanship that is implicit in ITSM 'best practice' might be seen to constrain the worker and repress the development of expertise and creativity that the organisation might benefit from.

The absolutist craftsmanship approach to work expands the formal problem-solving remit of the IT service support worker to involve problem-finding (Sennett, 2009). It is this relationship between active problem-finding and problem-solving that distinguishes the IT service support craftsmen/women from the IT service support practitioner who passively accepts an incident identified by another person (typically the customer) and then resolves it before moving on to the next incident without giving consideration to any underlying issues or the root cause of the incident. If such 'practitioners' receive a wide variety of types of incidents to resolve they may develop functional expertise, but if they don't then they will operate in their work from a mind-set of routine roboticism, playing to the tune of management rationalisation techniques, with work becoming dull and meaningless (Malone *et al*, 2011). They will effectively be like the feeble workers stagnating in their development and declining in intelligence that Marx (1844b) wrote about. By contrast workers who take it upon themselves to work beyond the constraints of the sanctioned routine, spending more time investigating an incident than absolutely necessary, and seeking out system faults that have not been reported, implicitly resist the bureaucratic power imposed upon them. Their reward for this is that they are likely to develop their knowledge through richer learning experiences.

Given Bird's (1996) re-conceptualisation of a career as '*the information and knowledge acquired as a result of an evolving sequence of work experiences*' (Bird, 1996, p.150 adapting Arthur *et al* 1989), the practitioner-mind-set bias of ITSM 'best practice' might thus be said to hinder the careers of IS professionals participating in IT service support work. And it might be said that it is only through the conscious resistance to this bias that IT service support workers might optimally develop their careers as IS professionals.

This conflict between a management pursuit of worker practitionership and a worker's pursuit of craftsmanship is pertinent to the question of defining the

knowledge worker. From an IT service *management* perspective (reflecting mainstream contemporary management thinking) the ideal knowledge worker is the anonymised practitioner fulfilling the management-sanctioned organisational requirements of the moment. This differs from the perspective of individual 'real world' human workers who, seeking from their work both meaning and currency to their employability, may continuously aspire to become better (on their terms) at their 'craft'. In effect such management practice seeks to 'position' and control different anonymised and functional 'knowledge workers' in specific defined roles at specific points along a continuum (as per the Skills Framework for the Information Age discussed in Chapter 3). The exploratory work and thus developmental stance of the absolutist 'knowledge worker' is implicitly discouraged because it resists control. Thus, the likelihood is that the most knowledgeable of the knowledge workers are implicitly ***not*** the ideal knowledge workers from the perspective of ITSM 'best practice'. Such thinking is in line with the assertion made by Frenkel *et al* (1999, p. 67 footnote) that '*knowledge workers are employed in organisations whose prime aim is profit-making rather than professional excellence*'. This alludes to a conception of knowledge workers as being functional practitioners controlled by quantitative management objectives rather than absolutist craftsmen/women guided by qualitative aspirations.

This study considers the extent to which the different types of IT service support worker: confine their development to that that ensues from resolving incidents pragmatically for short-term organisational efficiency benefits; and/or work outside of the managerial expectations, developing their expertise towards 'master' craftsman status.

4 Data Presentation: Dimensions primarily associated with 'The IT Service Support Worker as Knowledge Worker'

In this section observational and interview data is presented to build a picture of the typical IT service support worker as considered in relation to the

preceding discussion of knowledge work, incorporating the debates on autonomy, expertise, craftsmanship etc.

Before considering these matters, we pause to consider the data that were collected relating to the educational level of workers, since an exclusivist conception of the knowledge worker associates it with an educated elite (as previously discussed in this chapter). In line with Drucker's (1957) early conception of 'future' knowledge work being associated with the Western world's production of an educated society, it is of interest to note that most of the IT service support workers that were interviewed were educated to a level that implied that they had remained in formal education into their early adulthood, typically to study for degrees. Appendix E shows the educational level assigned to each of the interviewed workers. An overview of this is shown at Table 4.2.

Worker Type	Number of Workers Interviewed		Number of Workers at NQF/QCF/FHEQ Levels[6]						Average Level
		Level →	L2	L3	L4	L5	L6	L7	
		UK Academic Equivalent →	GCSE	A' Level	HNC	HND	Degree	Post-graduate	
1	9		4	1	-	1	3	-	3.78
2	8		1	2	-	-	5	-	4.75
3	7		2	-	-	-	4	1	5
All	**24**		**7**	**3**	**-**	**1**	**12**	**1**	**4.46**

Table 4.2: Overview of Interviewee Education Levels

The key findings relating to the education levels of IT service support workers are:

[6] Educational levels were assigned to each of the interviewed workers. These levels were taken from three different frameworks which broadly correspond (Directgov, 2011): the NQF (National Qualifications Framework), the QCF (Qualifications and Credit Framework) and the FHEQ (Framework for Higher Education Qualifications).

i. Within the UK context, entry into IT service support work is presently competitive, requiring a proven ability to study for respected formal qualifications, though not necessarily in IT.
ii. Younger Type 1 workers tend to be well-educated whereas older Type 1 workers tend to have not continued their education after completing their compulsory school education.
iii. In general Types 2 and 3 workers tend to be better educated than Type 1 workers, with two thirds of them having been formally educated to at least degree level.

Having paused to consider the education levels of IT service support workers, this section continues by giving consideration to workers' perceptions of the autonomy accorded to them in their work, thus enabling a contribution to be made to the discussion on autonomy, organisational power and control. This is then followed by presenting data that enlightens an understanding of IT service support work as a developmental experience, thus building upon the previous discussion in which the concepts of learning, expertise, craftsmanship, creativity and skill were considered. To retain focus on key findings, most of the analytical details are consigned to appendices, which are referred to as appropriate. The observational data reported in this section builds to an interpretative presentation of the different experiences (as observed) of IT service support workers in different teams of different types (i.e. 1, 2 and 3) using the 'Tool for the Analysis of IT Service Support Work as Knowledge Work' that was introduced in Chapter 2 (Figure 2.6). This observational data is supported by interview data to present a rich presentation of the IT service support worker as a modern-day manifestation of a 'knowledge worker'.

Autonomy and Control

Previously in this chapter, the political setting in which IT service support workers' 'do' their work, was discussed, and a management tension was identified between empowering workers and exerting control over them. Central to this tension is the autonomy accorded to workers and/or asserted by workers.

Given Drucker's (1999) assertion that '*knowledge workers… have to have autonomy'*, this is important in terms of understanding IT service support workers as knowledge workers. Here, data is presented to provide evidence of how the three identified types of IT service support worker act with autonomy. The overall picture is one of autonomy being restricted by time pressures, particularly for Type 1 workers, and by lack of control over the incoming workload. Because IT service support work is implicitly reactive, in that the primary trigger for a task is a customer reporting a service incident or making a service request, workers are socially conditioned (e.g. via management imposition of bureaucratic devices such as the 'Service Level Agreement') to comply with the management and customer expectation that they will carry out the necessary work. However, having taken on specific tasks, workers, particularly Types 2 and 3, are generally free to explore as they see fit, 'feeling' their 'own' way and choosing specific actions as they 'phantasise' and then realise a series of individual 'projects' (as discussed in Chapter 2).

Type 1 Workers

Type 1 work was typically found to be deskbound and highly bureaucratised. This restricted the autonomy of workers in terms of how they went about logging and escalating or resolving incidents. However, workers were able to act autonomously outside of the bureaucratised work processes, engaging in social dialogue with colleagues and occasionally other deskbound activities. The extent of autonomy displayed across the research population of Type 1 workers can be seen to reflect the intensity of their respective workloads

Given the typical intensity of service desk work, Type 1 workers had minimal autonomy over their highly bureaucratised work that came as a constant stream of incoming phone calls and e-mails that needed to be dealt with swiftly according to a predetermined process.

When asked how autonomously he worked, Asghar (STOS) interpreted the question in terms that suggested he had been influenced by the ITSM 'best

practice' narrative, equating working autonomously with taking ownership of incidents.

> *If I was to get a call I would definitely take full ownership of it and obviously give my details… to the users…, escalating it if need be, always making sure I've got updates… and keeping the user informed.*

It is as though for Asghar it was not conceivable to relate 'autonomy' to personal freedom to make choices over time. Instead here he was talking about being in the grip of the Incident Management process as laid out for him.

The workers on the UKHEE IT service desk similarly reported having bureaucratised restrictions upon their autonomy, which, as discussed in Chapter 3, was reflected in their status. Jonathan (UKHS) spoke of being frustrated by these restrictions:

> *In my head I've got a lot of technical knowledge and a lot of ability to do stuff but just not having the tools and rights and access to do them … it's very frustrating because… the job satisfaction… goes down.*

Similarly his colleague Navinda (UKHS) intimated a similar frustration. When asked what gave her displeasure at work she laughed before bemoaning their lack of opportunity to work as autonomously as she perceived those on the second-line did.

> *I think for me it's being controlled… not being able to just go up and do things… you have to go through this hierarchy to get permission.*

The control exerted over the workers on the main SCC Corporate IT Services Service Desk was similarly subtle. The team leader sat on a separate desk directly facing the main service desk, thus enabling her to enact continual surreptitious surveillance of their behaviour. These workers, typical of the observed Type 1 workers, were noticeably subjected to the rationalising techniques of ITSM 'best practice' which was being enthusiastically

implemented across the IT Division. They were required to wear headsets when at their desks and were expected to react promptly to incoming phone calls on a rota basis as they became free after disconnecting from a previous call. They were subjected to on-going performance measurements captured technologically, ostensibly to assist in management decision-making, but, through presentation to the workers in team meetings, carrying a clear message to the workers that their performance was being measured through technological surveillance. During one observation of these workers, they engaged in a conversation in which they expressed their awareness of management power being asserted against them and their resulting discomfort. With a background context of an organisational redundancy programme in the process of being implemented, management had also announced a change from flexible daytime working hours to a shift working arrangement. The service desk workers discussed this at length as a group – in the hearing range of their line manager - in between answering calls:

> Tony (SCCS): *When I came here one of the reasons I gave is that I wanted to spend more time at home than at work.*
>
> Karl (SCCS): *I told him that I wouldn't stay here until 6.30.*
>
> Nick (SCCS): *I mean if you get requests after 5 o'clock they are not going to be urgent anyway.*

In these words they can be seen to be expressing anxieties related to the changes faced by the organisation and faced by them. They might here be seeking – in the face of a management assertion of power - to comfort each other with compatible expressions of a desire to assert individual power in their working lives: the power to decide to work shorter hours, to not work late and to define rules for working late, whilst being painfully aware of their political weakness.

Additionally, they expressed what autonomy they did have over their working time and space by ensuring that they were not totally dedicated to work. They had stuck up on the wall behind them a large wallchart on which

they recorded the results of the football tournament that was taking place at the time of observations. This tournament was regularly discussed during the working day along with other non-work topics. Although they wore headsets when taking calls, unlike their peers at Stoneworks, they all generally took these off when not talking with a 'customer' and only put them on in response to the electronic notification that they needed to take a call. At times it was also observable that the workers did not always promptly disconnect from calls thus making them unavailable to receive future calls. This practice was explained to me by one of the second-level workers as a technique that enabled the workers to work on an incident without being disturbed. The technique also enabled them to maintain group conversations but there was an apparent undercurrent present:

> Tony (to Nick): *I've been on the phones all afternoon for you… You don't do any work. Did I say that out loud!*

It might be argued that this icy wit reveals a form of Foucauldian surveillance over each other as Tony attempts to 'train' Nick to do his fair share of the work.

Working across the room from this main service desk, Kate and Judy, whose roles were more specific, being to deal with user requests for access to different systems, were not watched over by the line manager in the same way as their colleagues and saw themselves as an autonomous entity, relying upon each other, rather than autonomous individuals. The line manager took a hands-off approach, pretty much leaving them to get on with the work without taking an interest in it. In interview I asked how supportive their line manager was and they both laughed before Kate answered for them.

> *I don't really have many dealings with her; because, quite rightly, we are left to our own devices as regards the workload.*

The impression left by Judy and Kate was that they liked being accorded autonomy by management and yet simultaneously disliked being marginalised within the office.

> Kate: *There is no communication from them… Judy wanted to drop her working hours and the only time she found anything out was when she herself had to keep on going to ask the manager. They never came to her…*
>
> Judy*: No they never came back to me.*
>
> Kate: *They never called her in for a meeting or says 'Can I give you an update. You know, we can't do it at the moment'.*

Judy and Kate resented the lack of proactive people management. They wanted autonomy in relation to *doing* work but wanted their management to take greater control when it came to their *being at* work.

Across the city, SCC workers on the Education Service IT service desk, in line with other service desk workers, had their autonomy restricted by the bureaucratic process that fed them a stream of tasks that were not of their choosing. Here, the workers reported how they found autonomy within this controlled situation.

> Adam (SCES): *I do have the power to pick and choose what I want to do. More often than not there will be certain areas that I will think '**Yeah I'll take that because I'm more comfortable doing that**'… We are just allowed to get on with it.*

The final phrase could be seen as defining autonomy, as advocated by Drucker (1993) for knowledge workers, but it fails to indicate that the workload had been defined for him or to uncover the presence of forces of surveillance and organisation that kept him on his seat at his workstation and for the most part engaged in prescribed work activity.

As evidence of this tension between autonomy and surveillance, it was observed that Adam felt comfortable in occasionally accessing the Internet to watch live streaming of a football match. He was though conscious of a conflict between his desire to follow this match and the expectation that he 'did his job'.

Although his manager was generally looking towards the wall and took little interest in looking at the workers' screens, Adam, in the manner of the Panoptican as suggested by Foucault (1975), self-regulated his behaviour. It was noticed from across the room that Adam was brazen enough to somewhat covertly keep a check on the football from time to time but not brazen enough to watch it constantly or openly. Without being explicitly told to, Adam minimised his viewing of the football to reduce the risk of being 'caught' doing so and facing a sub-consciously imagined sanction.

Type 2 Workers

The observed Type 2 work, in comparison with Type 1 work, tended to offer greater autonomy, albeit those workers remained constrained by the pressures of time and predefined bureaucratic processes. As a set of workers they took phone calls significantly less often than the first line workers and when they did use the phone it was typically to make outgoing calls to acquire information to assist them in resolving an incident. Whilst they typically had some degree of choice over what they worked on, they were typically fully engaged in their core activity of investigating and resolving incidents assigned to their team via a WFMS by a Type 1 worker, rather than any peripheral activities that might be of interest to them but of limited corporate value.

Interestingly, when asked how autonomously they worked there was a broad range of answers from '*we don't work autonomously at all*' [Tom (SCCD)] through '*fairly so*' [Charles (STOD)] and '*pretty autonomously*' [Roger (SCCS)] to 'very' [Stephen (SCCD)]. Given especially that Tom and Stephen were colleagues who worked from the same 'to do' list and spent about half their time visiting 'customers', there was an apparent dissonance in terms of their interpretation of the question. Stephen (SCCD) expanded upon his assertion that he worked very autonomously:

> *We each pick up incidents… [and] just get on and do it with very little interaction with colleagues with most incidents.*

He was aware though of time pressures strongly impacting upon his ability to act as he would prefer:

> *You can get an interesting problem and you can almost see… what the problem is going to be but the time to get from starting point to resolution is going to be too long so you think '**okay… just put that on the back burner and … get it resolved and… back to the customer**'.*

Tom's (SCCD) contrary assertion prompted a group discussion with Harry and Dick (SCCD) and it was agreed that as a team they were able to act with autonomy, but not as individuals. However, later in the interview, Harry, the team leader suggested the workers were accorded significant autonomy:

> *We haven't got people looking over our shoulders all the time and analysing what we do. As a team leader… I don't want to micromanage… I like to be able to trust them… to go out on their own bat and do what is there.*

Charles (STOD) was conscious of the freedom accorded him by his manager to make decisions as to what to work on and how, but equally aware that this management power to authorise autonomy was a constant presence, as was the urgency of customer requirements. Thus his autonomy was at all times implicitly dependent upon both management and customers. If they explicitly intervened he was likely to act according to their agendas. And if they did not explicitly intervene he might act with greater discretion whilst being aware there were implicit management and customer expectations as to his level of performance:

> *I would probably say 95% of the time I'm making my own decision of what I'm doing at any one time… Karen* [his line manager] *thinks as long as you are doing your job and you get it done it's entirely up to you what you do…*

> *What I decide and how important something is is up to me unless there really is something urgent that comes up.*

However at another point in the interview Charles revealed his frustration at being controlled by the forces of management and customer power, restricting his autonomy in the workplace:

> *I would love to… do my own to-do list and think '**right this is what is most important; this can go on the backburner'**, but… it's more of a fire-fighting exercise of who's shouting the loudest … The boss is likely to be being chased by someone but it's more likely that the user will ring up to chase something … If you get someone who pops into the office… that is going to change your priority. Or if somebody who is categorised as a VIP rings up then you've got to respond to that.*

Roger (SCCS) similarly highlighted the importance of the customers as determinants of workload, restricting the options available to Type 2 workers as regards what they chose to work on:

> *We have to do whatever … comes through on the phones so we don't get to choose what we do… but in terms of fixing that … we've got a pretty free rein on what we can do.*

Gareth (SCES) interpreted working autonomously as being concerned with technological power: '*you have got systems that first-level can't use and you can merrily go onto machines that others can't*.' This, coupled with Jonathan and Navinda's (UKHS) frustration at their lack of technological power as Type 1 workers (as reported previously), suggests that for a technician desirous of skills development in pursuit of craftsmanship, having the administrator rights to engage with technology without restrictions may be an important factor in terms of enabling autonomy.

Type 2 workers' interpretations of autonomy variously incorporate, to different degrees, notions of teamwork, bureaucracy, technology and time

pressures emanating from managerial control and customer expectations. They do though appear to have greater autonomy than Type 1 workers, most notably because their minute-by-minute activity is not controlled by the immediacy and regularity of in-coming telephone calls. Further, Type 2 workers appear to have greater control over their time on account of organisational reliance upon their technological expertise, and because their role typically involves greater mobility and variability in terms of what incidents they might be called upon to resolve, and the resources, especially time, they may require.

Type 3 Workers

The extent of autonomy accorded to Type 3 technicians at Server Control and Poyet in one respect reflected the physical space in which they were able to work. Autonomy of movement was greater at Poyet than Server Control, in that the work of the technicians necessitated them in moving between their desks on the first floor and the server room and other largely vacant desk space on the ground floor. Both workers, but John in particular, often moved downstairs to work in a dedicated manner on a particular task in isolation thus reducing the extent to which he was interrupted with requests for 'service' from 'his' internal and external customers. Both Mike and John concurred that for the most part they were accorded a high degree of autonomy over their work, and over their respective work spaces; and in operational terms they were managed very lightly by the Support Team manager and CTO[7]. For John, who referred to himself in interview as '*an outsider'*, being left to his own devices was seen as being largely positive, providing him with sanctuary from office politics.

> *Luckily for me I'm on my own as a department… so the job in its own right is completely autonomous… in the sense that I choose what I do every day.*

[7] Reference: journal notes from meeting with CTO and Support Team manager at end of data collection period

His one bugbear, which impinged upon his autonomy, was being required to attend what he saw as being unproductive meetings: *'There's too many meetings to discuss rather than to actually do'.* John's antipathy for meetings was illustrated when, during an observation, he was interrupted by Paula, who reminded him that he needed to be in a meeting. John asked Paula, as his supervisor, what was more important and was told that at the moment the meeting was. Paula at this point left to attend the meeting. John said nothing but continued to work on the technical matter at hand for the next twenty minutes, choosing that over attending the meeting.

For Mike on the other hand working alone most of the time was a source of distress. During the interview, unprompted, he repeatedly complained of being left to his own devices:

> *From a support point of view, I unfortunately feel very much on my own… it's a bit naff really* (audible sigh)*... I have nobody to talk to about cases and things… I probably work the most autonomously in the entire... business… I think people just leave me to get on with it.*

The autonomy accorded to Mike and John extended to them being blasé about the bureaucratic processes underpinning their work; specifically, they were both very flexible about the recording of incidents. Indeed, contrary to the management espoused interest in practicing ITSM 'best practice', the organisational culture appeared to be such that the raising of incidents informally was tolerated resulting in the work practice being rather chaotic. This unruly culture at Poyet enabled colleagues (as internal 'customers') to have an expectation that the support workers would attend to their matter immediately. Whilst at face value, Mike and John's somewhat dismissive attitude towards the processes can be seen as an assertion of their autonomy, it nonetheless appeared to have a negative effect on the autonomy they actually enjoyed, since the resulting increased intensity of the work led to them having to constantly juggle matters that demanded their attention in the present. They were constantly at risk of working reactively thus reducing the percentage of their working day they were able to work proactively.

The working environment at Server Control was more tightly controlled with Nigel the overseer of the processes that controlled productivity. He saw it as his role to ensure that the technicians were prioritising the incidents that he thought they should be. He was particularly concerned about workers who '*will grab the problem that's interesting or he's worked on already',* and saw his role as one of *'making sure that they are all doing the right thing, approaching the problem that matters and forget the background jobs or whatever.'* This watching of what the workers were engaged in at any moment in time could be seen to reflect Foucault's (1975) image of a carceral setting in which movement and communication were highly restricted and workers had an awareness of surveillance. The seating arrangements in the small office space at Server Control and the imposition of a norm of silence so that any conversations might be listened to by management added to the carceral environment such that workers self-managed their behaviours to conform with managerial expectations.

Server Control management made use of technology to covertly assert power over workers. In discussion about the Instant Messaging application used within the office Nigel admitted that '*I kind of need to keep an eye on what is happening'*, revealing how he and the Managing Director, Craig, used the application as a surveillance tool:

> *Occasionally if there's private stuff you want to talk between two people, as in '**Can you hear what's going on with that call?'** type of thing, you can do it subtly that way.*

Spatially, the workers had little option other than to sit at their desks, and clearly this was the expectation. There were simply very few places to go to. The server room was rarely visited; the kitchen was infrequently used and when it was, was only used for drinks preparation which was done efficiently by one worker making the drinks for all the team, thus having the effect of further limiting spatial autonomy.

When asked about autonomy though, the technicians at Server Control perceived it to be a question only about the content of their work and

consistently opined that they had high levels of autonomy whilst having access to the wider pool of both technical and contextual knowledge available within the team.

> Anthony: *We just kind of get left to do it because we have to (laughs).*
>
> Lionel: *I think of myself as… quite good at resolving issues by my own means but that is not to say that there are not times when somebody else knows best… We all tend to know some customers better than everybody else.*

Working autonomously in this way was encouraged by Nigel as supervisor:

> *I don't want them dependent on me… They are adults. They are all, bar one, pretty well qualified up to degree levels, so they are all capable of doing their own thing... I want to be kept informed rather than they feel they have to keep saying to me* ***'Your decision, your decision, your decision.'***

In practice, Nigel was routinely consulted on work prioritisation, which restricted the technicians' autonomy to choose to work on more personally fulfilling work, as evidenced by Anthony reporting that he struggled to find time for project work that he wanted to spend time on:

> *I mean generally I just say to Nigel,* ***'I've got these five or six things to do, you prioritise for me'*** *(laughs). Not that I couldn't do it myself… I was meant to be developing part of a website… but Nigel was saying, '****Well we haven't got hassle about that… and I've got other pretty important tasks like supporting the customers.'***

The Developmental Experience of IT Service Support Workers

Previously in this chapter, the developmental experiences of IT service support workers was discussed, with particular consideration of the inter-related notions of learning, expertise, craftsmanship, skill and creativity. In this section, using a combination of observational data, analysed using the tools and techniques introduced in Chapter 2, and interview data, a rich image is presented of IT service support work as a stream of experiences that both develop the knowledge of the workers carrying out the work and result from the practical application of historically developed (or learned) knowledge. All of the 91 observed incidents were recorded as a series of chronological occurrences, and then interpreted, analysed and deconstructed into identifiable knowledge forms using techniques described in Chapter 2 (see Table 4.3). High level details of these incidents are shown at Appendix I and examples of the records of the chronological working of these incidents and the Schutz-influenced interpretation of each identified step taken are presented at Appendix J.

Through these deconstructions and interpretations at the micro (i.e. incident) level, the developmental experiences of IT service support workers at the macro (i.e. by type across incidents) level can be better understood, whilst retaining the subjectivity inherent in the interpretative shared-lifeworld research methods employed. To move from the micro-level to the macro-level, patterns which introduced a quantitative dimension were first created at the Team level. An example of a team pattern for each work type (i.e. Type 1, 2 or 3) is shown at Appendix K. The data relating to all of the teams were grouped together according to the type of work each team engaged in (i.e. Type 1, 2 or 3). The resulting three patterns for each type of IT service support worker are also shown at Appendix K. Thus, through the use and comparison of aggregated patterns, a picture emerged of the different types of IT service support work from an experiential perspective, and of the similarities and differences between the extents to which the different Schutzian 'knowledge forms' were used by each of the three types of IT service support worker.

Work Type	Number of Incidents Observed	Number of Workers Observed
1	36	7
2	33	8
3	22	5
Total	91	20

Table 4.3: Overview of Observed Incidents

Interpretations of each of the three patterns are detailed below along with a summary of the differences. The data contained in these patterns was alternatively analysed to: (i) draw out findings that specifically related to use by workers of the primary senses of sight, hearing and touch (see Appendix L); and show the balance between contextual and theoretical knowledge used by workers (see Appendix M).

By glancing at the patterns for Type 1 work three indications as to the nature of the knowledge used by Type 1 workers are suggested:

i. The weight of knowledge used by Type 1 workers is contextual (as indicated by the extent of the deconstructed knowledge interpreted as being primarily contextual);
ii. The work of Type 1 workers is typically dictated to them by auditory events (as indicated by the comparatively large number of occurrences recorded);
iii. The work of Type 1 workers involves considerable engagement with objects that are viewed on a computer screen (as indicated by the comparatively large number of occurrences of visual (virtual) objects recorded).

The nature of the knowledge used by Type 2 workers is shown to be different through the application of this analytical technique:

i. There is a balance in the type of knowledge used by Type 2 workers between that that is contextual (i.e. organisational specific) and that that is theoretical (i.e. applicable across organisations). Events and

objects encountered are highly contextualised but significant cerebral knowledge employed to interpret those sensorially-experienced events and objects is of a generic technological nature that might be employed to interpret events and objects in other similar settings;

ii. Type 2 workers rely upon their ability to successfully interpret auditorially-relayed messages (as indicated by the comparatively large number of recorded occurrences);

iii. The work of Type 2 workers involves considerable interpretation of objects and events viewed on the computer monitor (as indicated by the comparatively large number of recorded occurrences);

iv. Type 2 workers routinely handle tangible objects - typically hardware items other than their own computers - such as when preparing mobile devices or repairing printers, and rely upon other physical objects, such as paper manuals.

The pattern for Type 3 work indicates that single-line work is different in terms of the knowledge requirement compared to IT service support workers who work within a hierarchical structure:

i. There is a balance in the type of knowledge used by Type 3 workers between that that is contextual and that that is theoretical. As with Type 2 workers events and objects encountered tend to be highly contextualised but upon being sensed by the workers these tend to be subjected to interpretation based upon a high degree of generic technological knowledge that might be employed to interpret events and objects in similar settings;

ii. The Type 3 workers observed were rarely called upon to react to auditory events (e.g. phone calls). Unlike Type 1 workers who spent much of their time answering the phones, the trigger for Type 3 workers to start working on an incident tended to be via their computer terminals, typically a visual (virtual) object, such as an email;

iii. The work of Type 3 workers, similar to Type 2 workers, involves considerable interpretation of objects and events viewed on the computer monitor.

The key differences between the three types in terms of the mix of knowledge used can be summarised thus:

- Type 1 workers are shown to tend to use proportionately more knowledge that has greater contextuality then typical Types 2 and 3 workers. This is true across all the forms of knowledge identified: events and objects; useful knowledge, and recipe knowledge (see Tables 4.4 and 4.5).
- The frequency of the auditory events (i.e. the phone ringing and demanding being answered) experienced by Type 1 workers marks out Type 1 work as being more fragmentary and technologically-controlled than other IT service support work.

Type	Contextuality Percentage		
	Events and Objects	Useful Knowledge	Recipe Knowledge
1	81	49	70
2	60	35	58
3	71	29	50
All	68	39	59

Table 4.4: Percentage Contextuality of Knowledge Engaged with by Worker Type (see Appendix M for further details, and Table 4.5 below for contextuality by team)

Work Type	Team	Contextuality Percentage	Theoretical percentage
1	UKHEE IT Service Desk	85	15
	SCC Education IT Service Desk – 1st line	76	24
	SCC Corporate IT Service Desk – 1st line	69	31
	Stoneworks IT Service Desk	47	53
2	Stoneworks Business Services	98	2
	SCC Education IT Service Desk – 2nd line	60	40
	SCC Corporate IT Service Desk – 2nd line	49	51
	SCC Desktop Services	45	55
	Stoneworks Desktop Support	36	62
3	Server Control Service Support	61	39
	Poyet IT Service Desk	33	67

Table 4.5: Percentage Contextuality of Recipe Knowledge Used by Team

The data outlined above, and presented more fully in the appendices, suggest that, in the synthesis of knowledge in pursuit of 'projects' (i.e. resolution of incidents), the knowledge used by IT service support workers that relates to the exploitation of formal learning (i.e. 'useful' knowledge) might be said to be predominantly theoretical (61%), whilst that knowledge that relates to creativity and judgment (i.e. 'recipe' knowledge) might be said to be predominantly contextual (59%), requiring workers to give great consideration to the local conditions. Because of its relationship with creativity and judgement, it is this recipe knowledge that is considered the most appropriate when considering the IT service support worker as knowledge worker. In this respect the low levels of contextuality of the work carried out by the Stoneworks desktop support team (36%) and on the single-line Poyet IT service desk (33%) suggests that the workers on these teams use predominantly knowledge that might be put to good use in other similar organisations. In contrast the high levels of contextuality of the work carried out by workers on the UKHEE IT service desk (85%) and Stoneworks business services team (98%) suggests that these

workers would find it difficult to transfer their experiential knowledge to another organisational setting.

To better understand the skills/creativity used in the working of incidents assigned to different types of IT service support worker (i.e. Types 1, 2 and 3), each incident was additionally interpreted from a shared life-world perspective (Schutz and Luckmann, 1974) in terms of two dimensions: the procedural nature of the task and the extent to which the task was subjectively familiar to the worker. These interpretations were plotted onto the 'Task Requirement Matrix' model that was introduced in Chapter 2 (Figure 2.5). This model was designed to indicate the skill/creativity required of the worker tasked with 'working' the incident. The model proposes that by giving consideration to the two interpretative dimensions, the level of skill/creativity required of the worker might be suggested and assigned one of four sectors from the lowest level of 'skill/creativity worker requirement' labelled 'robot' through sectors labelled 'bureaucrat' and 'practitioner' to the highest level sector labelled 'artisan'. By giving a 'shared lifeworld' interpretation to each incident, and then plotting the incident with 'considered approximation' on the 'Task Requirement Matrix', patterns emerge suggesting the extent to which workers of each type (i.e. 1, 2 or 3) were required to use different degrees of skill and/or creativity. These interpreted patterns, which are shown at Appendix N reveal differences between the work of Type 1 workers and Types 2 and 3 workers.

The majority of Type 1 incidents were interpreted as having been worked in such a manner that there was a relatively low skill/creativity requirement of the IT service support workers. Whilst some incidents required complex analytical thinking, typically such incidents were referred on (or 'escalated') to second-tier or second-line workers. Of those few incidents interpreted as requiring of the worker comparatively greater skill/creativity, it is probably significant that these were worked by a second-tier worker who was substituting for the first-tier workers whilst they were in a team meeting. It is perhaps the case that this more experienced worker worked in such a fashion that he was able to demonstrate greater skill/creativity. He did not escalate these incidents but rather seemed to act more incisively and, perhaps, with a greater sense of permissible autonomy, than other Type 1 workers observed in other teams,

whose default response, with sensitivity to time pressures and bureaucratic expectations, was to escalate incidents to Type 2 workers. Overall, most of the Type 1 incidents were interpreted as fitting in the lowest ‘robot’ sector of the spectrum.

The interpretation of Type 2 work shows a noticeable spread of the skills/creativity requirement for incidents worked by Type 2 workers: 40% of incidents were interpretatively placed into the ‘robot’ sector of the matrix and 40% into the ‘artisan’ sector. Those within the ‘robot' sector were typically incidents and service requests that at that particular point in time required little in the way of activity (and thereby lacked a requirement for the worker to handle complexity), perhaps because not all the required information was to hand or because it was recognised that another worker was a more appropriate person to deal with the incident. By contrast those incidents interpreted to be within the 'artisan' sector are those that drew heavily upon the workers’ experiential knowledge and skills as an IT technician. For example, one incident worked by a technician within the SCC Corporate Services Desktop Services team took several hours of his time and involved considerable problem solving as he set about installing a new labelling system, drawing upon related personal knowledge gained through installing other types of printers and other types of software within the organisational setting. This worker at this time was engaging in a combination of ‘learning by knowing the same’ (i.e. knowing about printer installations) and ‘learning by knowing differently’ (i.e. developing knowledge of installing ‘label’ printers) (Antonacopoulou, 1999)

Similarly the work of Type 3 workers is interpreted to be wide-ranging in terms of the requirements for the use of worker skills/creativity. Because of the levels of expertise of the observed Type 3 workers, most tasks were familiar to them. Thus, these incidents, in interpretation, were plotted in the top half of the matrix. However, with these familiar incidents there was generally and comparatively (considering all incidents observed and interpreted) a high degree of objective complexity with greater potential for following alternative decision paths. This results in an overall interpretation of the work being in part ‘robot’-like (which is acknowledged in interview by the technicians at Server Control), in part ‘practitioner’-like in that their familiarity with a certain type of

task enabled them to handle the objective complexity in a routine manner, and in part ‘artisan’-like in that they were called upon to use their experiential learning to address matters that were difficult in part because of their rarity and because the decision-paths to be followed to get to a point of resolution were multiple and dependent upon extensive prior knowledge.

We can now combine the analytical interpretations of the skills/creativity requirement for each team with the contextuality of the recipe knowledge used by each team to further analyse the nature of IT service support work from a knowledge worker perspective. Using the tool that was introduced in Chapter 2 (Figure 2.6) we can compare and contrast across teams and work type (i.e. Types 1, 2 and 3). Along the X axis this tool defines four types: robotic, bureaucratic, practice and craft according to the level of skill/creativity required, as previously discussed. This is, in effect, the straightened-out zig-zag line from the Task Requirement Matrix (Figure 2.5). Along the Y axis the tool defines three categories: vocational, balanced and organisational according to the extent to which theoretical recipe knowledge is given preference over contextual recipe knowledge. This data, previously presented by team and grouped by worker type (i.e. Type 1, 2 and 3) can now be plotted onto the tool designed for the analysis of IT service support work as knowledge work performed by a team of workers (Figure 4.1). Whilst the data from the Task Requirement Matrices required further interpretation so that each team might be appropriately positioned along the X axis, taking account of all the incidents observed for each team to arrive at a ‘typified’ point, the Y axis data are the percentages of contextual ‘recipe’ knowledge by team taken from Table 4.5.

The resulting pattern suggests that the work of Type 1 teams stretching across those parts of this matrix labelled ‘organisational robotic work’ and ‘organisational bureaucratic work’. The work is here presented as being broadly limited in terms of theoretical knowledge use and/or requirement for demonstrating a high level of creativity/skill. The work of the UKHEE IT Service Desk is particularly shown to be lacking in opportunity for skills development through challenging problem-solving work that builds up marketable theoretical IT knowledge.

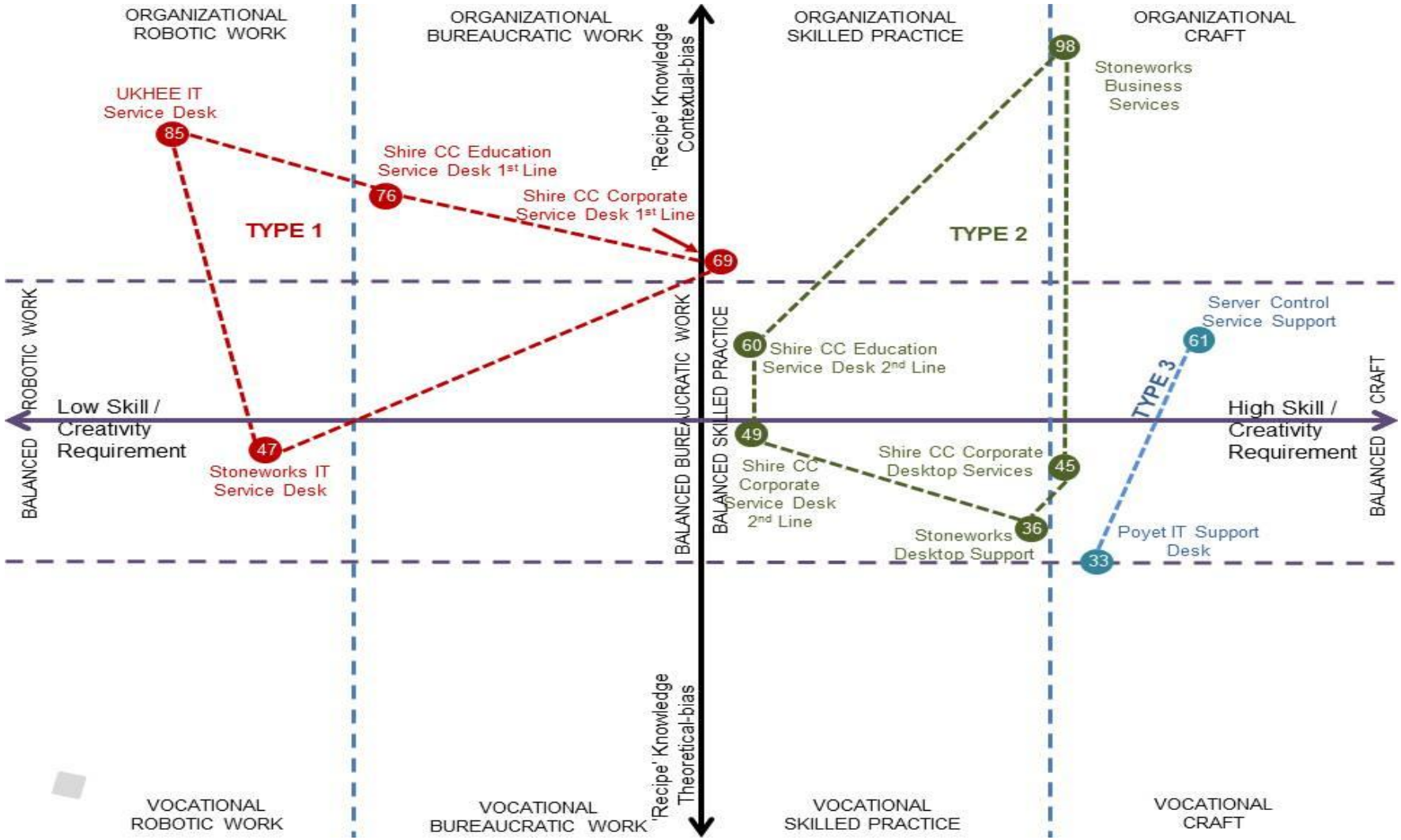


Figure 4.1: IT Service Support Work as Knowledge Work (grouped by Type)

NB. Numbers inside circles indicate percentage of recipe knowledge interpreted to be contextually-biased rather than theoretically-biased.

Plotting the Type 2 teams along the X axis was more problematic than for Type 1 teams, whose work was shown to be more homogeneous in terms of the skill/creativity requirement. Type 2 work would appear to be characterised by a broad mix of:

- tasks that require a quick decision to be made;
- tasks where a fairly effortless resolution can be achieved; and
- tasks that are complex and require the execution of experientially-acquired and formally learned technical skills.

It is as Dick (SCCD) suggested in interview: '*the 80:20 rule… 80% of the faults take 20% of the time.'* The observational data in this regard were supported by the interview data from Type 2 workers at SCC and Stoneworks. Roger (SCCS) in interview commented that the work *'varies between fairly simple administrative stuff and some quite complex administrative stuff and fault finding and troubleshooting*.' Similarly, in a group interview Tom, Dick and Harry (SCCD) all agreed that the complexity of the work varied:

> Tom: *It varies from… somebody's got a battery problem… and all you need to do is take the battery out and put it back in… right up to… some pain in the bum software problem that Apps Support are refusing to look at.*
>
> Dick: *Yeah, we get involved in all sorts of things really… so it can be complex but day-to-day it's fairly straightforward.*

Likewise, in different teams at Stoneworks, both Lauren (STOB) and Charles (STOD) supported the view of Type 2 work being highly varied. Lauren noted that the extent to which she had to work hard at resolving an incident '*just varies from call to call':*

> *You've got some easy ones where straight away you know what the fix for it is, but then you've got other ones you might need to look into in more depth.*

Similarly, Charles commented that '*There's a lot of standard install software,* ***'click next'****,* ***'click yes', 'do you agree the terms and conditions?'*** *But then we've got some more technical things'*. Having previously worked on the Stoneworks' Service Desk as a Type 1 worker, Charles approximated that his present work as a Type 2 worker was '*probably double the complexity*'.

Lauren's work within the Business Services team was geared towards the support of a highly contextualised ERP application. Thus the work of this team is shown to be both requiring of creativity and the application of contextual knowledge. The knowledge work of this team is of high value within the organisational setting but of much reduced value within the broader labour market.

In the light of this variety the credibility/veracity of applying an even weighting to the different incidents observed becomes questionable, and is acknowledged to be a weakness of the study although this can be mitigated against through subjective interpretation from a 'shared lifeworld' perspective. It is also of note that such quantitative assessment follows 'best practice' for Incident Management which implicitly advocates the equating of incidents when implementing quantitative metrics to inform management decision-making (Brooks *et al*, 2006; Taylor, Cannon and Wheeldon, 2007). To equate incidents in regard to assessing the level of skill/creativity required is particularly problematic since to satisfactorily meet the requirements of the role, the worker and her team must be able to handle the most complex incidents requiring the greatest level of skills and ability to work creatively. Therefore, interpretations were made as regards the skill/creativity requirement giving a heavy weighting to those incidents that were most challenging for the workers, whilst acknowledging the propensity for the work to often not require significant skill or creativity. The resulting pattern indicates the work of Type 2 teams as being primarily 'balanced skilled practice' on the matrix (Figure 4.1).

As with the Type 2 work, the work within the two observed Type 3 teams varied significantly:

> Darren (SER): *The interesting thing with the job here is that no two days are the same. You will always come across a different problem.*
>
> John (POY): *It's a technical role so… there is so much variant in there.*

On the one hand there were tasks that were relatively routine albeit objectively complex (i.e. to an inexperienced worker). Nigel (SER) described such work thus:

> *There is a degree of mundaneness in what we do I'm afraid. Some of the jobs we have, like releasing emails that have been blocked for some reason, is dull.*

On the other hand there were tasks that caused considerable puzzlement to workers and relied upon them working creatively, drawing upon the technical and contextual knowledge that they *did* have to compensate for the knowledge that they *did not* yet have. Typically, these tasks were those that enabled the workers to deepen their understandings of the systems they were supporting and the technology they were working with (i.e. 'learning by doing the same': Antonacopoulou, 1999). Lionel (SER) spoke of such work thus:

> *It is certainly a complex job in the sense that your average Joe Bloggs person… even with the greatest of IT skills, couldn't come in to this organisation and be a pro from the off because it is a very specialised thing that we do.*

At a different point in the interview, Lionel offers further insight into the complexity of his role:

> *Typically* [you have to] *work very hard and very concentrated, working across 3 monitors at the same time trying to resolve an important issue… Typically you can be looking at 2 segments of the network and you want to view the traffic on one segment and see it going out on*

the other segment. And then you've got to be tailing a log to see what else is going on at the same time.

The Type 3 workers at both Poyet and especially at Server Control must be regarded as highly creative workers given the expectation upon them that they can resolve with limited support from colleagues the most complex of incidents. They must be seen as such even though a significant proportion of their work was the performing of tasks which they had performed regularly for many months and years, albeit that these tasks were objectively complex and involved the use of coding skills and variable contextual information. Thus, to reflect the difference between the skills and creativity demands of Type 3 work (particularly vis-à-vis Type 1 work) it is necessary to weight the data to reflect the more complex work. This places Type 3 workers towards the right of the X axis, within that part of the matrix labelled 'balanced craft' reflecting the significance of fusing theoretical and contextual knowledge.

Returning to the earlier discussion in this chapter about craftsmanship, the pattern in Figure 4.1 invites an interpretation of IT service support work generally as containing elements associated with craft working. However, the findings indicate that the work of Type 1 workers is highly bureaucratised with opportunities to work in such a craftsmanlike manner restricted. The common human spirit that desires the achievement of a degree of excellence in one's work can be seen to be dampened down by the process and structural restrictions placed upon these workers. The focus is on acting as a consistent rationalised resource rather than on developing and improving individual capability. In line with ITSM 'best practice' the emphasis of these Type 1 teams was generally on the resolution of incidents in the most pragmatic way possible with little evidence of the IT service support workers taking time to purposefully develop their understanding of the supported systems whilst working at resolving the systems. Thus, at Stoneworks, Asghar (STOS) reported a lack of challenge in the job: '*I don't think there is anything that really challenges my ability now because I know all of it.*' His work was generally denying him the opportunity to develop skills through new experiences and his aspiration was to move to a more challenging role.

> *To be honest I think it comes to a stage where I've been here now 19 months. Now I need to have something to keep me challenged every day and keep me intrigued.*

Ravi (STOS), the team supervisor, highlighted time as a factor that impacted on the opportunity to produce work of a higher quality.

> *I think a lot of the time they know that they can do a lot better if they had the time.*

The work is thus shown to prioritise quantitative rather than qualitative measurements, suggesting a lack of focus on the craftsmanship of the work undertaken.

As previously mentioned, Jonathan and Navinda (UKHS) both expressed frustration at the lack of opportunities to engage with technical problems as a path to developing their technical skills. Their less technically-educated colleague, Doris (UKHS), who had been at UKHEE for 25 years, by contrast felt that she was still mastering the job:

> *I don't think anyone can completely master it because technology is constantly changing, so, you know, you are going to be learning things frequently.*

This is the mind-set of the 'working craftsman', constantly open to new learning, whereas Jonathan and Navinda in comparison were perhaps 'frustrated craftsmen' because their prior learning meant that they were working well beneath their technical capabilities. Just like an upholsterer who is sufficiently skilled to be able to reupholster an antique button-back Chesterfield settee but is tasked with upholstering an endless supply of simple dining chair seats, they found their work uninspiring and mechanistic.

Sandra (SCES) seemed content to be working within her comfort zone. She claimed to '*play around with the SIMS database*' to learn more about the system that she was supporting but in interview, she tellingly alluded to the importance to her of having formal training to enable her to carry out the more complex tasks that came her way.

> *Obviously if it's something new, at first it's going to be complex until you've had the training and that. It* [the work] *is handlable because we get on-the-job training.*

This suggests a pragmatic mentality rather than a craftsmanlike desire to develop through experimentation a deep understanding of the technology supported by the team. She assumed that with formal training she would be equipped to perform a specific task. Even though she had been in her current job for over three years she was aware that she tended to rely on others when tasks challenged her present capabilities. When asked what she found challenging in her work she immediately responded by talking about her limitations at using generic (theoretical) IT technical knowledge.

> *The more technical side of the calls that we get, the networking and DMS*[8]*… that is sometimes a challenge to know what to respond or where to log it to. But again we have got the backup anyway so it's nothing that you can't handle even though it is a bit more challenging to the old grey cells.*

What is particularly interesting here is that she saw her role primarily as being one of responding to customers and logging calls as opposed to investigating, diagnosing and resolving incidents. Her first instinct it seemed was pragmatic rather than creative: if she was unsure of how to progress an incident her *modus operandi* was to ask someone else rather than attempt to develop her knowledge through creative engagement with the issue.

> *If there's something I don't know I'll… find out and… colleagues on second tier will help.*

Her colleague Adam (SCES) revealed that the job of the IT service support worker in this team was often one of pragmatically facilitating incident resolution using organisational skills rather than using IT skills/knowledge.

[8] Document Management System

> *When an issue is dragging on, and third parties are involved, the work involved there is staying on top of them; you know, chasing up information or getting things done as soon as possible… You do have to ring around a load of people to get it done.*

It was noticeable that Adam appeared to be a quiet and self-reliant worker, and this is borne out in his self-perception of '*using a fairly rational approach to any new software problem that we come across*'. In this respect, he displayed more than Sandra the attributes of a craftsman, selecting from the communal inbox tasks that he perceived he would do '*more competently than maybe some others*'. He recognised that over time he had become more competent with resolving issues:

> *When I came in and there was something I couldn't do I would just pass it straight over but now I tend to try to elicit a bit of information; try to resolve it myself.*

He gave the impression that there was little left for him to learn within the confines of his role:

> *What do I find challenging? None of the actual work. I wouldn't consider that as challenging.*

Because of the procedural arrangements to pass on incidents to second tier workers if they could not be resolved in a short period, he was unable to develop his knowledge of the in-house systems by working on the more complex incidents. The job no longer stretched him and as he confessed, the most challenging thing for him was '*staying motivated*'.

Previously a differentiation was made between the absolutist craftsman '*obsessed with perfection'* and aspiring to gain broader and broader experience over time (Sennett, 2009, p. 46) and the practitioner concerned with meeting the short-term objectives laid down for them by management. The former mind set is self-centred (albeit that the worker's employer benefits from such experience) whilst the latter is self-sacrificing in its focus on organisational objectives. The narrative that radiates from the interviews with Type 2 workers

is one that recognises that it is necessary to have a long-term perspective in order to be equipped to perform all of the duties required in the present. Albeit that the questioning technique of using pre-defined questions may be justifiably criticised for directing the workers' thoughts (i.e. they were to some extent leading questions, even though there were no expectations or preferences as to the answers provided), the themes of time and the development of expertise are addressed in a noticeably consistent fashion. Experience over time, rather than formal learning, is seen as being essential for the development of expertise as an IT technician (from a self-centred perspective) and for effective performance in relation to the requirements of their roles as Type 2 workers (from an organisation-centred perspective). Time and again in interview Type 2 workers emphasised the importance for their effectiveness of situated experience, i.e. time spent gaining technical experience within a technological context that is constantly shifting:

> Stephen (SCCD): *a lot of what you do is experience and applicable to a lot of other things, so* ***new stuff that comes along mainly has the same sort of problems. They may not be the same specific problems but very similar problems*** *so a lot of it is experience… When I first started out… I used to be daunted by some of the problems... I didn't know where to start, whereas now new problems… are not a problem... You just work through it in an organised manner... there's a lot of the job that can't be taught; its experience and it's feeling for the job … until you have got that experience… then it becomes second nature.*

Here the technician alludes to both 'learning by knowing the same' (in bold) and 'learning by knowing differently' (underlined) (Antonacopoulou, 1999). He is aware of how his experience has given him confidence to tackle tasks that are unfamiliar to him in the knowledge that his experientially-acquired 'stock of knowledge', coupled with a learned method of strategic thinking, will enable him to satisfactorily investigate, diagnose and resolve incidents. Similarly Roger (SCCS) is conscious of the efficiency and effectiveness of his working at the

time of the interview in comparison to when he started the job and implies that the development of contextual knowledge as well as technical knowledge is important:

> *To do* [the job] *well, with the way that the organisation is structured and the enormous variety, the only way that you can do it is with experience of doing it.*

At Stoneworks, Charles (STOD) and Lauren (STOB) also emphasised the importance of doing their job over time but were more inclined to report on their limitations because of their lack of experience rather than their acquired expertise.

> Charles: *If you consider I've been doing [the job] a year and am still learning. Other guys have been on the team for five plus years … and they are still learning it. You can't become proficient at it … because the software gets upgraded each year. You can only say how many years of experience you've got.*

> Lauren: *I've been doing [the job] for nearly three years now and I still don't know a lot of stuff. I have to ask Neil or someone who has been here a lot longer than me, or I might know stuff that he doesn't know. I think you're constantly learning new stuff every day … you are never going to know everything, there's far too much information to know.*

Here Lauren suggests a working environment akin to a self-supporting craft workshop where particular individual strengths are acknowledged and exploited within the social setting. Stephen similarly notes that within his social setting *'there is always somebody to help and ask, and they are always keen to help,'* emphasising the importance of shared knowledge as well as performing physical tasks to gain the necessary experience to perform the tasks required of the job satisfactorily. Later in the interview, suggesting that Orr's (1996) findings in relation to photocopier engineers might equally apply to IT service

support workers, Stephen gives an example to explain how informal knowledge transfer via storytelling is crucial for building up individual worker's experience (or, to use Schutz's phrase, 'stock of knowledge'):

> *We always talk about problems that we come up against just in chit-chat... Recently… we've lost several members of the team, two of whom were particularly associated with libraries and… anything that came in for a library they picked up and did. So the knowledge that they had was quite specific to libraries and they kept it amongst themselves and… didn't share it because there was no need to. But now we're all having to… [pick] up information about libraries and we share it amongst ourselves when we are back at the office.*

Roger suggests similar informal knowledge sharing is important within his team comprising both Type 2 and Type 1 workers:

> *I'm supposedly the senior member of the team … if people need to know stuff… then they usually come to me first... I've been doing [the job] the longest of anybody except for Carl who seems… happy to take a backseat role and just get on with the work.*

The picture he gives here is of a craft workshop within which he assigns himself the role of the master craftsman with responsibility for the development of those 'learning the trade' (i.e. the novices and apprentices). He notes the experience of Carl but effectively assigns him the role of time-served journeyman, employed to execute the skills he has learnt and proven over time, but without any responsibility beyond that. The cultural norm has apparently been established that the novices/apprentices approach the master rather than the journeyman for instruction.

In line with the complexity of significant elements of Type 3 work, there is a strong argument for Type 3 workers being more closely associated with craftsmen/women than practitioners. In interview the importance of continuously

learning through exposure to new technological circumstances recurs. Nigel (SER) remarked that the technicians *'enjoyed the learning side of it'*:

> *The on-going learning and using the brain is quite important... It's a techie thing of having new shiny toys … of having new things to go and learn about: protocols or whatever.*

One of these technicians, Anthony (SER), spoke of the struggle he had to be capable of doing the job when newly employed, suggesting that the knowledge was sticky (Szulanski, 1996) and thereby difficult to acquire and internalise and an experience of 'learning by knowing differently' (Antonacopoulou, 1999). It was only through exposure to the technical and social environment over a prolonged period of time, gaining confidence through experience that he was able to become proficient:

> *It was a bugger to learn because you just had to try to glean as much information off your colleagues as you possible could and constantly ask questions.*

Here, Anthony is alluding to the importance of time and contextuality within individual worker 'stocks of knowledge' which is also acknowledged by other Server Control employees, most succinctly by Nigel (SER):

> *There are seven people in the world that have the skills we need and six of them are in this room, the seventh is in Ipswich. We could get people in with red hot skills but that wouldn't be sufficient.*

Similarly, Laura (STOB) spoke of the primacy of contextual knowledge over theoretical knowledge for the Type 2 workers in her team, who nonetheless demonstrated a deep technical knowledge of the ERP system they supported:

> *We have got quite a mix of people from different areas of the business... I came from the building materials area of the business and worked in the transport office… somebody else in our team may have come from the*

> *aggregates and asphalts side of the business and worked on the sales side of things… I would hate to be a person coming in from the outside world having to fit into our team.*

Mike (POY) reiterated this emphasis on time as a factor in developing towards a personal expertise at supporting the applications that had been developed by Poyet:

> *It takes you quite a few years to really get into them and understand how they really work … so you can predict how they are going to work in particular environments.*

The importance of experiential learning alluded to by Mike was similarly acknowledged by John (POY), who emphasised the fulfilling of personal rather than corporate objectives:

> *It's like anything: the more you do it, the better you are at it… I'm very much, '**I want to be learning things'**. I don't want to be… just sitting twiddling my thumbs and hoping for 5 o'clock to come along.*

Nigel made a similar point about 'his' technicians' needs for individual technological development, i.e. the constant upgrading and honing of skills:

> *They are not people that want to sit there doing shelf–stacking. They want brain switched on, doing things, sort of work.*

This learning takes place experientially from exposure to unique circumstances with clear objectives to resolve specific incidents. Thus learning and problem-solving are intimately related. Formal training might result in the acquiring of core skills, what I have, after Schutz, referred to as 'useful' knowledge (for example Darren (SER) had received training in Linux). The key knowledge though that identifies Type 3 workers as craftsmen is what I have, after Schutz, referred to as 'recipe' knowledge. Nigel implicitly differentiates

between these types of knowledge within Server Control, neatly referring to the application of recipe knowledge as the capability to 'jump the gaps':

> *The base knowledge is how the box works… but the real thing… we need is for somebody to be able to jump those gaps… without being spoon-fed. And to understand what is going on and what the implications are of a problem or what can cause it. So... it's not the nuts and bolts things because you can learn them from a book, Google it in 2 minutes... It's the how to solve a problem and how to approach it in the first place… jumping through rather than scripted style of doing it.*

Mike similarly points to the importance of *'what you know; how you can work things out... your methodologies you use; the most efficient way of doing something.'* By way of illustration, the method described below, taken from an observation record, shows how John used his experience to rapidly progress an incident through trial and error. There was no guarantee of a positive outcome, but his expertise informed his activity that *did* result in a positive outcome:

> *Having failed to log into a server John set about in turn from left to right hitting each key along the top of the keyboard whilst looking at the monitor for any change. When he hit the PRTSCR key a window appeared that enabled him to select other server 'slots'.*

5 Discussion: 'The IT Service Support Worker as Knowledge Worker'

From the 'inclusivist' perspective, IT service support workers are knowledge workers of the sort originally prophesied by Drucker (1957, p. 122), in that they are for the most part '*the products of the educated society*'. Most of the interviewed Type 2 and Type 3 workers had undertaken post-compulsory formal education courses and had then continued to gain recognisable and

marketable qualifications as an adjunct to their working career. This was similarly the case with the early-career Type 1 workers. As older less-qualified workers moved along the career conveyor belt towards retirement, the inference is that those joining at the start of the conveyor belt were the 'products' of a modern vocational-education system and that at some point in the future all IT service support workers would have to their names post-compulsory education qualifications, be they NVQs, HNDs or degrees.

The difficulty with the inclusivist perspective to knowledge work is that by incorporating all work it ceases to mean little other than to emphasise the importance of thinking within the workplace generally. By reconsidering Hislop's (2005) limitations to knowledge work as being primarily intellectual, creative, and non-routine one might start to differentiate between types of jobs. Thus, Type 2 and Type 3 IT service support work (vis-à-vis Type 1 work) can be seen from the observation data to be:

- more intellectually-demanding,
- requiring proportionately greater use of theoretical knowledge;
- more creative, requiring synthesis of theoretical and contextual knowledge (Frenkel *et al*, 1999 – see Chapter 2; Tam *et al*, 2002); and
- more autonomous and less routine, being more variable in terms of the demands upon personal knowledge.

This section discusses these distinctions under the subheadings of: 'the autonomous and politically assertive knowledge worker'; 'the creative and craftsmanlike knowledge worker' and 'the learning knowledge worker'. This is preceded by a short discussion on the sensorial nature of IT service support work.

The Multi-Sensorial Knowledge Worker

The data confirm that IT service support work is significantly multi-sensorial. Listening skills are notably more important for Type 1 workers and tactile dexterity of some importance for some Types 2 and 3 workers. Nonetheless,

the primary sense used by all IT service support workers is sight, with a particular capability to be able to scan across complex landscapes (often over two, three or four screens) to identify, from within the data/information, specifics that require interpretation (using cerebral knowledge) to enable the incident to be progressed towards resolution.

The significance of this finding is that it might inform management practice in terms of the recruitment and development of staff. A confident attitude to working with computers has long been associated with introversion (e.g. Sigurdsson, 1991). In contrast, the importance of extraversion has been associated as being important for customer contact jobs (e.g. Furnham and Coveney, 1996). If Type 1 work, with its emphasis on listening to and speaking with the customer, becomes, through the professionalisation of IT service support work (as discussed in Chapter 3), the gateway to the more complex Types 2 and 3 work, then the recruitment managers for Type 1 teams, as gatekeepers to IT service support careers may need to consider longer-term as well as short-term criteria when conducting criteria-based recruitment. By looking beyond the immediate needs they will be better placed to avoid the exclusion from the profession of introverts who may lack the core communication skills required for Type 1 work but who may in the future be ideally suited for Types 2 or 3 work that is less demanding of auditory capability.

Secondly, notwithstanding that workers used their listening skills during social exchanges to gain knowledge that they could then use to progress the resolution of an incident, the constant auditory interruptions observed being experienced by Type 1 workers has clear implications for technical skills development. The fragmentation of the day by such events denies Type 1 workers the necessary opportunities to learn deeply and/or act creatively such that they might develop their craft and progress to becoming Types 2 or 3 workers who experience less fragmentation of their day (Gratton, 2011d).

The Autonomous and Politically Assertive Knowledge Worker

Drucker's original conception implied that knowledge workers enjoyed a high degree of autonomy. Of technology installation engineers he had noted (in 1954) the lack of a need for management to check up on their work. And this begs the question: to what extent do IT service support workers have their work checked up on? This would appear to be variable across the three types of IT service support worker. The influence of ITSM 'best practice' has resulted in the bureaucratisation of much IT service support work including the vast majority of the work observed. Work output is routinely quantitatively measured and monitored. Most of the observed IT service support work was carried out within the confines of a team 'space' and surreptitiously monitored by managers, supervisors and team leaders, by the workers themselves of each other, and by technology. Further, most strikingly on the Stoneworks' service desk, IT service support workers were found to be '*organized like machines'* (Drucker, 1954, p. 290) into management-structured teams dependent upon processes and technology imposed by management to regulate the way they worked, most notably, the IM process and the WFMS tool used for tracking the lifecycle of incidents.

IT service support workers are in some ways constrained by the accepted process by which incidents are received, investigated, diagnosed, resolved and closed. And yet within the middle stages of the process the data reveal that, particularly for Type 2 and some Type 3 workers, there remains a significant scope for the outplaying of autonomy. This scope though was generally more limited for Type 1 workers who were subjected to greater time pressures and prone to being interrupted auditorially – typically by a phone call – such that they were returned to the more bureaucratised early stages within the formal Incident Management process.

Observation data indicates that workers are left to decide how they investigate, diagnose and resolve incidents: what they check for first, what resources they call upon (e.g. colleagues, the Internet, manuals etc.) or don't call upon (e.g. preferring to use 'trial and error') etc. In this way IT service

support work reveals itself to be, in spite of its bureaucratisation, fundamentally work with a significant autonomous element to it, which allows for the creativity that was often necessary for resolving incidents.

The data reveal a key difference between levels of mental autonomy and physical autonomy. Most notably, the Type 3 workers at Server Control exercised significant mental autonomy, regularly using 'trial and error' creative thinking as they investigated incidents, but lacked physical autonomy, seemingly conditioned into accepting the management expectation that they remained seated at their desk throughout their shift. The management supervision of these highly (and specifically) skilled technicians in scarce supply was subtle but nonetheless close. Whilst workers were given 'freedom' to think, it was a 'freedom' to think about the matters that contributed to organisational profit whilst they were metaphorically chained to a desk to optimise the productivity of that thinking. Just as management control was subtle at Server Control, so workers at Stoneworks subtly asserted themselves against more evident control mechanisms. For example, they overcome physical barriers (headphones and separating barriers) to engage in social conversations – sometimes overtly and sometimes more surreptitiously; and they choose to ignore management expectations that they prioritise the use of a management-imposed ICT tool for sharing knowledge, preferring to interpersonally communicate (amongst other knowledge sharing methods) or use their creativity to ‘learn' what they needed to know through self-reliant exploration.

The Creative and Craftsmanlike Knowledge Worker

The observational data reveal IT service support work, particularly Types 2 and 3, to consist of highly creative experiences as workers fuse together theoretical and contextual knowledge in the investigation, diagnosis and resolution of incidents, albeit that that creativity might contain a rational/methodical element imposed by the worker as part of their creative process. Creativity in a job that is typically carried out in mental isolation (i.e. one worker has sole responsibility for one incident at any given moment) carries

an inference of individuality. An organisational reliance upon creative individuals runs counter to an organisational reliance upon a management practice (i.e. ITSM 'best practice') that rationalises workers into homogenous interchangeable 'machines' that do their work with reliable consistency within processes.

An analysis of the observational data shows that for some workers (typically Type 1 workers) the work can be typically of a routine nature and not require individuals to arrive at solutions based on the application of learned knowledge to complex and unique situations. Such workers might typically be easier to replace than experienced workers doing Type 2 and 3 work, who are typically able to comfortably address such complex and unique situations with creativity because of the insights they have previously acquired over time.

IT service support workers are thus revealed as being **not** interchangeable and easily replaceable resources in the same way that the aforementioned experienced upholsterer, whose work is creative and varied and might include, for example, working on antique button-backed Chesterfields, is not interchangeable with an upholsterer whose experience has been limited to simple dining-room chair seats. Similarly, Lionel Messi cannot be readily replaced in the Barcelona football team by, say, Lewis McGugan, a Nottingham Forest footballer who objectively plays in the same position and wears the same number 10 on the back of his shirt. Looked at from a qualitative perspective both these players might be considered to have a high level of footballing skill (i.e. as a generalisation of socially-constructed subjective opinions of observers of the game), but Messi is generally considered to be more creative and skilful. They are, on the one hand, interchangeable in that McGugan could play at number 10 for Barcelona, but, on the other, they are not interchangeable because the results that Barcelona achieves might qualitatively be adjudged to be likely to suffer as a result. To quantitatively prove that one footballer is better than another is problematic[9]; qualitative judgments as to capability predominate in the recruitment of footballers testifying to them being valued for their individuality rather than their commonality. ITSM 'best practice'

[9] Applications such as Prozone (www.prozonesports.com) are used to apply quantitative reasoning to augment qualitative judgments.

implicitly does not do likewise but rather in the anonymisation of the labour force and the bureaucratisation and rationalisation of the ‘system’ that includes that labour force, disregards workers’ individuality, implicitly asserting their homogeneity. This study makes apparent the inherent risks of the ITSM 'best practice’ support for this rationalisation of the IT service support workforce in terms of qualitative organisational performance.

And whilst, of course, footballers develop their skills through practice, this analogy also emphasises the 'nature' element of creative capability: Messi’s skill was apparent from an early age (Jenson, 2010). Similarly, qualitatively some IT workers might be considered to be ‘naturally’ predisposed to be better at resolving IT incidents than others. In an early stage of my career I trained to be a COBOL programmer. When I first started the intensive training course, I rapidly gained an awareness that others in my training group picked things up quicker than I did, and I reasonably surmised that they had a more ‘natural’ inclination towards the work of a COBOL programmer. As complement to the 'nature' element, a ‘nurture’ element to creative capability might also be emphasised by extending this analogy. Over time the members of my COBOL training group were placed in teams with responsibilities for writing and maintaining COBOL programs. Through these individual experiences some workers developed their skills to greater competency than others such that some thrived and became expert programmers to be entrusted with the most important programs whilst others developed their expertise more slowly, typically moving away from programming into areas of IT specialism. Objectively, the entire training group had, in passing through the training programme, proven themselves to be competent COBOL programmers and thus rationally were homogenous, interchangeable human resources. Through human judgement and decision-making over-time, the variably developed capabilities of the members of the training group led to individualised career paths. The outplaying of experience emphasised their individuality. Good management practice was to recognise that heterogeneity and, based on difference rather than commonality, direct workers towards work where they could make the optimum contribution to the organisation’s success.

Because ITSM 'best practice' anonymises workers, rationalising them within processes, the importance of these individual differences, and specifically the importance of creativity to the maintenance of IT systems, is undermined. This rationalist 'best practice' perspective does not acknowledge the importance of creativity because it implies a loss of management control which flies in the face of a ‘best practice’ designed explicitly to assert control. The pretence of 'knowledge' as being rational, extractable, codifiable and controllable is revered and preferred to a more realistic conception of 'knowledge' as irrationally creative, embodied, un-codifiable and uncontrollable. Further, because of this pretence the managerial incentive to address how to manage or nurture creative knowledge within the ITSM setting is absent within the ITSM ‘best practice’ (ITIL) literature. By not focusing on the individual, the focus is necessarily lost on the knowledge that sustains the organisation. The core argument emanating from this discussion is that the implementation of ITIL bureaucratises the work place – as Addy (2007, p. 5) asserts it was ‘*devised by bureaucrats for bureaucrats’* - and as a result the importance of creativity is diminished. Naughton (2012, p. 19), when recently commenting upon the decline in Microsoft's fortunes, suggested that when ‘*bureaucratisation takes hold… innovation takes second place*’. The data here tend towards supporting this view within IT service support settings. Specifically, Types 1 and 2 workers were recorded complaining about the bureaucratic set up stifling them from innovatively using and/or developing their skills and knowledge. They were being denied developmental experiences by being prevented from 'trying' to solve incidents of greater complexity. Their opportunities to develop expertise was thus stunted. Whereas in a craft warehouse, novices implicitly have access to the journeymen and masters 'above them', these IT service support workers were excluded from the workplaces of those 'above them' and with it they were denied the opportunity to develop from watching them at close quarters and working with them. To refer to the Schutzian model presented in Chapter 2 (Figure 2.1) the workers could 'project' and ‘phantasize’ an incident being 'worked' to a point of resolution, but they could not take the action to bring about that resolution.

A manager concerned with worker efficiency is concerned with how long the worker takes to fulfil tasks. The time taken by an IT service support worker considering and interpreting, or sensing and reflecting, or contemplating thus becomes problematic for the manager seeking to 'eliminate waste' from the process placed under their ownership and control. It is not clear to them what the return is on the cost of the IT service support worker spending their time (that they have 'sold' to their employer) in the activity of thinking. As Tweedie (2013, p. 97) expresses it: '*Craftsmanship… sits uneasily with a demand for quick profits, because good work may be less profitable than fast work in the short-term.'* One reasoned approach to minimising waste is to take the perspective, as Adair (1971) does, that the more experience the worker has to draw upon when problem-solving (e.g. investigating, diagnosing and resolving an incident) the less time she needs to solve the problem before her. Psychology research into chess playing is pertinent here. Two types of mechanisms are identified as underlying chess skill: *'fast mechanisms, such as recognition, and slow mechanisms, such as search through space of possible moves and responses'* (Burns, 2004, p. 442). Speed distinguishes the two and studies have shown that a grandmaster might demonstrate a high level of skill by relying on swift pattern recognition processes (e.g. when playing speed or blitz chess). In order to develop their skill further and to achieve the highest quality of performance grandmasters rely upon an increased depth of search using experientially-learned patterns (Chabris and Hearst, 2003, Burns, 2004). Such dual mechanisms were clearly apparent when observing the IT service support workers to the extent that some research data capture was abandoned because the decisions and actions taken by the workers were taken too speedily for them to be manually captured as a narrative. In particular, the complexity of data typically being observed simultaneously on their three monitors by Server Control workers marked them out as workers who readily recognised and made quick sense of objectively complex patterns appearing before their eyes. Their work experience had provided them with a 'stock of knowledge' and the situation had provided them with a cue to specific regions of this stock, enabling them to 'project' to the problem being resolved and then to solve the problem quickly (Schutz, 1953; Simon, 1992; Kahneman, 2011).

The complexity and the variability of IT support tasks, and the consequential reliance on the flexibility and creativity of the human worker, resist against the popular siren call to 'lean' Tayloristic management techniques. Where conditions (e.g. contextual data) differ (even with routinised procedures) the worker may need time to contemplate before taking each sub-action and this might be seen to provide the worker with resistance power within a Foucauldian web of power relations that is never the preserve of a dominant power over a dominated group (Downing, 2008). So, when the manager asks an IT service support worker why a particular task has not been completed yet, she knows that there cannot be a reliably precise management expectation of how long it should take her to carry out the task in the same way as there might be an expectation of a production line worker working within a defined 'lean' process. Glass (2005) argues that, considering the complexity of software systems, attempts to assert control over software maintenance workers (i.e. application support workers) by deskilling and work fragmentation are counterproductive and counter-creative. He acknowledges the political battle between the 'creative' software engineer and a management methodology that seeks to routinise and de-skill the work of software engineers. For those IT service support workers whose work necessarily entails a high degree of creativity born of reflexivity the power to resist such intent is significant. For those whose work requires less creative thought (where the objective task complexity is low) such power to resist becomes of lesser significance and management implementation of objective standards of performance and measurement within a more routinised working regime makes overt forms of resistance increasingly futile. In this respect, we might recognise Type 1 workers as being less creative in their work and thus more prone to rationalisation techniques; and in this way we might assert that they are not 'knowledge workers' to the same extent as Types 2 and 3 workers who are shown to have had a greater opportunity to work creatively and with more variety. If we are to resist dichotomising between 'knowledge workers' and 'non-knowledge workers', we must also resist dichotomising between the 'absolutist craftsman' and the 'functional practitioner' as previously discussed. Nonetheless, the data suggest that we are more likely to find traits of the former when observing Types 2 and 3 workers than when observing Type 1 workers. For example, when John

engaged with incidents that had been assigned to him, he tended to tackle them in such a thorough manner that he *en route* discovered numerous other underlying and related issues that from his 'absolutist' mind-set had to be addressed – regardless of whether these issues had been reported or were causing anyone any significant difficulties. And, further marking his approach as being anti-functional, it was significant that typically he decided to *not* record these issues within the bureaucratic systems that had been put in place by a management that sought control over the work of the technicians through the implementation of ITSM 'best practice' processes.

It is the management desire for control of knowledge, coupled with an inevitable recognition that the desired control has not been achieved, that results in the common power-driven, blame-laden conclusion that workers consciously hoard knowledge (as previously discussed). No evidence emerges of knowledge hoarding amongst IT service support workers. The hoarding of knowledge implies a management optimism as to its objectification that is implicitly not shared by IT service support workers (Trusson *et al*, 2013). They do not hoard knowledge because the knowledge is not readily available to be hoarded. It was there as a series of fleeting thoughts directed (or 'projected') towards the desired outcome (i.e. incident resolution). The footballer, Lionel Messi is not accused of hoarding the knowledge that enables him to combine thought and instinctive action to overcome the defensive barrier in front of him as he heads towards the goal. And so it seems irrational to accuse workers, as ITSM 'best practice' explicitly does, of hoarding knowledge (Taylor, Lacy and MacFarlane, 2007). These workers, like Messi, individually combine thought and instinctive, cue-driven action, formulated out of ‘natural’ capability and countless hours of practice, to overcome the barriers between an incident being referred to them and the incident being resolved by them.

The 'working' of such an incident might be considered to be a particularly complex task using the three criteria identified by Schroder *et al* (1967): information load (i.e. how many dimensions of information need to be considered); information diversity (i.e. how many alternatives are available for each of those dimensions) and the rate of information change (i.e. how uncertain the situation before the worker is). However, the data point to the

prior experience of workers, such as those at Server Control faced with objectively complex tasks, being sufficiently rich as to make those tasks reasonably straightforward. Their experientially-acquired 'stocks of knowledge' enabled them to readily construct a temporary mental scaffold to support, guide, configure and discipline their activity (Orlikowski, 2005) enabling a learned rationalisation of the information load and a wise selection of the most appropriate of the alternative actions available to them.

Whilst the ideological nature of mainstream ITSM practice is one of rational, mechanistic efficiency and control, with an on-going drive for certainty and improvement, the nature of IT service support work is, like the technical service support work observed by Orr (1996), one of fragile control. The primary role of the support function within ITSM is to provide greater certainty to management as to the day-to-day reliability of the IT services being provided by the assertion of control over a fragile, faltering and/or failing system. The defined IM process (amongst other predefined processes) implicitly asserts some degree of control by theoretically setting down rationalised steps to restore the system to its ideal state. Some of these steps, such as recording and closing the incident, are revealed to be suitable for prescriptive standardisation. Other steps, notably investigation, diagnosis and resolution are revealed to be heavily context-dependent and of variable complexity. Where specific types of tasks can be in large part standardised (e.g. a password reset), it can typically be performed rationally by a Type 1 worker from a functional practitioner perspective. Where it cannot, because of task-complexity, it may require the relinquishment of control, passing it to a Type 2 worker who may have acquired the complexity of knowledge and expertise required to complete the task because over a long period of time they have been adopting an 'absolutist' craftsman/woman's perspective (Byström and Järvelin, 1995).

This study illustrates that the work of IT service support workers, across all types, varies considerably in its complexity. Tasks that are more complex are to a greater extent characterised by: unknown or uncertain consequences of action; inexact or unknown means-end connections; the existence of a number of subtasks; have several interrelated and conflicting elements to satisfy; and/or confront the problem-solver with many alternatives, each with many attributes

(Payne, 1976; Campbell, 1988). Such tasks are resistant to proceduralisation and thus to management control. ITSM 'best practice' guidelines, in aggrandising management control and worker practitionership, would appear to 'make good sense' for the management of those tasks that lend themselves to being proceduralised. However, the suggestion is that they are less helpful for the management of work that, in its complexity and reliance upon workers working creatively using their historically-learned 'stocks of knowledge' that enable efficient problem-solving, resists control.

Where problem-solving pathways are more limited, the potential for value to be achieved from the proceduralisation of the task increases as the economic benefits of the functional practitionership perspective come to the fore. However, to task the absolutist craftsman/woman with such a proceduralised task may invite work inefficiency. Whereas experts may outperform novices on complex ('deep structure') tasks by exercising a learned ability to focus on that part of the task that contains the solution to the problem, they lose the advantage of this ability when dealing with non-complex ('surface structure') tasks and are likely to carry out additional superfluous exploratory work (Haerem and Rau, 2007). It can also be argued that productivity issues might arise from the use of the expert for work that has been 'proletarianised' through proceduralisation. With little opportunity to carry out complex exploratory work, experts with an absolutist craftsman perspective are likely to become frustrated and disengaged from the work as the intrinsic and extrinsic rewards are greatly diminished and their sense of identity as a (self-)respected expert comes under threat (Dawson, 1996).

The Learning Knowledge Worker

Once consideration to quality is given, then individuals tasked with providing the necessary quality must also be considered in terms of how their skills are nurtured. This suggests a shift away from the management of knowledge and towards the tailored management of the learning and development of IT service support workers. IT service managers must be capable of assessing work

quality as well as work quantity, either through themselves having the requisite 'learned' knowledge, or being able to consult with those who do. Currently, ITSM 'best practice', in its aggrandisement of metrics and anonymisation of workers, underplays this important qualitative aspect of IT worker management.

The different narratives of different IT service support workers in the same organisations and teams reveals differences in the developmental needs of individuals in their respective career 'journeys'. It is through the use of individual skills that organisations might effectively handle the range of service incidents they might face. In sharp contrast to the rhetoric of Senge's (1992) learning organisation, that is embraced by ITSM 'best practice', it is the individual worker and not the team who emerges from this study as the fundamental unit in the modern IT service support operation. The focus of the learning organisation on the team is one that encourages worker homogeneity and thus inter-changeability. This conflicts with the individually creative element of IT service support work (particularly Types 2 and 3) that results in skill-refining craft workers with highly individualised personal histories of developing specialist contextualised expertness.

It might be considered that workers learn through trial-and-error when working on objectively complex tasks as novices (Hart, 1992) or when faced with an unfamiliar incident, and refine that learning as their expertise develops through near-repetition of similar but contextually different tasks, '*deepening ability through practice* (Sennett, 2006, p.106) such that the expertise becomes one of intuitive as much as analytical decision-making and as much about noticing what doesn't happen as what does (Gladwell, 2006). It is, as Feeny and Willcocks (1997, p.467) argue, through having '*a lengthy immersion in IS* [that] *enables the individual to build mental models which capture the fundamentals and provide a lasting base from which to interpret new developments*'. Such lengthy immersion develops the worker's 'stock of knowledge'. Without such 'lengthy immersion' resulting in the development of personalised experientially-acquired and contextualised knowledge, the task that is not subjectively complex to the worker reveals itself to be objectively complex (Campbell, 1988) and consequently problematic to the ITSM manager

relying upon a methodology that aggrandises the anonymisation and interchangeability of human resources whilst seeking process efficiency.

The data suggest that IT service support workers are resistant to homogeneity and not readily interchangeable. Therefore, as a control mechanism (Akella, 2008), the learning organisation philosophy (Senge, 1992) does not readily lend itself to the sphere of IT service support work because of the work's reliance upon the complex synthesis of contextual and theoretical knowledge built up over time in the heads of individuals. The management at Server Control had acknowledged this 'problem' of the organisational reliance upon experience. As manager of the IT service support workers, Nigel was adamant: to '*get people in with red hot skills… wouldn't be sufficient*'. What had already been individually learned *in situ* was recognised as being of greater value than what might have been learned outside of the organisation. Similarly, Lauren's (STOB) comment about her team comprising of workers recruited from different specialist divisions of the company points to the deep contextuality of that team's work and the team members having both individually and cooperatively developed and shared deeply contextualised 'stocks of knowledge' that when combined were a bespoke fit to meet a range of organisational support needs. Clearly, as indicated by Laura when she said: '*I would hate to be a person coming in from the outside world having to fit into our team*', continuity of skills capability, where those skills are highly contextualised, is a key issue for management in such circumstances to ensure that organisational needs can continue to be met into the future.

The ITSM 'best practice' emphasis on short-term needs, coupled with an emphasis on management control and workforce depersonalisation, conspire against the implementation of mentoring schemes of the sort advocated by Sennett (2009) that are designed to encourage steady worker learning and development towards expertise. And, indeed, no formal mentoring was observed at any of the sites visited. Nor was there any evidence of any succession planning that might entail a programmed approach to developing the contextualised expertise that the organisations relied upon. Rather, as we previously discussed often (most typically for Type 1 workers) hierarchical barriers were strategically placed to prevent such development, resulting in a

lose-lose situation: the workers didn't develop their expertise; and the organisation failed to mitigate against the risk of loss of expertise. By strategically encouraging a broadening of work experiences, the range and depth of expertise available to the organisation increases. The implication becomes one of the workforce becoming a set of uniquely experienced workers developing differently through exposure to different work, rather than one that is rationalised by management into clones with tightly-defined job descriptions. It is suggested that it is by broadening the experience of workers they might move from a state of 'arrested development' (Ericsson, 2008) through a state of 'learning by knowing the same' to a state where they are open to 'learning by knowing differently' (Antonacopoulou, 1999). We might consider a contrast between the learning experiences of the observed workers at UKHEE and Server Control. The workers at UKHEE were highly restricted as to what they could do before they had to escalate incidents and as such their development was frustratingly slow. By contrast the experience of the workers at Server Control had a high level of mental autonomy as well as other opportunities to experiment with technology through project work. Whereas as for the former, as each day passed they failed to become significantly more expert with their development restricted, for the latter, as each day passed they developed towards greater expertise, thus enabling them to better 'morph and slide' as necessary and be more open to 'learning by knowing differently'. Nonetheless, within this non-longitudinal study, observational evidence of 'learning by knowing differently' was scant with John's work that was associated with Poyet's virtualization project being a notable illustration of an IT service support worker choosing to engage with emerging technologies using his historically-acquired 'stock of knowledge'.

A management policy of succession planning (e.g. Munro, 2005) within IT service support functions/teams is suggested as being appropriate within a broad-based talent management policy that serves to ensure an organisation's ability to sustain an effective knowledge base (Scullion, Collings and Caligiuri, 2010). Such planning might be used to mitigate the risk of loss of contextualised expertise from the organisation should an individual leave the team. This planning might in part entail the encouragement of Communities of

Practice (Lave and Wenger, 1991) which mirror the craft workshop of master, journeyman and apprentices, and indeed there were signs that workers in the observed teams were inclined to adopt these roles. So, for example, Roger (SCCS) reported on his role as the person that inexperienced people went to if they needed to know/learn something (master: apprentice) and defined Carl as a worker who just got on with his work (journeyman). Similarly, Lauren (STOB) regularly went to Neil for advice. The point is that these were autonomously chosen interpersonal relationships within a community setting. The 'personal' is what is key to the development of knowledge for organisational use, thus enhancing organisational efficiency. This is in stark contrast to the 'community under management control' implicit within ITSM 'best practice' (Taylor, Lacy and Macfarlane, 2007). These interpersonal relationships may not result in efficient rationalised knowledge transfer directly related to the task at hand but are likely to be of organisational benefit that is resistant to being quantifiably evidential. The obsessiveness with their ‘craft’ of many IT service support workers, as illustrated by a desire to take on new challenges, experience new technologies and discuss them with colleagues, inevitably leads to learning that may not be immediately useful, but may be part of a culture that ensures that there is a healthy flow of knowledge between workers. Examples of these cultural norms were the ‘storytelling’ of the ilk identified by Orr (1996) amongst photocopier engineers that was observed within the SCC Desktop Support Team, and the widespread use of the instant messaging application as a silent communication tool between workers at Server Control to transfer specialist knowledge from a locally acknowledged expert to assist a colleague with less specialist expertise in resolving an incident.

6 Conclusion

Building from the discussion on knowledge begun in Chapter 2 and the discussion on craftsmanship begun in Chapter 3, in this chapter data has been presented that reveals that, for most Types 2 and 3 IT service support workers, their personal ‘stocks of contextualised theoretical knowledge’ are in effect the

‘tools of their trade’, enabling them to engage with ‘objects’ and ‘events’ that confront them and bring about a changed state that profits their employing organization. As such they might be considered as archetypal knowledge workers meeting Hislop’s (2005) exclusivist definition that their work is primarily intellectual, creative and non-routine, and involves both using and creating knowledge. Because Type 1 work is revealed to be significantly more routine in nature and less intellectually and creatively challenging, such workers might be considered to not meet the requirements of this definition.

Autonomy was discussed as an important aspect of knowledge work and Types 2 and 3 workers were found to be able to mentally approach their problem-solving work as they saw fit, even if their work was otherwise placed under management control mechanisms. Type 1 workers’ work was found to be more controlled on account of time-bound processes that required them to routinely escalate work and it being subject to fragmentation by interruptions by customers. In the next chapter this relationship with the customer is examined in greater depth as the IT service support worker is conceptualised from a third perspective, that of service worker.

Chapter 5: The IT Service Support Worker as Service Worker

1 Introduction

The working life of the IT service support worker is one of constantly resolving tensions between conflicting roles, identities and perspectives. In Chapter 4 the focus was particularly on the conflict between a management mindset that encourages practitionership over craftsmanship and a worker perspective that highlights creativity and learning as being important for career maintenance and development. In this chapter this theme is expanded upon through the lens of literature pertaining to service workers who as a type have, in recent decades, grown at a faster rate than the workforce as a whole (Frenkel, 2006).

The chapter begins by seeking to conceptualise service with particular reference to how the word is used within the ITSM context. There is a differentiation made between service as a personal activity with an emotional element and service as a rational dehumanised system. Within this discussion a tension emerges between the IT service support worker's engagement with the customer service aspects of their work vis-à-vis the technological aspects.

The chapter continues with a discussion on the characteristics of a service with particular attention to services provided by IT service providers. The chapter then moves into a discussion on the customer-oriented approach to business and specifically IT service provision. In particular this discussion examines the tensions that arise as: (i) the service providing organisation, (ii) the customer organisation, (iii) the worker directly providing the service, and (iv) the worker directly receiving the service, all covertly struggle with each other to fulfil their different needs and desires. An argument is presented that the IT service support worker, particularly the Type 1 worker, may lose out in this struggle. Specifically, linking this chapter to previous chapters, they lose out in terms of their personal knowledge and career development as technicians and

more generally in terms of their job satisfaction. Interview data are then presented relating to aspects of the IT service support worker experience that have relevance for a conceptualisation of them as service workers. Firstly, work intensity is considered in the light of worker testimony to the extent to which IT service support work is time-pressured. Secondly, the extents to which workers interact with customers and are customer-oriented are considered. The data here testify to the extent to which workers' everyday activities are oriented away from themselves and towards the people they are tasked with providing services to. Thirdly, evidence of the HRM practices impacting upon IT service support workers is considered such that a view might be taken as to the extent to which they operate under those HRM practices that have been associated with service work within the business literature. Specifically, data are presented relating to: (i) service culture; (ii) team working; (iii) support systems; (iv) recruitment; (v) training and development; (vi) rewards and recognition; (vii) performance management, and (viii) empowerment/autonomy. Fourthly, interpretations based on data are made about the tensions between the fulfilment of the respective needs and desires of service providers and service workers.

A discussion section follows this in which this presented data are related to the earlier discussion to elucidate the conception of IT service support workers as including an important element of being a service worker to different levels of servitude.

2 Personal Services versus System Service

As is suggested by the label, an IT *service* support worker might be considered to be a type of *service* worker. But what contextually is meant by 'service'? Firstly, it implies a transaction between a giver (service provider) and a receiver (service customer). Secondly, Ritzer and Stillman (2001, p. 105) have argued that '*customer service is becoming more and more rationalised ...* [or] *'system-oriented' ... [in contrast to] the more traditional 'person-oriented' service*'. They argue that this has resulted from the replacement of humans with

non-human technology. And yet, as was discussed in Chapter 3 humans are an integral part of information systems (Simon, 2000; Doherty, King and Al-Mushayt, 2003). The humans have not all been replaced by technology; they are critical to its use (Kanter, 2011a), giving '*context, meaning and life*' to information (Cenatiempo and Casey, 2010, p.14). However, through the adoption of rationalising management practices based on systems thinking (e.g. ITIL), workers have become invisible and/or anonymised by design. And yet still within the ITSM context service is conveniently used in both these two senses: establishing rational corporate control whilst, at the point of real-time interpersonal service interaction, maintaining an historically and culturally-founded and idealised perception of caring intimacy.

Service might be conceived of as being personal. Across all forms of work, paid and unpaid, the notion of selfless *service* bringing its own rewards might be said to remain strongly rooted in human cultural traditions including those of humanitarianism and across Abrahamic, Indian and folk religions. Representative of such traditional thinking are the recent words of His Holiness the 14th Dalai Lama (2011): '*If you serve others as fully as you can… putting [their] needs above [your] own… what you do will be a source of inner joy*.'

According to different dictionary definitions (OED, 1989) 'service' in this personal form may imply various forms of work. Firstly, service work may be perceived by the servant as being in the service of a deity or a perceived spiritual 'superior'. Secondly, as in 'domestic service', service work might be that carried out by a paid-servant in obedience to and for the benefit of a master/mistress or socio-economical 'superior'. Whilst there are clear differences, notably in terms of the workers' intrinsic and extrinsic rewards for the service work, the commonality between these two forms is the readiness to humble oneself and obey commands (be that of a worldly or spiritual 'master'). There are other forms of individual service work. There is that that might be performed for another simply out of a sense of love, altruism or community duty, bringing the intrinsic reward of being 'meaningful' to the worker. Additionally, in the UK criminal justice system, 'service' has been appended to the word 'community' to provide a label for a particular form of individual social reparation, implicitly against personal will.

If personal service implies the fulfilling of the human needs or desires of another, then the good neighbour who cuts the lawn for the elderly man next door and the husband who cares for his sick wife are service workers as are teachers, nurses and prostitutes. Similarly, customer-facing IT service support workers (notably Type 1 workers) might directly engage with the needs of IT users who have contacted them to report incidents. In doing so, they may, in large part, construct 'professional' identities around their skills at serving the needs of customers. They might also seek (and/or be encouraged) to prioritise developing interpersonal skills over and above technological skills (Marks and Scholarios, 2006). However, workers whose work is more isolated as they receive via their computers anonymised work tasks to investigate and resolve incidents (notably Type 2 workers) might have only a tenuous concept of *personally* providing a service to another person. The service they provide is less emotionally-laden with an emphasis on rational thinking rather than the need to concede to the '*conscious manipulation*' of their emotions and behaviour to please or appease the service recipient (i.e. customer) (Frenkel *et al*, 1999, p. 17). Further, as discussed in Chapter 3, they might prefer to be identified as an IT technician rather than as a service worker on the grounds of perceived status. This reveals a tension for IT service support workers in their careers: the extent to which they engage with the '*aspects of customer service work [that] are creeping into the [IS] profession*' (Marks and Scholarios, 2006, p. 31) at the expense of an engagement with the constantly changing technological dimension of the work (i.e. the development of marketable IT skills). Having recognised the need to *'slide and morph*' in their IS careers, a management emphasis on customer service might inhibit their capability to do so. For example, by emphasising quick resolution of incidents via established workarounds, workers might be restricted in their ability to have a deep engagement with the underlying technological issues.

In the public sector, it might reasonably be argued that the historically-founded communitarian notion of doing 'public', 'civil', 'health', 'social', 'military' etc. *service* with little or no consideration of the profit motive remains in many respects resistant to the neoliberalist agenda of privatisation and withdrawal of the state from social provision (Harvey, 2007). This suggests that the concept

of *service* work is socially as well as economically pervasive. From this there emerges a potential tension between a communitarian perspective taken by a public-sector IT service support worker as they serve a customer and the perspective of their senior management whose sense of *service* is constrained by economic considerations, and influenced by 'best practice' that in its rationality is implicitly supportive of neoliberal thinking.

The second sense of service is the 'system' or 'corporate' sense. Traditionally economics uses the adjective 'service' (or services) in a system sense to differentiate a 'service(s) sector' which does not produce tangible goods from agricultural and manufacturing sectors which do (Korczynski, 2002). It has been reported that this 'services sector' accounts for 75% of the UK economy (Battisti *et al*, 2010; Elliott, 2011). There is little agreement on a definition of service even within the context of a 'system' rather than 'personal' meaning (see Battisti *et al*, 2010 for a discussion on various definitions). In its categorisation of industry into 41 different sectors the London Stock Exchange liberally uses the word '*services*' in this system sense with various implications as to meaning (LSE, 2011)[10]. Even if we put aside the consideration that a worker is typically employed to '*serve*' the needs of her employer (even if she is manufacturing widgets), clearly a worker (and specifically an IT service support worker) who *serves* the needs of customers might work across all these sectors. For example IT service support workers might work at *servicing* the IT infrastructure of a company that is engaged in the *manufacture* of motorcars or at *servicing* the needs of IT users working for an industrial-scale turkey farm within the *agricultural* sector. As was discussed in Chapter 3 IT has established itself as being pervasive and fundamental to business and governmental practices. Organisational IT operational needs are being fulfilled by IT service support workers across all sectors - however the industrial landscape is divided up. This IT service provision may be internal to the organisation or external involving relationships with other organisations. It is therefore problematic to site the IT service support worker within the service (or services) sector. In the

[10] 7 of 41 industry sectors include the word services: financial services, healthcare equipment and services, oil equipment and services, real estate investment and services, software and computer services and support services.

resource-based view of the firm the IT service support worker might work as a human resource to ensure the provision of manufactured goods and agricultural output, as well as intangible business services.

To retain our focus on the IT service support worker we need to at this point remind ourselves that information systems are created and enhanced to: (i) improve *services* that help organisations to carry out their business more efficiently or competitively (Simon, 2000), and (ii) *serve* people taking action in the real world (Checkland and Holwell, 1998). From a systems perspective, IT service support workers, as human resources, *serve* not only within information systems but also indirectly the business systems that are served by those information systems, and any other business systems served by those business systems. For example, an IT service support worker might serve an information system by repairing a vital IT component that enables an upholstery supplies company to use computer-aided design (CAD) and manufacturing technology to create bespoke fabric. This in turn enables a furniture manufacturing company to produce bespoke furniture, and the retailer to fulfil an order taken from an end customer. It might be said that the IT service support worker has personally *served* the systems of each of these three independent businesses, and several people taking action in the real world, through her one action of repairing the faulty IT component. Equally, by working as a resource/capability within the information system, she has contributed to the system service provided by the IT service provider that employs her. The task the worker performs is pivotal to the working of: (i) the IT system, and (ii) those business systems that are dependent upon the IT system. It is also pivotal to the fulfilment of customer service to workers within (or business users of) each of those business systems and the 'end customer' (i.e. the buyer of the bespoke furniture).

In its system sense, *service* might be specifically related to the provision of technological capabilities. Over a century ago, reference was being made to the difference between a telegraph and telephone *service* (Shaw, 1904, referenced by OED, 1989). Related to this, a specific system and technological dictionary definition of service is provided by the OED (1989). This definition points to the '*expert advice or assistance given by manufacturers*', and specifically '*to the*

provision of maintenance or repair work'. This takes us into the realm of *customer service* as it might be provided by individual IT service support workers who are anonymised as functionary resources in the system provision of service. The service management perspective is not personal but one in which service is considered to be '***the*** *organisational imperative*' (Grönroos, 1993). It is this system and technological meaning of service that is upheld within the field of ITSM as illustrated by the set of definitions listed in Table 5.1

Definition of Service : ITSM Perspectives	Reference
'A means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks.'	Taylor, Iqbal and Nieves, 2007, p.249
'An integrated composite that consists of a number of components, such as management processes, hardware, software, facilities and people, that provides a capability to satisfy a stated management need or objective.'	Evans and Macfarlane, 2001, p.76
Service: '*One or more IT systems which enable a business process*' Services: '*The deliverables of the IT Services organisation as perceived by the customers; the services do not consist merely of making computer resources available for customers to use.'*	Bartlett *et al*, 2001, p.327-328

Table 5.1: ITSM Definitions of Service

It is this sense of 'system' service that shapes the IT service support worker as an anonymised service resource rather than a 'personal' servant with agency over their obedience or altruism to another. Obedience is assumed. Altruism is deemed inappropriate since the system service levels, agreed at a corporate level between service provider and a corporate customer, are assumed to determine the quality and quantity of work delivered: '*IT and customers have a clear and consistent expectation of the level of service required*' (Bartlett *et al*, 2001, p.29). These specifications are detailed in a Service Level Agreement (SLA) which is '*effectively a … warranty with regard to the level of service quality provided by the service provider for each of the services delivered to the business*' (Taylor, Lloyd and Rudd, 2007, p.65). The

SLA can thus be seen to act against the worker aspiring towards greater expertness by encouraging a practitioner mindset where workers are clear as to what level of service they should provide: no less because the provider would be in breach of the SLA, and no more, because the provider would be wasting resources (i.e. the paid-for time of the worker).

This differentiation between the 'system' IT *service* and the 'personal' IT service support *service* is important for our understanding of the IT service support worker as a service worker. As discussed in Chapter 3, their role within the ‘system’ IT service is that of anonymised resource and capability contributing to the overall provision of the IT service. The system IT service might be conceived as being provided collectively by a set of human, technological and other assets for the benefit of a corporate or individual customer. By contrast the ‘personal’ IT service support *service* might be conceived as being provided by the worker personally for the direct benefit of another human: there is an interpersonal exchange, with the IT service support worker *serving* the IT user who has reported the incident (Figure 5.1).

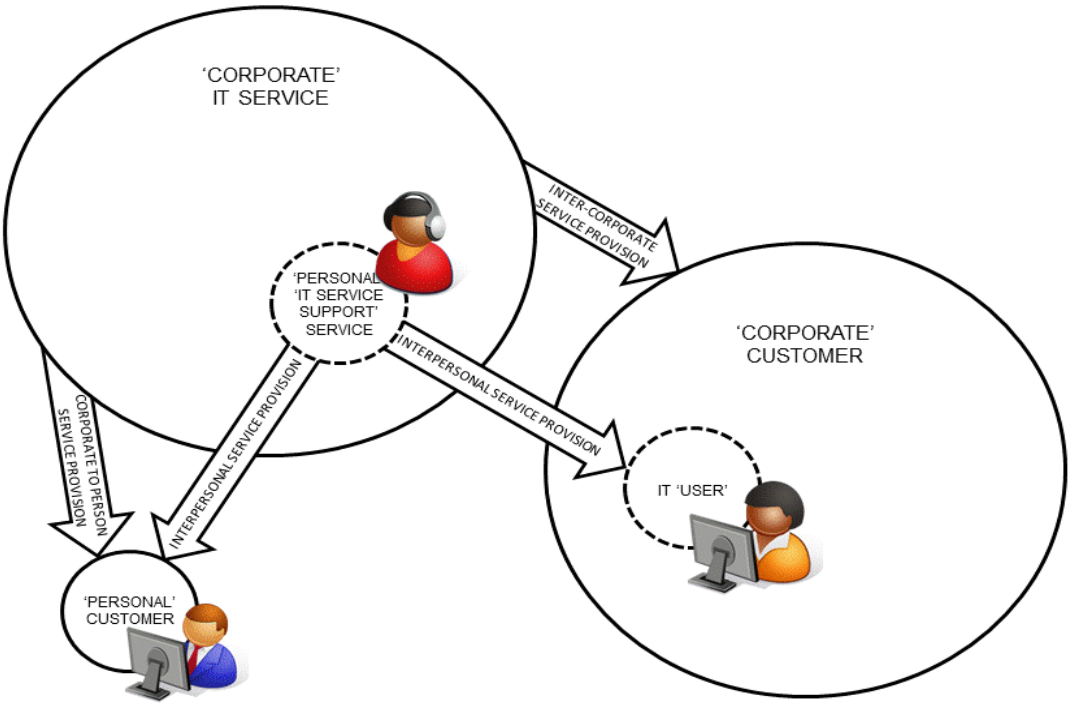


Figure 5.1: ‘Personal’ ‘IT Service Support Service’
provision shown as part of ‘System’ ‘IT Service’ provision.

This diagram can be explained by way of an example. An IT security company offers anti-virus and related services to personal (i.e. individual) and corporate customers. A feature of this service is a 24 hour 'service support' service. When a representative from a corporate customer – let's say a logistics company - telephones for service support they can be said to be receiving an interpersonal service from the IT service support worker. Simultaneously it is equally true that the IT security company and the logistics company have an inter-corporate service relationship. When a personal customer phones for support they likewise receive an interpersonal service from the IT service support worker. This service might be said to be provided simultaneously by the corporate employer of the IT service support worker as part of their broader IT Security service. This relationship is therefore one of corporate-to-person service provision. Thus, IT service support workers can be conceived of as service workers because they provide a personal service to another human and because they are an essential part of a rationalised system designed to provide a service to another rationalised system.

3 Service Characteristics

Particular characteristics or attributes have been associated with a service to differentiate it from a non-service [e.g. a product] (Korczynski, 2002; van Bon *et al*, 2008). These include:

- Intangibility
- Simultaneous Consumption and Production
- Perishability
- Customer Involvement /Inseparability
- Variability
- Satisfaction measurement post-delivery

The attribute most commonly associated with a service is that it is intangible, *vis-à-vis* a product, which is tangible. Whilst tangible elements (e.g. hardware) are involved in providing a service, there is an intangible element that cannot be

touched or weighed. When an IT service is first made available to a customer, it might be regarded as a 'virtual' product delivered (or ‘handed over’) at a moment in time. As it is used, the service becomes integral to the customer's business processes and to some extent 'invisible' to the customer as a distinct entity. For example the provision of a broadband service to a customer becomes an invisible part of their everyday processes by which they communicate internally and externally. The loss of such an IT service in a sense makes it visible again as a distinct entity, apparent to the customer because their everyday processes have been disrupted by its absence. In such a circumstance the activity of IT service support workers might be loosely seen to be one of restoring the service as a 'virtual' entity for use by the customer again.

Let us now consider the characteristics that services are produced and consumed at the same time, and perishable. In ITSM settings a working 'service' is typically provided on an ongoing basis according to an SLA. As it is provided, so it might be consumed. Taking again the provision of a broadband service, it may be available for 24 hours a day but may not be used at all times. Nonetheless, the time not used cannot be stored. That time has gone and with it the service of that time has perished. However, the work of the IT service support worker may not necessarily have this temporal specificity. It is true that the first-line service desk (Type 1) worker may necessarily engage in a transactional conversation with a customer at the point that an incident is reported and possibly resolve the incident there and then. In this case the service desk worker is 'producing' an incident resolution service at the same time that the customer ‘consumes’ it. However, typically incidents may be logged and assigned to a second-line (Type 2) worker who will prioritise their workload, stockpiling the tasks in much the same way that a production worker might. Thus theoretically the 'system' IT service might have a characteristic of simultaneous production and consumption when it is operational, but the 'personal' service provided by the IT service support worker may indeed show a clear buffer between their incident investigation, diagnosis and resolution activities and the subsequent activities of the customer once they have been informed that the incident has been resolved.

Another typical attribute of a service, related to simultaneous production and consumption, is the inseparability of the customer from the service provision. Because of this the quality of the service is influenced by the customer (van Bon *et al*, 2008). At the level of the 'system' IT service, the service-recipient must be able to make appropriate use of the service being provided. For example, where an organisation 'buys in' an IT security service comprising hardware, applications and support but retains internal working procedures that compromise IT security, there may be a perception that the quality of the IT security service is poor. The integral involvement of the customer is especially acknowledged by IT service support workers in the provision of 'personal' service to an IT ‘user’. Often an incident reported by a 'user' can be resolved by educating that 'user' in how to use the service; the service may not have actually failed but rather the 'user' did not know how to use it. Increasingly, as technology evolves to meet demands for further rationalisation, ‘users’ are incentivised to use ‘self-service’ support tools in the same way they are incentivised to use self-service checkouts at supermarkets. These effectively ‘cut out the middleman’: the ‘middleman’ being the IT service support worker. In such scenarios the 'system' service provides non-human resources (typically web-based or impersonal telephone navigation tools) that theoretically enable the 'user' to resolve their own issues without the need to consume the more expensive resource of human time. This is represented at Figure 5.2 as a refinement to Figure 5.1. Such self-service is typically supported by an alternative 'personal' service for when self-service does not fulfil the customers’ needs.

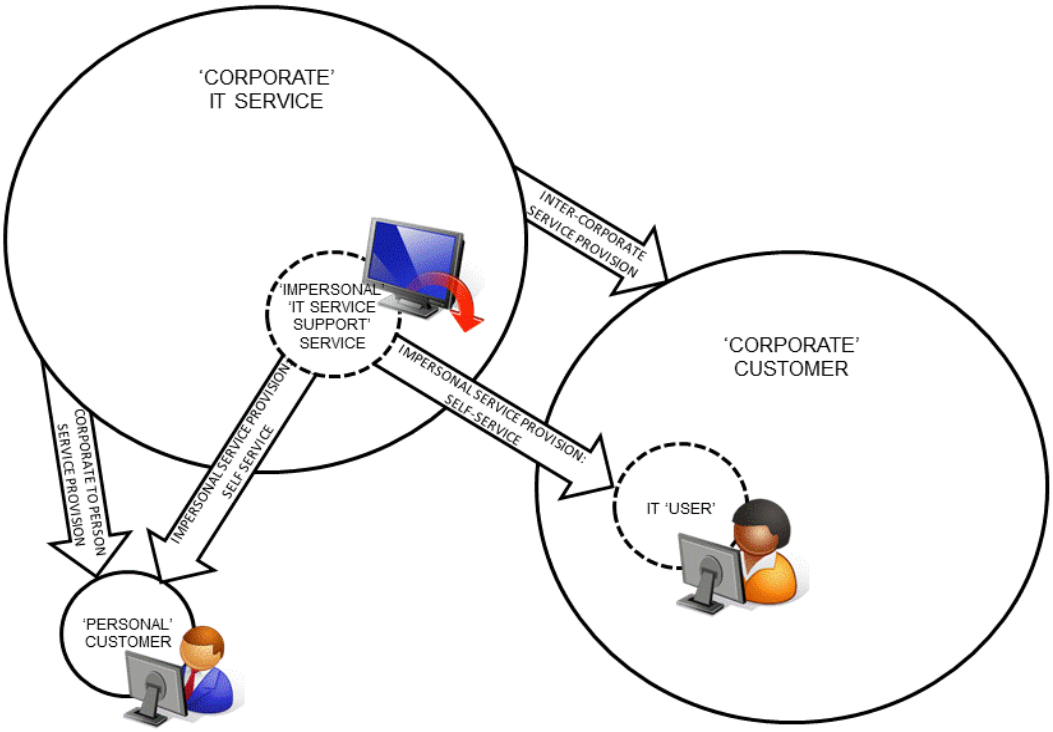


Figure 5.2: 'Impersonal' 'IT Service Support' Service provision (Self-Service) shown as part of 'System' 'IT' Service provision.

Because of the reliance on human qualitative perception and reasoning, services are said to be more obviously variable than products where variability can typically be more closely controlled. This variability tends to be more noticeable at the lower level of 'personal' service '*because customer perception of service may vary by individual*' (Korczynski, 2002, p. 6) and because '*a helpdesk employee ... may be quite unfriendly in the first hour of his shift, but after a cup of coffee, his mood will be much improved - as will the service*' (van Bon *et al*, 2008, p. 14). At the 'system' level service variability may not be so apparent. At this higher level, the service is tightly defined and agreed to ensure a common (i.e. invariable) understanding of 'the service' being provided. There is an implicit anonymisation of not only the IT service support workers but also the IT users who report incidents, and assumptions are made about typical transactions between typical IT service support workers and typical IT users. Metrics are then used to monitor the service such that a quantitative indication might be provided as to its consistency and efficiency. The directive to

managers, reflecting the implicit anonymisation of the worker within ITSM ‘best practice’, is to measure and encourage consistency of personal service provided by IT service support workers.

Unlike with a tangible product, quality or acceptability of an IT service can only be measured after the customer has received (or consumed) it: ‘*services can only be judged after delivery*’ (van Bon *et al*, 2008, p. 14). This might be said to apply at both the 'personal' level of an interaction between IT service support worker and ‘user’ and the 'system' level between an IT service provider and a customer. Because the ‘IT service support service’ is part of the overall IT service the former might be regarded as a contributory factor to the latter.

4 Work Orientations: ‘Customer versus Service Provider' and 'Individual versus Corporate '

Having discussed at some length how we might understand 'service', it is now important to discuss it further in the context of the often taken-for-granted phrase 'customer service'. From 1960 onwards, Theodore Levitt (2006, including extract reprint of 1960 article, p. 129) was advising managers to ‘*push this idea [of providing customer-creating value satisfactions]... into every nook and cranny of the organisation... continuously and with the kind of flair that excites and stimulates the people in it.*’ This customer-centric approach to management has taken hold in mainstream management practice with perennially popular practitioner-oriented management books (e.g. Peters and Waterman, 1995; Samson and Challis, 1999) frequently asserting the importance of being customer-oriented for organisational success. This customer service mindset that notionally accords hegemonic status to the customer (Dupuy, 1999) has permeated to the UK public sector such that people, identified through state mechanisms as being in need of intervention by local authority social services and probation departments, are accorded customer status as 'clients', even though they may not have chosen to be service recipients.

Whilst focused on the efficiency of the IT service provider and meeting corporate objectives (van Bon *et al*, 2008) ITSM ‘best practice‘ philosophically adopts a customer perspective rather than a technological perspective to business IS (Galup and Dattero, 2010): the IT service provider delivers ‘*value to **customers** by facilitating the outcomes **customers** want to achieve without the ownership of specific costs and risks’* (Taylor, Iqbal and Nieves, 2007, p.249). The centrality of the customer is clear in the words of the CEO of the ITSMF: ‘*Good ITSM is absolutely essential in differentiating a properly **customer** focused business from one that is not*’ (Aldis, 2009, p.10).

Drawing on ‘*the customer-focused principle of quality management*’, the ISO 20000 ITSM standards include a nine-step customer satisfaction management process which advocates the implementation of a continual service improvement plan (SIP) based solely on customer feedback (van Bon *et al*, 2008, p. 143-145). The clear implication is that IT service support workers have nothing of value to offer in terms of feedback on the system and services they support. Their close-at-hand views are not seen as being relevant for consideration within the SIP mechanism even though they work intimately with and within the system every working day. According to these 'best practice' standards the customer’s 'corporate' view as an anonymised amalgam of the individual views of IT users working for the corporate customer is explicitly asserted as the key driver of service improvement. The IT service support worker, as an anonymised resource employed on account of specific capabilities is, according to the implied theory, not 'available' or ‘resourced’ to demonstrate a ‘not-budgeted-for‘ capability to apply critical and innovative thinking skills such that they might contribute to service improvement. Implicitly, the theory is that the rationalised IT service support worker is not employed for this purpose and allocating time for such considerations has a cost whereas the customer pays for the time of its employees. This may represent a flaw in ITSM ‘best practice’: by contemptuously overlooking the local and contextual knowledge of the workers, the opportunity to improve efficiency and innovate may be lost (Hayek, 1945; Harford, 2012; Trusson *et al*., 2013).

ITSM 'best practice' as documented in ITIL points to a direct correlation in most organisations between the availability of the 'system' service and

customer satisfaction (Taylor, Lloyd, and Rudd, 2007). However, the core message of ITIL as regards customer service is directed to IT service managers with responsibilities for staff providing 'personal' service:

> *It is important that all staff involved in delivering service are committed to the concept of customer delight ... [This] will only be achieved if [staff] are responsive to their customer's needs, are attentive, reliable, and courteous* (Berkhout *et al,* 2000, p. 21).

The use of customer satisfaction surveys as a veiled form of surveillance, particularly of Type 1 workers, is advocated by ITIL to cement a working culture of customer-oriented 'personal' service (Taylor, Cannon and Wheeldon, 2007).

It follows that ITIL, as the hegemonic ITSM practice, is, as Korczynski (2003, p. 269) said of TQM, a clear manifestation of the rise of consumer authority within organisations with '*images of specific human beings in specific interactions*'. Whilst this image may represent the reality, and indeed this research focuses its attention on the IT service support worker at the point of service provision, the importance of the specificity of the human being is underplayed within the ITSM literature. Rather, as we have discussed, the worker tends to be marginalised and anonymised within the 'best practice' guidelines. They are reduced to a soulless shell embodying service-relevant capabilities to a quantifiable standard. As such they might be used as a resource to meet precisely defined needs of the organisation. The image is of the IT service support worker squeezed out of the picture by a 'corporate' conspiracy between the service provider and the customer. As corporate bodies, they tacitly conspire to resolve the tension between the meeting of their respective organisational needs by agreeing to a rationalised corporate-oriented practice centred around the implementation of an SLA. Such practice implicitly disregards the human needs of the IT service support worker such as the need to find meaning or purpose in their work (Gratton, 2000; Burgoyne, 2011) and the need to work without suffering undesired mental stress.

Clearly, the orientation of work towards meeting the needs of the customer is important, both from the 'personal' service perspective and the 'system' service

perspective. But it is also important to consider the same work as instrumental in fulfilling the needs of the ‘system’ service provider and the worker(s) actually carrying out the work of the ‘system’ service provider.

The placing of the customer on a pedestal to encourage their loyalty (Heskett *et al*, 1991) is as much a conscious management technique within ITSM organisations, founded upon a ‘*powerful, neo-liberal concept of the sovereign consumer*’ (Sturdy 2001, p. 3), as it is a reflection of customer assertion of their power as service choosers and receivers. The job of the service provider’s operational managers becomes one of resolving the tension between the needs of the service providing organisation (particularly to make a profit and/or operate effectively within a set budget) and the needs of the 'corporate' customer (particularly to receive a high quality, value-for-money service). In resolving this tension there is potential for the needs of the workers involved in service interactions (within both organisations) to be squeezed out of the negotiations and consideration. In the case of the IT service support worker, this 'squeezing' has the potential for undermining the meaningfulness and developmental nature of their work.

Figure 5.3 illustrates the tensions between the fulfilment of the distinct needs of the individuals involved in a service transaction, and the needs of their respective corporate employers. The diagram is illustrated using the example of the IT service contracts between Her Majesty's Revenue and Customs (HMRC) and Cap Gemini (Nguyan, 2012). Focusing on the IT service support worker, there is a potential tension between her need to develop her skills through deep investigation of the incident and her employer’s need for work to be completed as quickly and pragmatically as possible (T1). There are also potential tensions between the IT service support worker’s need to best-prioritise her workload for organisational efficiency demands and the individual customer’s need to have his incident resolved immediately (T2); and between her need to follow those procedures specified for her to follow and the customer organisation’s need for a more flexible approach to be taken (T3). Similar tensions, outside of the scope of this study, will exist between the needs of the individual customer and the needs of both corporate bodies with whom he has person-to-corporate relationships (T4 and T5) and between the needs of the two organisations (T6).

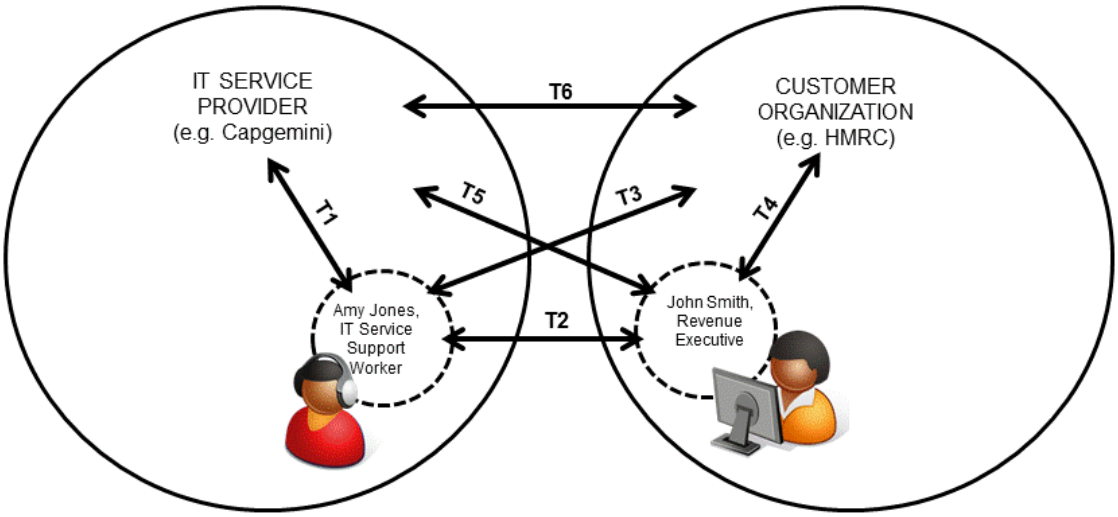


Figure 5.3: Matrix showing tensions between potentially competing needs.

This tension for the worker of considering the dual needs of two authority entities, the employing organisation and the customer, might be merged with another worker tension identified by Gouldner (1957) between an orientation to the organisation (referred to by Gouldner as 'locals') and an orientation to the occupation (or 'cosmopolitans), to produce a tripartite tension model (Figure 5.4) similar to that proposed by Kinnie and Swart (2012).

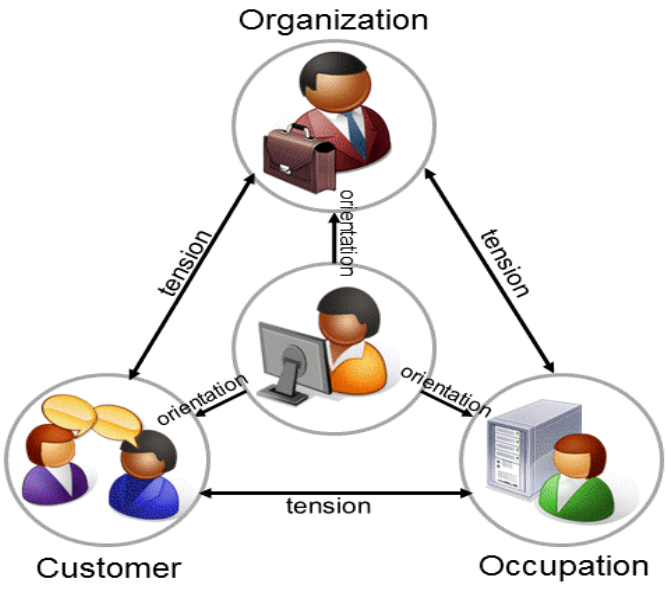


Figure 5.4: Individual IT service support worker orientations

The model serves to illustrate how the motivations of the IT service support worker might be oriented to different degrees towards the employing organisation, IT as an occupation (or profession) and the customer. In line with Schein's (1972) 'complex man' perspective on the interaction between the individual and the organisation – i.e. the worker has a complex hierarchy of motives which varies over time - it is argued that all IT service support workers have all three of these conflicting allegiances (Dawson, 1996) but with different degrees of emphasis dependent upon their individual motivations at any given time. Within this tension there is, as Noon and Blyton (2002, p. 193) observe the potential for workers to become '*self-estranged - detached from their own 'real' feelings - which ... might threaten their sense of their own identity [causing them] ... to feel false ... potentially leading to ... cynicism and alienation from work*' (Noon and Blyton, 2002, p.193). Cynical workers, however skilled they might be at putting on anonymised corporate faces, may not optimally represent the organisation, nor optimally serve the organisation's customers. Such cynicism is also unlikely to serve them well in terms of career development.

5 Worker Servitude versus Worker Contentment

Having identified tensions affecting the needs and desires of IT service support workers, we might particularly focus on the tension between these and those of their employers (Figure 5.3, T1). The prioritisation of the customer's interests has implications for the operating mind-sets of the IT service support workers who 'must' relate to their customers as much as, if not more than, their supervisors as being authority figures to whom they are answerable. Indeed in an age where '*technology ... has become the great manager [and] ... skilled teams are increasingly self-managed*' (Gratton, 2011b, p. 36) through the establishment and maintenance of cultures of the Foucauldian Panoptican (Willcocks, 2006), the worker can be seen to *serve* the customer, *work for* the customer and *speak for* the customer. Where the IT service is internally provided it is also possible that they may empathise with the customer from the perspective of being a customer of the 'system' IT service themselves.

Korczynski (2003, p. 269) argues that this '*customer-related discourse has a greater moral imperative and energy than the market-related discourse*.' The IT service support worker's work becomes that in which they are socialised, trained and expected to accept and perpetuate '*the enchanting myth of customer sovereignty*' (Korczynski, 2002, p. 64) by prioritising their time such that the customer's needs come before their own. At the same time they are expected to act efficiently and productively for their employer, minimising time spent on activity that is unrelated to the objective entity of the customer's 'incident' that needs resolving to the service level agreed in the SLA. The demonstration and development of expertness at their craft is thus marginalised in terms of its importance. This has implications in terms of worker alienation as the opportunity for creativity, and through that craft development, is potentially stifled (Layard, 2006; Hodson and Sullivan, 2008) as is the scope for convivial and egalitarian (as opposed to subservient) human sociability. The theoretical result is that the worker, grasping for meaning in their work, seeks it through customer satisfaction, humbling themselves in the 'personal' servitude of others, rather than by developing themselves through the pursuit of 'personal' expertise within a specialised IT career. Thus, at its extremes, work becomes the daily grind of developmentally-repressed servitude, serving the needs of both employer and employer's customer rather than an aspirational journey of an artisan developing towards mastery.

This tension between the possibilities of servitude and self-development is an example of Korczynski's (2002, p. 75) assertion that '*the experience of front-line work is best conceptualised in terms of tensions, spaces and fine lines*'. Within the specific and real-time service interaction between the service worker and the customer he particularly highlights the tension between its economic and social dimensions. These dimensions are conceptually presented at Figure 5.5 (top half of the radar diagram), with a differentiation made between the social dimension that is convivial (i.e. being social with colleagues) and that that is subservient to the customer. The bottom half of the diagram highlights the tension between a worker finding satisfaction at work through being able to personally develop through creative challenge and the efficiency mechanisms

employed by an organisation (e.g. ITIL processes) that restrict the opportunities to do so.

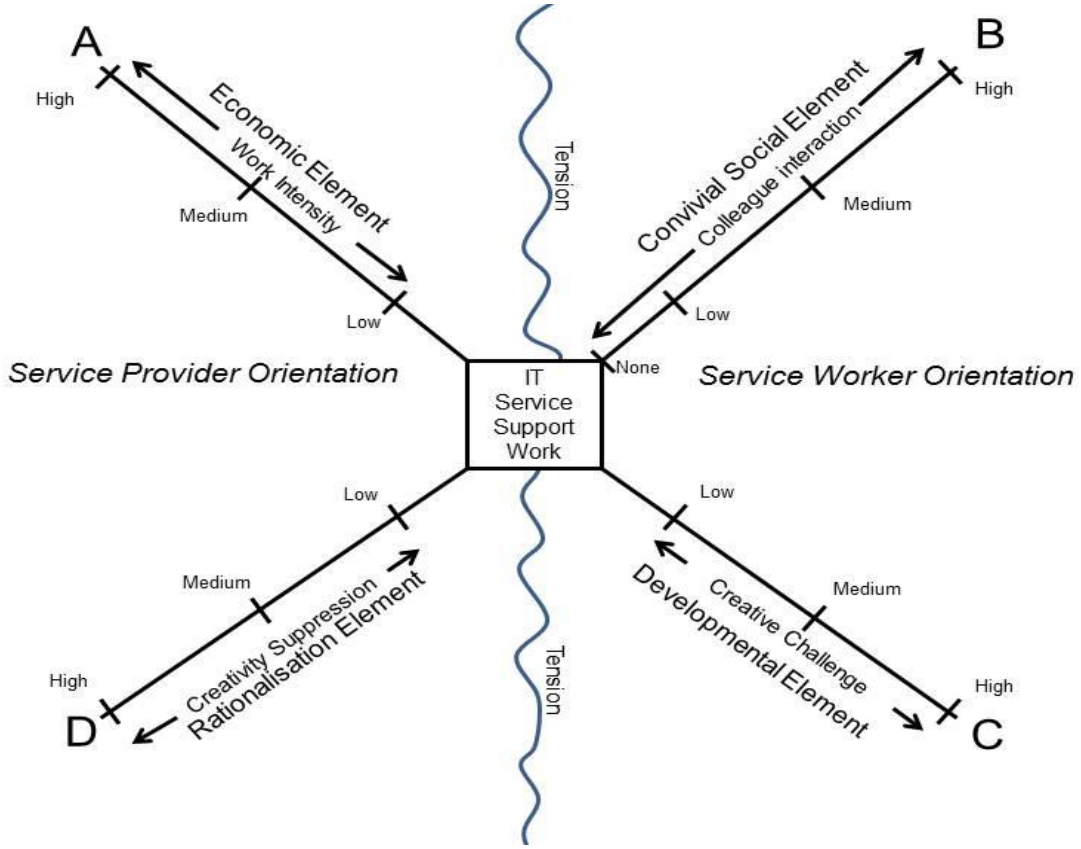


Figure 5.5: Tool for the analysis of the tension between the needs and desires of IT service support workers and IT service provider.

Work Intensity (Figure 5.5 – Spoke A)

Assuming the worker is an employee who has sold her time in the labour market, the economic element of the service interaction might be seen as being oriented towards the benefit of her employer (i.e. the 'system' service provider). Marx (1867a) argued that the very nature of competition compels employers to intensify the energy expended by workers. The management techniques by which this is done are clearly quantitatively-based as time becomes a measurable commodity (Adam, 2004).

As it is presented on the diagram, the more intense the work is for the worker (i.e. bearing a heavy workload within a restricted timeframe), the more the service provider benefits from '*systematically raising the intensity of labour*' (Marx, 1867a, p. 542) potentially at the expense of the worker's skills development and health (i.e. stress) (e.g. Kivimäki *et al,* 2012; Netterstrøm, 2012).

Where work is noticeably intensified through strict adherence to procedures and constant awareness of performance against targets, the worker might be reasoned to have less scope for developing their theoretical knowledge and thereby IS occupational skills. More likely, their labours, being firmly oriented in the direction of their employer, will result in the development of highly contextualised knowledge that is of limited value in the labour market.

Work-related psychosocial stress (job strain) of first-line workers has often been commented upon (e.g. Frenkel *et al*, 1999; Bunting, 2006) and has also been shown to affect IT workers working in highly disciplined organisations on time-pressured projects (de Jonquieres, 1987). Harmful psychological load at work has been shown to result from a combination of high demands and low job control and that this in turn results in a significant risk to physical health (Kivimäki *et al*, 2012; Netterstrøm, 2012). Such harmful job strain is particularly likely for the IT service support worker working on a busy service desk and/or resolving time-critical incidents under pressure from a whole bevy of pressurising forces from above: the supervisor; the 'supported' IT user; the client manager, and so on up and across the hierarchies of the service supplying and receiving organisations. Just as different types of work can be said to have different typified strain profiles (Netterstrøm, 2012), so different types of IT service support work will have different typified strain profiles. Type 1 work might be typified as combining high demand and low job control, thus defining it as potentially job-strain inducing. Types 2 and 3 work, offering greater levels of autonomy, might be typified as less so. However, because Types 2 and 3 workers' specialised skills might be required to address a major IT incident, they might often operate in situations where the demands upon them are great and where they have to gain control over a failed system against a backdrop of customer and management anxiety. Such work, requiring them to

be highly productive and customer-focused takes place within what Korczynski (2002, p.80) models as a '*customer-oriented bureaucracy [which captures] the dual imperatives in the organisation of service work - the need to be customer-oriented ... and to be efficient at the same time*'.

The longer term organisational consequences of a management focus on the maximisation of productivity in the short-term are not so beneficial. In the UK, workload, job insecurity, management style and organisational restructuring are major causes of stress at work, and stress in turn has recently become the most common cause of long-term absence (CIPD, 2011a; Netterstrøm, 2012). Workers, being humanly frail and emotional rather than the depersonalised, rationally consistent resources implicit within ITSM 'best practice', not only often become ill, they are also prone to resist covertly as well as overtly (see Sturdy and Fineman, 2001). For example, they may show a reluctance to engage in 'organisational citizenship behaviour' (i.e. showing a willingness to work conscientiously beyond mandatory task fulfilment) (Chang *et al*, 2007). Further, as Korczynski (2002, p. 74-75) asserts: '*systematic labour-stretching may lead to increased turnover [and]… to increasing dissent*'. The flipside of staff turnover is staff retention over a long period of time. Michel *et al* (2009) have identified an unresolved organisational tension between service organisations' propensity to focus on the short-term and customer loyalty being founded upon the long-term on-going development of workers specifically engaged in service recovery.

Colleague Interaction (Figure 5.5 – Spoke B)

Social interaction with colleagues in relation to specific service interactions is conceived to be oriented towards fulfilling the needs of a worker to be in a convivial and co-operative community from which she might draw support and develop skills/knowledge, and in which she might establish a significant element of her identity. As it is presented on the diagram the greater the opportunity for social interaction with colleagues at work, the more the work is

oriented towards benefitting the worker at the short-term expense of the service provider.

Much of the IT service support workers' interpersonal interaction may be with customers. Whilst this is significant in terms of needs fulfilment, these are excluded from Figure 5.5 on the grounds that such interaction can be seen to offer fulfilment of worker needs but simultaneously alternatively act against those needs. Such interpersonal communication with customers, particularly in the high-intensity service desk roles, might be 'painful' for workers, requiring them to manage their own emotions so as to elicit positive emotions within customers, whilst also being exposed to negative emotions of irate customers (Noon and Blyton, 1997; Frenkel *et al*, 1999). However, communicating with customers can simultaneously fulfil the human need to feel connected to the real world rather than isolated from it. Thus this subservient social element of service interaction presents a tension in itself (Korczynski, 2002). Absorbing the 'pain' on behalf of the service provider is conceived as meeting the service provider's needs against the preference of the worker to not feel the 'pain'; and constructive and co-operative communication with another human is conceived as being generally life-enhancing for the worker.

Creativity (Figure 5.5 – Spokes C and D)

The lower half of the diagram serves to draw attention to the previously discussed tension between the development of craft expertness through opportunities to work creatively (service worker orientation) and the management 'best practice' of advocating a customer-oriented practitionership mindset that idealises the proceduralisation of work to a predetermined standard, thus suppressing the need for creative work.

Applying Tension Analysis Tool

The extent to which an IT service support worker might be conceived as being 'like' the typified oppressed service worker alluded to in the literature, might reasonably be assessed in terms of the extent to which she scores highly on the service provider side of the model (i.e. spokes A and D). Conversely the extent to which she might *not* be conceived as being like the typified oppressed service worker might be assessed in terms of the extent to which she scores highly on the service worker orientation side of the model (i.e. spokes B and C). The model is thus designed to assist in the qualitative analytical interpretation emanating from a consideration of the collected data.

6 Customer Satisfaction versus Worker Satisfaction

Related to the argument above that there is a relationship between work intensity and worker stress, it has also been argued that worker stress and alienation results when employees are not supported when dealing with complaining customers. This is part of a broader argument that '*links employee and customer attitudes*' (Michel *et al*, 2009, p. 259).

Writing about service management generally Barbee and Bolt (1991, p.31) give a *'[crystal clear] message for management ... customer treatment is a mirror of employee treatment'.* This analogy of a 'customer: worker satisfaction mirror' has gained common credence in the service management literature, supported by selective quantitative research data (Boshoff and Allen, 2000), and is specifically alluded to within the ITIL V2 literature (Berkhout *et al* 2000) which advocates the 'Service Profit Chain' process proposed by Heskett *et al* (1997). This figures that an investment in the quality of services being provided will lead to employee satisfaction, retention and productivity, which will lead to greater value for customers which will lead to greater customer satisfaction and loyalty, and thus to greater profitability. In line with Heskett *et al*'s (1997) correlation between a service worker's job satisfaction and her belief that she

can give the customer what they want, ITIL V2 also explicitly states the following as potential benefits of customer care:

> *Morale and staff turnover will improve as staff achieve job satisfaction and job security, [and] efficiency will improve as staff will work more effectively as teams* (Berkhout *et al,* 2000, p.25).

In brief the idea of the mirror is that:

i. customers are more satisfied when the workers serving them are satisfied in their work;
ii. first-line service workers gain in satisfaction when they are able to satisfy their customers.

At ITIL V3 the 'interpersonal' nature of the mirror is replaced with a 'system' mirror in which the commonality of interests and benefits of customer and service provider are emphasised as the worker providing 'personal' service is removed from vision (Taylor, Iqbal and Nieves, 2007).

As a concept, the customer: worker satisfaction mirror is discussed at length and critiqued by Korczynski (2002). He argues (p. 39) that its '*surface brilliance ... is that it interprets the presence of ... the customer ... as ... the focus around which the interests of management and workers naturally coalesce*', but that below that surface it is flawed by its implicit assumption that the predominant interest of the service worker is to satisfy customers: '*it is not reasonable to state ... that 'employee satisfaction' is rooted in 'customer satisfaction'*". This research seeks, through the analysis of interview data, to consider the extent to which IT service support workers mention satisfying the customer when asked the straightforward question: '*what gives you pleasure at work?*' Korczynski (2002) suggests other factors that give satisfaction to the worker including the challenge of the work, the autonomy to make decisions, the opportunity to use and develop skills, and broader social relationships. Further, the research turns the mirror upside down to consider the customer as a factor that is potentially a source of dissatisfaction to the worker in their work.

The historical passage from 'worker satisfaction' being rationalised *within* IT service management 'best practice' (within ITIL V2) to the worker being rationalised *out of* IT service management 'best practice' (within ITIL V3) suggests a theoretical trend towards the dominant ITSM rhetoric increasingly masking the underlying emotional nature of IT service support work (Hochschild, 1983). If such ‘best practice’ is unconcerned with the worker as anything other than a dehumanised asset to be exploited as a resource or capability (Taylor, Iqbal and Nieves, 2007), then the emotional element of that asset becomes immaterial except when it creates system inefficiency, in which case it might be considered as being a faulty asset requiring either maintenance (e.g. management corrective rebuke) or replacement in much the same way as any other value-creating infrastructure asset.

Whilst a full discussion on emotional labour is outside the scope of this study, it is important to reflect that IT service support workers, in their dealings with often irate or disrespectful customers, are likely to be called upon to internally manage their emotions to present a public ‘face’ that in exuding *'sympathy, trust and good will'* (Hochschild, 1983, p. 137) conforms to and reinforces an idealised ITSM culture of ‘customer sovereignty’, thus reinforcing the weak political status of the IT service support worker within the work setting (e.g. Fineman, 2008; Haman and Putnam, 2008).

7 Human Resource Management (HRM) Practices for Service Workers

The tacit acceptance of the validity of the ‘customer: worker satisfaction mirror’ can be seen to underpin 'best practice' for HRM where the human resources being managed are service workers (Korczynski, 2002). The purpose behind these practices is to engender a satisfied workforce so that their satisfaction might be reflected in customer satisfaction with the services being delivered. These practices include those related to:

- individual workers: i.e. carefully-considered recruitment, training and development, performance management, rewards and recognition;
- job design: i.e. support systems, management control/worker autonomy, and team-working
- the development of an organisational culture of customer service (Korczynski, 2002).

Given its concern for the 'system' service, ITIL has little to say about these matters. Implicitly the message is that the IT service manager's concern is for the IT service which, as has been discussed, considers workers to be anonymised assets to be managed in a similar fashion to non-human assets. In this respect ITIL has implicitly remained committed to Levitt's (1972, p. 52) seminal paper '*Production-line Approach to Service'* which argued for a Tayloristic systems approach to service such that '*it is enthusiastically viewed as manufacturing in the field, receptive to the same kinds of technological approaches that are used in the factory*.' There emerges then the possibility of a particular tension between the systems approach and the HRM approach of the service management 'school'. The former seeks to assert management control over the worker who it largely considers to be a dehumanized 'skills' resource employed to meet specific organisational capability needs. The latter by contrast advocates appropriate worker empowerment/autonomy and the individualisation of the worker, recruiting them according to subjective personality traits (albeit potentially rationalised using personality profiling techniques) rather than more rationally using objective 'skills' qualifications. It is suggested that the reality of the IT service support worker experience of organisational HRM practices probably both reflects and contradicts in different ways these two approaches. This research seeks to understand how different types of IT service support workers are differently 'managed' as human resources by an analysis of ethnographic data relating to each of the factors identified as being important to the management of service workers. Table 5.2 lists and briefly explains these HRM factors, and provides a framework for the analysis of collected data. With the exception of empowerment/autonomy, which was discussed in Chapter 4, each of the HRM factors listed in Table 5.2 is considered in the light of the collected data.

HRM factor type	HRM factor	Typical HRM practice for 'service management school' approach (Dupuy, 1999; Korczynski, 2002, Michel et al, 2009)
Culture	Service Culture	a culture where a good service is considered the norm for internal and external customers
Job design	Team Working	cooperative ethic across the organisation
Job design	Support Systems	IT support systems; physical facilities to enable and encourage efficient customer service; hierarchical support
Job design	Empowerment /Autonomy	workers to be empowered in their dealings with customers
Individual	Recruitment	primary consideration is personality traits with little emphasis on technical skills/knowledge
Individual	Training/ Development	provision of wide ranging and high-quality training including emphasis on interpersonal communication skills
Individual	Rewards/ Recognition	intrinsic and/or extrinsic rewards; recognition from customer and/or management of good performance; celebration of success
Individual	Performance Management	measurement of performance to customer-based standards (i.e. operational customer-oriented goals)

Table 5.2: Analytical Framework for Service Management HRM Practices.

8 Data Presentation: Dimensions primarily associated with 'The IT Service Support Worker as Service Worker'

Data were collected to enable the emergence of patterns and typifications that reflect realities of experiences of IT service support workers, with specific relevance to a conception of them as being service workers. Multiple dimensions were considered to be particularly pertinent to the consideration of IT service support workers as service workers although it is acknowledged that data presented previously may also have relevance. The data in relation to each of these dimensions are presented in turn. Subdivisions by worker type (Types 1, 2 and 3) are used for some of these dimensions. Firstly, data are presented relating to the intensity of the work, as perceived in observation of

the workers at work and as perceived and reported by the workers themselves in interviews. Data are then presented relating to the extent to which workers' everyday working lives are built around the needs of the customer: the extent to which they interact with the customer and are oriented towards them. This includes data on what workers perceive gives them pleasure and displeasure at work, on account of the prominent place of the customer as a source of pleasure/displeasure. This is followed by data relating to service-oriented HRM practices as discussed. Finally, use is made of the tool for the analysis of the tension between the needs and desires of IT service support workers and IT service provider introduced previously. Based on the observation and interview data an interpretation is made for each of the four elements (spokes) on the model relating to each team. Based on these team-level interpretations, quadrilaterals are similarly produced to represent interpretations of the tensions between the needs and desires of each type of IT service support worker and the IT service providers that employ them. and worker needs and desires for each of the worker types and for the generic or typified IT service support worker, taking account of all the data collected.

Work Intensity

Type 1 Workers

Across the collected data a pattern emerges of Type 1 work typically being of such intensity that it is emotionally taxing to the workers. Across the teams, variable intensity is apparent with the most intense work (on the Stoneworks IT service desk) being under working conditions more typically associated with call centres. For example, there are: the incessant stream of incoming phone calls demanding instantaneous attention; the wearing of head-sets connected to the telephony equipment, thus literally tying them as a component part into the ICT system; the large overhead monitoring screens to constantly remind them of the waiting calls they are expected to handle before they might consider doing

anything else with their time; and the tight high-walled cubicles designed to isolate them further from their colleagues so as to avert the risk to the organisation that they might spend paid-for time in unproductive social engagement. Generally the service desk work observed can be seen to have been influenced by ITSM 'best practice'. Workers generally were aware of management-set targets and how they were faring against those targets, and in their work practice had tacitly accepted the management expectations that they work at the pace necessary to meet those targets, even if that caused them to be undesirably stressed.

The intensity of the work throughput on the Stoneworks IT service desk was given by Asghar (STOS) as a cause of workplace displeasure:

> *I think there's times when it gets really busy, when the monitors show the calls are queuing and… you're asked to work at your fastest; when you just know you're bogged down with so much to do and you just have to keep taking these calls and it's not very nice sometimes… as you can see our board is always red... every day you come in and it's always in red; so you think: '**what is the point of trying to be better when it's already in red?'***

It is also reflected in Asghar's reporting of mental stress: *'mentally you can get drained at times when you've had a really busy day.'* Similar mental stress is reported by his supervisor, Ravi (STOS), who reported only managing to take a ten minute lunchbreak and that he was: *'very tired pretty much most of the days [and]... by the time I get home I'm just knackered.'* He implied that as supervisor he was relatively powerless to reduce the intensity of the work, and acknowledged that not only did he suffer from stress but he was also an agent of the system that caused stress to the Type 1 workers under his supervision, remarking that he put: '*quite a bit of pressure on the guys [to make sure the calls get answered quick enough] but that's the business, that's what we've got to do'.*

Jonathan (UKHS) had recently been recruited from Ravi's Stoneworks IT Service Desk team and confirmed the intensity of the work there:

> *You'd know you'd done a day's work there… We'd probably take over 300 calls a day between 7 people and you'd be expected to resolve 70-80% of them first-line.*

He made a comparison with his new role on the UKHEE IT service desk: '*Here it's so laid back. So kind of, if it gets done, it gets done.*' However, Jonathan was new to the role and most of his experience was of the organisation in between academic terms. Navinda and Doris (UKHS) presented a different picture, with Navinda arguing that '*for what we support there's not enough people*.' When asked how tired she felt at the end of the day, Navinda agreed with Asghar's assessment that service desk work was mentally tiring:

> *When the students are back, even though we are fully staffed, it is busy… And you feel tired. You don't really want to be picking up the phone again. You just think: '**Time Out**'… you just want to switch off sometimes.*

Doris concurred, explaining that '*the reason why I cut my hours down was because I was just exhausted, absolutely exhausted*.'

Type 1 workers Kate and Judy (SCCS), had similar answers to the question of how tired they were at the end of the day, suggesting that the demands placed upon them by management targets were the cause.

> Kate: *Oh I'm shattered… I feel extremely drained most days… [because of] the demand of the SLA's. You don't get a break.*

> Judy: *I go home and fall asleep every night at four o'clock* [laughs]… *you feel like you're just like looking at the screens all the time.*

Judy later suggested that the work on the main service desk, where she had briefly worked previously, was even more intense and was made worse for her because her technical skills were inadequate for the role she had been moved into by management:

> *I couldn't cope with the phone calls and the stress of people constantly. I couldn't cope with it. I got upset but I think they could see that I wasn't coping very well… with the technical knowledge of today… I feel so much better even though it's busy and it is pressured it's not the same and I can cope with it and I don't feel I've got people at me all the time … I couldn't even pick the phone up when it rang… I thought* ***'I can't, I just don't want to know what they've got to say'*** [laughs] ***'I don't want to talk to anybody'*** *because they are all asking me things that I don't know anything about.*

The intensity of work on the IT service desk of SCC's Education Services was such that it seemed to be more comfortably manageable. Both Adam and Sandra made comparisons with previous roles, working in the private sector, and reported that they found work at the Council less tiring. However, Adam did point to times when '*staying on top of [incidents]*' was an issue. The propensity of this team to escalate incidents may account for the perceived lesser intensity with both Adam and Sandra pointing to the option of escalating to the second-tier worker as being important for them in coping with the workload.

> Sandra: *Some things are easily fixable… and if it's a more in depth thing… if we can't resolve it first tier… then it goes to second tier anyway.*

The way that these workers presented the second-tier workers gave the impression of them as being to them like a valve to relieve any pressure building up, rather than a point of referral for specialist or more expert knowledge to be employed.

Type 2 Workers

Just as the data suggest that the complexity of work for a typical Type 2 worker varied greatly over a period of time, so the data suggest that Type 2 IT service support work is similarly characterised by wide variations in the intensity both across teams and within teams. In observation of the teams, Type 2 workers differed from Type 1 in that they were not typically fielding telephone calls. The interview data reflect this difference with typical acknowledgment that work varies from being hectic to being relaxed.

> Gareth *(STES): It can be busy… I prefer it when it is medium level. It's bad when it is too slow because you are like watching the clock. If it is too busy it can be a little bit stressful.*
>
> Stephen *(SCCD): Every day can be varied. If it's a physically demanding day, lots of installations, yeah that can be tiring ... but mentally tiring not very often.*
>
> Roger *(SCCS): The timescale we've got to work on [incidents] are usually quite lenient… it's more a case of how many things have come through. We are not running around working our socks off generally.*

Here Roger alludes to the unpredictability of the throughput of work. The notable difference to his colleagues on the Service Desk front line is that by the time an incident has been passed to him, the 'customer' has been semi-detached from the incident. Receiving future communication from the customer, for example to check on progress, typically remains the responsibility of the Type 1 worker. Much of the pressure to complete the work will be routed via the Type 1 service desk worker or management, thus diffusing the intensity that might be generated by a customer. As discussed, the customer might be seen as a powerful force who exerts pressure upon the IT service support worker, and in this respect the Type 2 worker might be seen to be protected from this pressure by the Type 1 workers. In Chapter 4 a battleground analogy was used

to discuss the relationship between the worker as knowledge-possessor and management as their adversary wanting to take possession of that knowledge. Here, this analogy might be extended by suggesting the customer as an additional adversary wanting the worker to submit to their will. And, if, following this analogy, Type 1 workers are 'on the front line' (Frankel *et al,* 1999) and in the firing line, then Type 2 workers might be seen as being behind the lines in the support trenches waiting for the call to arms. It is those on the front line that are going to take the customer flak before them. Nonetheless, as Roger (SCCS) and Charles (STOD) recount, they, as Type 2 workers, are not immune from the pressures that working for demanding customers brings:

> Roger: *Of course you have the added pressure sometimes of the customers saying this needs to be done now… you can get quite whacked out if somebody keeps saying '**I need this now, it's very important'** and you can't find a way to make it work.*
>
> Charles: *The hardest thing I find personally in the job is it's more of a fire-fighting exercise of who's shouting the loudest... The boss is likely to be being chased by someone, but it's more likely that the user will ring up to chase something. You know: **'What is the status on that?**'*

A typical Type 2 worker, on account of their skills, may also be tasked with other less immediate, and thereby less time-pressured work, that is unrelated to the resolution of incidents. And, where that work is preferred by the worker, this may have the effect of causing stress by having to 'time-manage' these different work types with different motivating forces for completion. To typify, the imposition of service levels is intended by management to motivate the quick resolution of incidents, whereas engagement in project work may often be motivated in part by a desire to expand personal knowledge. Charles (STOD) relayed such a difficulty, reporting that he found it a challenge '*juggling projects with incidents… If… you pick up something because you're interested in it … [you can] neglect the other side of things'*.

Whilst the intensity of work of Type 2 workers may be less than for their Type 1 colleagues, Charles hints here at a typical frustration at not having the time to develop the deep learning associated with the development of a craft, as discussed in Chapter 4. Stephen (SCCD) reported a similar hindrance, although in his case reflecting a desire to engage with the incidents that came to him more thoroughly:

> *We don't really have the ability to really get our teeth into interesting problems; we have to get things fixed [within timescales].*

This need to resolve incidents quickly without necessarily addressing any underlying issues is similarly reported by Roger (SCCS) who highlights the stressful and intense nature of working to resolve major incidents and Stephen (SCCD) who, echoing Charles (STOD) highlights the fire-fighting nature of such situations, as well as the impact of downsizing upon the ability of workers to be able to devote dedicated time to deep learning:

> Roger: *If dramatic things go wrong we do have very tight timescales. We've got to fix things within four hours… we do have to work very hard to get that done.*

> Stephen: *The workload is quite high, so you have to juggle incidents so that they are resolved in a timely manner. Plus you always get the odd left-side incident that comes in … a 'Priority 1', which is a drop everything and attend to this… it's [especially] hard now… as we are a smaller team than we used to be.*

Type 3 Workers

At interview all of the technicians at Server Control reported that they worked hard (and the observation data confirm that they tended to be fully engaged throughout the day including through lunch breaks) but were not particularly tired at the end of the day. By contrast, at Poyet Systems both Mike and John worked relentlessly, except for their lunch break which they took away from their desks, but reported being very tired at the end of the day. To understand this difference, the cultures of the offices need to be discussed.

As a team, the Poyet IT service support workers were extremely busy, sometimes referring to an incident logging application to select their work and sometimes completing other technical work that had reached them via another communication mechanism. The busy-ness of the team reflected a fire-fighting modus operandi (Bohn, 2000). (This incidentally made it difficult as a researcher to identify that the workers were working on an identifiable logged service incident at any given moment of time.) Both John and Mike were prone to be waylaid whilst working on an incident when they noticed that another technical matter, related but not central to the issue being worked on, 'needed' to be addressed by them. This, they agreed, was in large part because the systems had not been maintained satisfactorily in the past. Sometimes they would prepare (raise) a new incident record for this matter and then deal with it there-and-then. Other times they would deal with the matter 'in flight' and then either raise an incident immediately afterwards, or make a mental or written note to raise an incident later, or not raise an incident record at all. Other times they would make a mental or written note to address the matter later. It is quite likely that they also sometimes chose to not take action, judging that the matter had a low priority. In short, depending upon the pressures they were working under at the time they autonomously chose how to handle such occurrences differently, thus resisting following a uniform process as their management might expect. In interview John responded with candour to a question about the IM process, alluding to time-pressures as a factor in his decision-making:

I try and log as many tickets as much as I can but as with all call logging systems you can do the job in 4 seconds and it can take you 10 minutes to raise the ticket. You know, you've got to look at the benefits of raising a ticket.

On other occasions they were waylaid from what they were working on by developers or managers requiring them to investigate a technical matter. On one occasion John stopped what he was doing to investigate whether a developer's download request was causing a system to run slowly. On another a project manager approached him with his laptop that had been causing him problems and engaged him in conversation that resulted in John unscrewing the casing and looking at the internal components. The impression left was that they were reactive to such 'off-process' interventions. At other times they would take some control over when they dealt with the incoming matter; for example, in my journal I recorded a developer asking 'the room' if anyone knew what had happened to a particular server which was apparently unavailable. A discussion ensued between several technicians, in which the stand-out line was '*It's fucking ridiculous to have a server down for three days*.' At this point in time, John was out of the room, whilst Mike was working on a matter with his headphones on. (I took the putting on of headphones as a sign that Mike did not want to be observed working at that particular time!) A few minutes later John returned to the room and was immediately met by a developer who asked: '*John, do you know what is happening with Ghost?*' Without breaking his stride, John responded *'I'll have to speak to Mike about it. I need to finish what I'm doing at the moment.'* Noticeably, John did not refer to the IM process which had been implemented to control such queries. The developer said no more and the matter rested there. Given that this suggests a somewhat chaotic practice, and that, according to Mike, there's was a '*quite intensive'* and *'quick'* way of working, it was telling that Mike and John were similarly emphatic about being exhausted at the end of the day with John plaintively remarking that he was '*knackered*' and that if I made a return visit in six months' time he expected to be even more so.

At Poyet the lack of control over the incoming work to the understaffed support team increased the intensity for the workers as they struggled to juggle

the multiple demands upon their time. Because they didn't record all the incidents they investigated and resolved, management, guided by the metrics, did not understand their argument that they were understaffed (journal entry: end of visit meeting with senior managers).

The situation at Server Control was quite different, being marked by its consistently managed, quiet solemnity and more harmonious ambience (compared by Anthony to that of a family setting). The workload was scrupulously overseen and expectations of behaviour were clearly understood (if unspoken or unwritten): incoming incidents were worked as soon as they came in by whoever was available or became available. Here the control eased the work intensity because the number of support calls was manageable given the staffing complement and efficient practice. Nigel, as overseer, was content with the ensuing productivity:

> *As long as the tickets are picked up in a reasonable timeframe I'm happy. I don't expect them to be picked up instantly… Actually tickets are generally worked very quickly.*

Lionel spoke of the work requiring concentration, and in this sense the work was intense, but as Darren commented: *'I wouldn't say there's a high demand for anything.'* The manageability of the workload enabled the technicians to work on other non-support activities, typically development work. Nigel was keen to keep the technicians busy during times of low support requirement, remarking that '*we like to give them a break from just sitting day-to-day doing tickets':*

> *They all tend to have pet projects... Your core is 'support', but also Anthony [likes programming and] looks after the monitoring system... And Lionel is… quite interested in database stuff.*

In this way, the workers at Server Control were fully occupied whilst apparently not experiencing undue mental stress.

Customer-Interaction and Customer-Orientation

Type 1 Workers

Given that Type 1 IT service support work typically entails interacting with the customer, with an assumed objective of fulfilling the customers' needs, one would expect Type 1 workers to be particularly customer-focused in their work. In observation of the handling of incoming phone calls, workers were generally found to be concerned with meeting those customer needs in a polite and emotionally controlled manner.

In interview, workers were specifically asked what – if anything - gave them pleasure and displeasure when they were at work. Across the nine answers given, six categories relating to pleasure were identified and five categories relating to displeasure. In terms of giving pleasure, providing good customer service is alluded to by four of the nine workers, but interestingly the receipt of gratitude is mentioned by five of them (Figure 5.6). Together the suggestion is that Type 1 workers have a strong need to be appreciated for the service that they provide by those whom they serve.

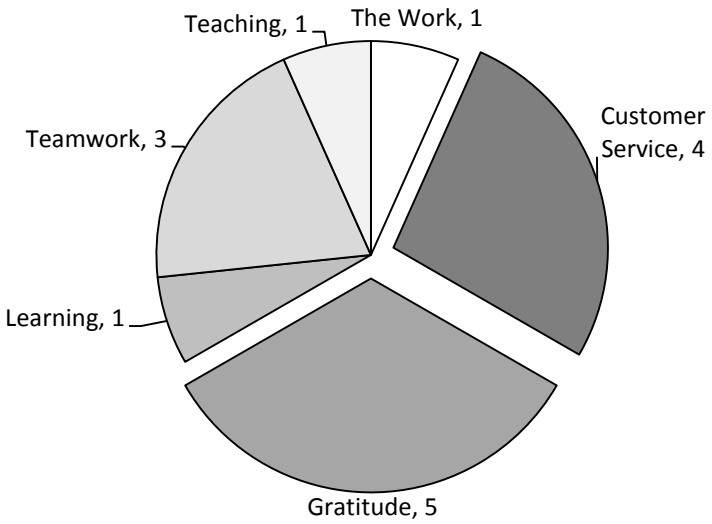


Figure 5.6: Type 1 Workers: Causes of Pleasure at Work

In terms of displeasure, seven out of the nine workers mentioned that the work itself was the outstanding source of displeasure along with the behaviours of a range of people, rather than exclusively customers, with whom they interfaced during the day (Figure 5.7). The general dislike of the work tends to be in line with the low status of Type 1 work within the organisations and the association with oppressive call centre regimes as discussed in Chapter 3 (Beaumont and Hunter, 2002; Gray and Durcikova, 2006; Murphy, 2011).

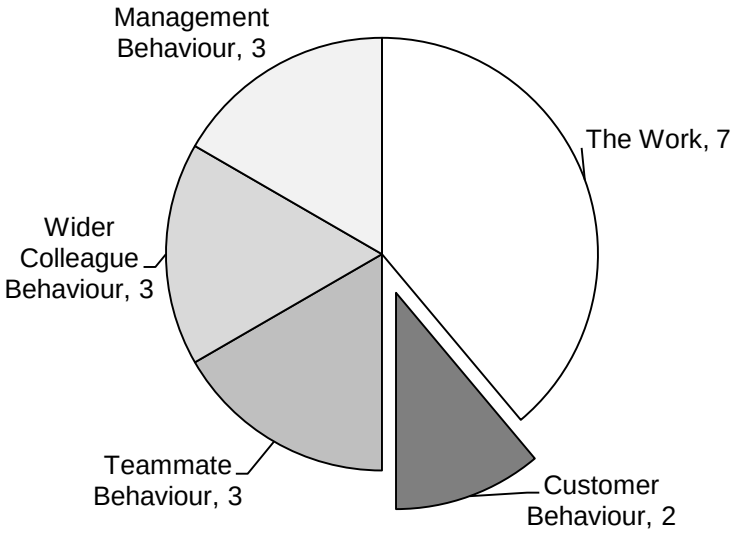


Figure 5.7: Type 1 Workers: Causes of Displeasure at Work

Across the interviews with Type 1 workers as a whole, three themes emerged. Workers tended to regard being customer-focused as important, placed great personal value on being appreciated by customers, and were conscious of the risks of customers emotionally discomforting them. In short, the customer focus of the role comes out clearly across the interviews. When asked what the most important knowledge someone needed in her role was, Doris (UKHS) immediately spoke of her strong customer service ethic:

> *Purely from a customer services view an affinity with the other person on the other end of the phone or at the desk or contacting by email. I put myself in their situation and that helps me to relate to their problem better… students… are what we are here for at the end of the day*

> *[and] I'll try my utmost best to help them out in any way I can.*

Her colleague, Jonathan (UKHS), spoke of getting pleasure in his work from '*just providing a good service to users*,' whilst Asghar (STOS), alluding to work intensity, spoke of the displeasure in his work when '*you want to help the user but really all you have time to do… is log the calls.*'

Adam (SCES) was similarly conscious of the demands of the role to be customer-oriented, although he seemed to indicate that this mindset came from his previous experience working in the private sector and, excluding himself, felt a customer service ethic was less apparent in the public sector where he currently worked, although this was not apparent from observation of the team at work:

> *I find a big contrast from working in a private enterprise where… the bottom line is: you've got to serve your customer; you've got to answer calls; you've got to resolve them as quickly and as thoroughly as possible. And I often find that that doesn't happen... My view is that we are trying to help schools here… and if you can help… you should be doing that.*

The pattern suggests that through experience Type 1 workers are socialised and trained to accept and perpetuate '*the enchanting myth of customer sovereignty*' (Korczynski, 2002, p. 64) over themselves personally and more broadly over their teams and the IT service support function.

Allied to the humility of Type 1 workers that comes across through the interview data, is an emphasis on the importance of being appreciated by customers for job satisfaction. Time and again the gratitude of customers is presented as vitally important and the suggestion is that this acknowledgement of care gives meaningfulness to work that it is often intense and lacking in opportunities for personal fulfilment through identifiable creative achievements. Whilst the worker may be depersonalised within a rationalised IM process, in their minds they are very much human beings acting altruistically to fulfil the

personal needs of other human beings and displayed very human desires to be acknowledged and appreciated for their human efforts. Similar responses were given to the question: '*What gives you pleasure when at work?'*

> Sandra (SCES): *It's great when people say '**Oh thank you so much**' which we do get a lot of here... That does make your day.*
>
> Asghar (STOS): *I think satisfaction of helping users out… I've had numerous e-mails from senior staff expressing their gratitude for my service… appreciation from them… gives you a boost and makes you feel it's all worthwhile.*
>
> Jonathan (UKHS): *getting good feedback from users: … '**Thanks very much for that; you've been very helpful; you're a life saver**,' that kind of thing.*
>
> Adam (SCES): *More often than not people are appreciative when you take the time to take them through an issue… You do occasionally get some positive feedback; out of nothing you will get somebody saying '**I've had some wonderful service'** and rare as it is it is nice to hear that.*
>
> Doris (UKHS): *Somebody saying: '**Thank you very much; your help is very much appreciated; you're a star**,' things like that… When you do get a thank you… it just means the world to you because you go home feeling '**Oh yeah, I've really done a good job today**.' It's just so simple… It's amazing the effect it can have on you… just two little words from my customer, that's all it takes to make me feel proud.*

It might also be suggested that this valuing of customer gratitude reflects a certain neediness and insecurity that might be exploited by customers. Some customers may recognise that the quality of the service they receive might be manipulated by playing to this insecurity. Other customers might not engage

with the Type 1 worker at an interpersonal emotional level but rather might regard them as the dehumanised process resource implicit in the ITIL guidelines. Certainly the interview data suggest that Type 1 workers are typically prone to be vulnerable to emotional hurt by the attitudes and behaviours of some customers.

Asghar (STOS) acknowledges that the work entails managing one's emotions when communicating by phone with customers and of the mental hurt endured from time to time:

> *You need to know how to speak to them, how to overcome certain situations and need to stay calm in certain situations as well because it can get heated on there … [and] it just takes its toll sometimes.*

Navinda (UKHS) similarly tacitly acknowledges the power of the customer to emotionally wound:

> *If the customers know they will get a good response, hopefully they will ring in in a manner that they are not uptight and angry or cheesed off.*

This evidence seems to support an argument that front line IT service support workers are similar to call centre workers in that they are required to manage their emotions such that they appear civil and professional even in the face of hostility (Noon and Blyton, 1997; Frenkel *et al*, 1999). The workers on the SCC Education Services Service Desk similarly reported on their awareness of having to be on the receiving end of communication from disgruntled users; or as Adam obliquely referred to them '*select clients*'. Sandra reported that: '*If you get one of [the grumpy users] you know as soon as you answer the phone and they say who they are. You go, '**Oh hello**' (laughs).*

Type 2 Workers

Type 2 workers' responses to being asked the question 'what – if anything – gives you pleasure when at work?' revealed that serving customers was still an important reward in itself, but that in contrast to Type 1 workers being thanked by the customer was not a significant source of pleasure. Far more important to Type 2 workers was the work itself (Figure 5.8). This is perhaps understandable given that their direct contact with customers was typically restricted by 'best practice' procedural rules that ensured that the Service Desk was the single point of contact for customers.

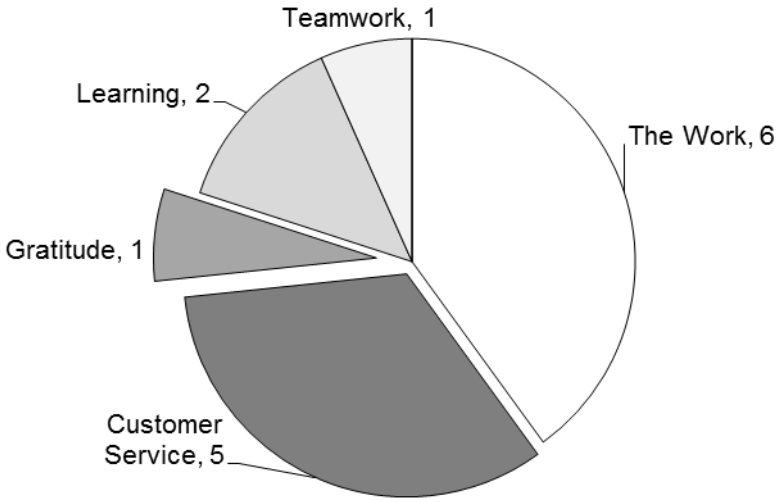


Figure 5.8: Type 2 Workers: Causes of Pleasure at Work

One of the emerging themes from the references made to the service recipient is them as adversary with customers portrayed as being at times impatient and hostile. As Stephen (SCCD) typified it: *'Some customers can be challenging… there's always an expectation that things need to be done, resolved there and then*.' Similarly, Roger (SCCS) remarked upon '*customers saying this needs to be done now*.'

This notion of the customer as adversary is also shown from an analysis of the answers given to the question: *'what – if anything – gives you displeasure at*

work?' Type 2 workers were far more likely than Type 1 workers to cite the behaviour of customers, perhaps suggesting that they are less tolerant of stress-inducing customer behaviour than their Type 1 colleagues although an alternative interpretation might be that, given that they find their work more intellectually fulfilling than Type 1 workers, they are less likely to state that the work causes them displeasure, thus increasing the likelihood of them giving an answer related to customer behaviour (Figure 5.9).

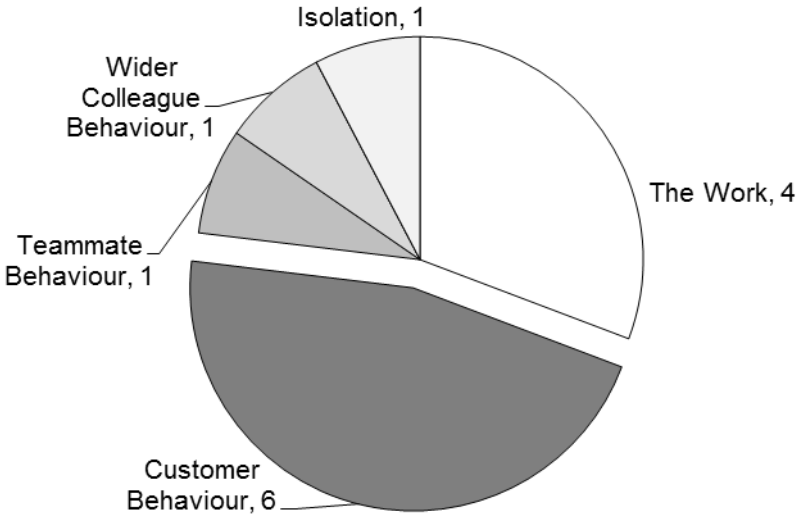


Figure 5.9: Type 2 Workers: Causes of Displeasure at Work

Nonetheless, resolving incidents reported by customers is still of prioritised importance to Type 2 workers, as indicated by Charles' (STOB) reporting of constantly changing priorities depending upon '*who's shouting the loudest to actually get your next bit of work done.'* Implicitly, satisfying the customer is a strong source of motivation for Type 2 workers as well as Type 1 workers. Lauren revealed this customer-orientation when discussing the tools they used for sharing knowledge, indicating that her motivation for writing up objective knowledge articles for use by Type 1 workers was '*so the customer isn't hanging on*.' In another illustration of customer-orientation, when asked what gave them pleasure at work Harry and Tom (SCCD) discussed the satisfaction they got out of being able to use their technical skills to help the customer.

> Harry: *Sometimes you can be like a knight in shining armour as you walk into a site that is down and you resolve it… It's customer satisfaction and knowing you've done a good job in a difficult situation.*
>
> Tom: *One of the nice things is when you go out on a call and you can see the customer is busy panicking… if you can help them out with that, that's brilliant.*

Type 3 Workers

Although their role is customer-facing in the same way as Type 1 workers, for Type 3 workers, providing customer service was not reported as a source of pleasure at work to the same extent. It was nonetheless raised by some of the technicians. Lionel (SER) spoke of when the work he had done '*for a customer makes them happy, it rubs off on you: it makes you happy as well*.' Similarly, Mike (POY) spoke of when customers *'are happy that you have done a good job and that to me is what I am here for'*. Paula (POY) also mentioned the satisfaction she took from positive feedback from customers: '*It's nice when you get an email back from a customer saying '**Well done, great, that's solved it'.'*** She was also overheard saying to an internal customer *''Thank you Stuart, it's always nice to be appreciated.'*

As with the Type 2 workers, the work itself was the most important source of pleasure at work to the Type 3 workers interviewed (Figure 5.10).

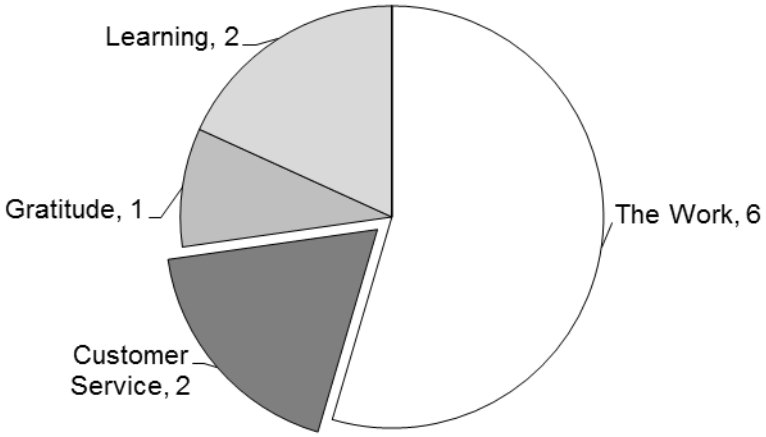


Figure 5.10: Type 3 Workers: Causes of Pleasure at Work

Other data from the interviews suggest that serving the customer remains an important factor in the working lives of Type 3 workers. Indeed in interview, unprompted, the Type 3 workers at Poyet and Server Control showed a greater propensity to refer to the customer, suggesting an ingrained customer-orientation. Figure 5.11 illustrates this data which are detailed at Appendix O. It can also be noted here that the interviewed Type 3 workers tended to refer to service recipients more using words that tend towards commoditising them within the system; i.e. they tend to use the words ‘customer’ or ‘client’ or ‘user’ noticeably more than the Type 1 and Type 2 workers interviewed. This may suggest that these workers carry a more embedded rationalised systems thinking approach to their work.

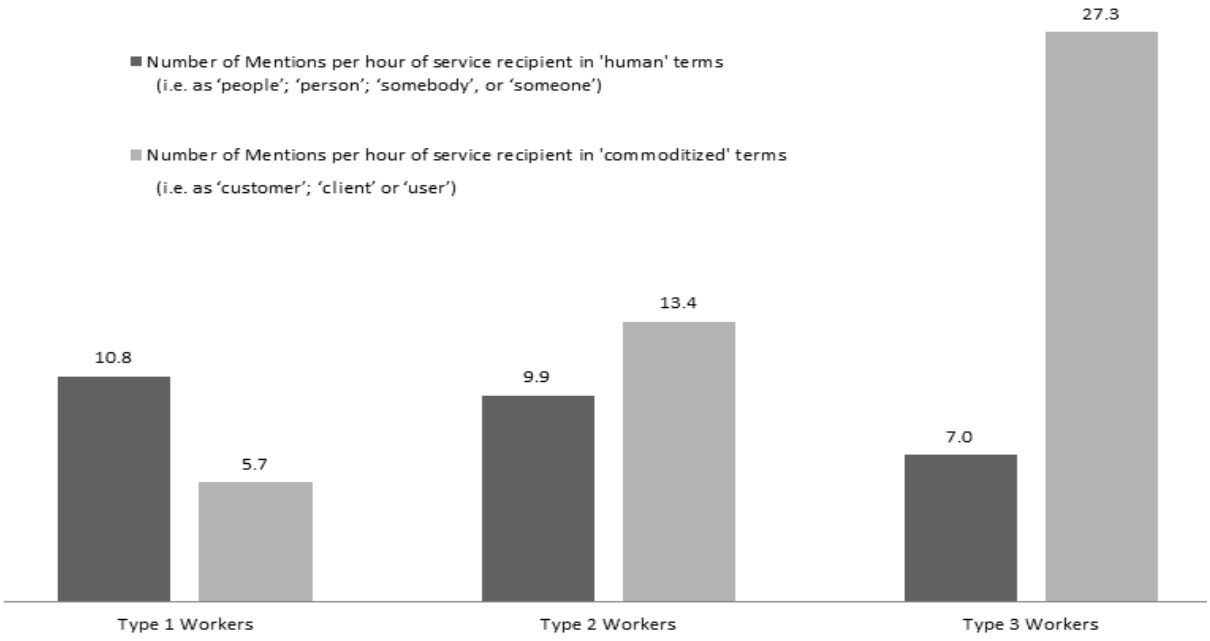


Figure 5.11: Customer-mindedness of IT Service Support Workers as revealed through unprompted mention of service recipients during interviews

The detail of these references to the customer confirms this customer-mindedness generally held by all workers. Nigel (SER) and Paula (POY) saw their leadership roles as being about encouraging a focus on the customer as key to a successful operation. When asked about his role, Nigel remarked that it was about '*the service provision to our customers ultimately'*:

> *We are a company that lives or dies on how good a support we provide... We want them to feel that we are there if they need us to be: responding to tickets… but also more general... things that aren't directly related to the box.*

Paula was equally keen to endorse the customer service message written into the company brochure made available to customers at reception. This explicitly presented the company as providing '*an excellent customer experience'*. Paula expressed frustration that the programmers, who made up

the bulk of the IT division of the company and upon whom the team often relied for product knowledge, didn't appear to share this mind-set:

> *The developers… don't seem to see the customers are the bread and butter of the company and if they don't help us to help the customers then they shoot themselves in the foot.*

All the interviewed technicians at both Poyet and Server Control presented a common image of being customer-centric:

> John (POY): *It's a customer-focussed role that you are in so you've got to be customer-focussed twenty-four seven.*

> Lionel (SER): *In all the customer surveys we have people who just cannot believe the response times, the level of support, the knowledge etc. that they are getting from our engineers.*

There was also a general recognition amongst the Type 3 workers that because of the contextualised nature of the technical knowledge held by the technicians they each had a personal vested interest in the customer. For example, Anthony (SER) and Mike (POY) spoke of the importance of building up knowledge of customers and their unique systems over an extended period of time:

> Anthony: *The main thing is knowledge of customers… knowing these background issues and how to handle them… The other thing is the history of a customer's network, because some of the customers' networks have really crazy routing and things like that.*

> Mike: *You get to know the customer; you know what they are doing; what their plans are; how you can converse with them.*

As with Type 2 workers, the customer also emerges as a source of displeasure to Type 3 workers. (Figure 5.12). As Nigel put it succinctly: *'One or two customers are a pain in the arse: probably the nature of support.'*

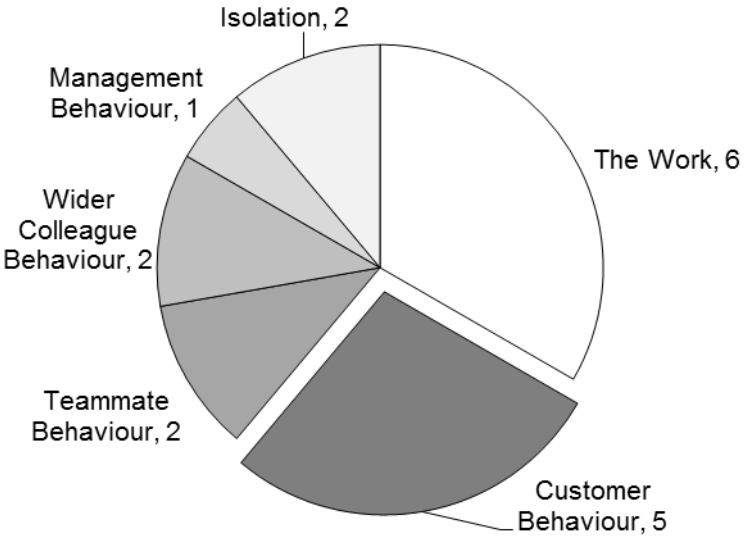


Figure 5.12: Type 3 Workers: Causes of Displeasure at Work

All IT Service Support Workers

In aggregating the factors mentioned across all the interviews as causes of pleasure and displeasure at work, the customer emerges as significant in both cases (Figures 5.13 and 5.14). Thus IT service support workers might be characterised as assigning a high degree of individual importance to the customer to mirror the implicit importance given to customer relations by their employers as a driver for organisational success.

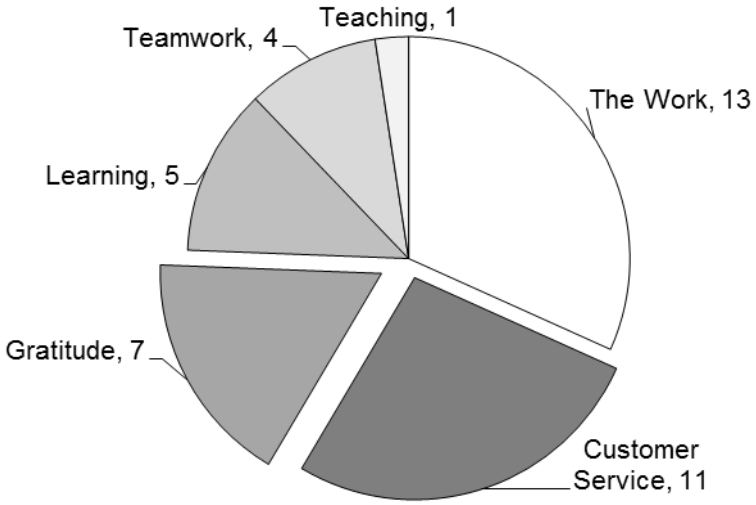


Figure 5.13: All IT Service Support Workers: Causes of Pleasure at Work

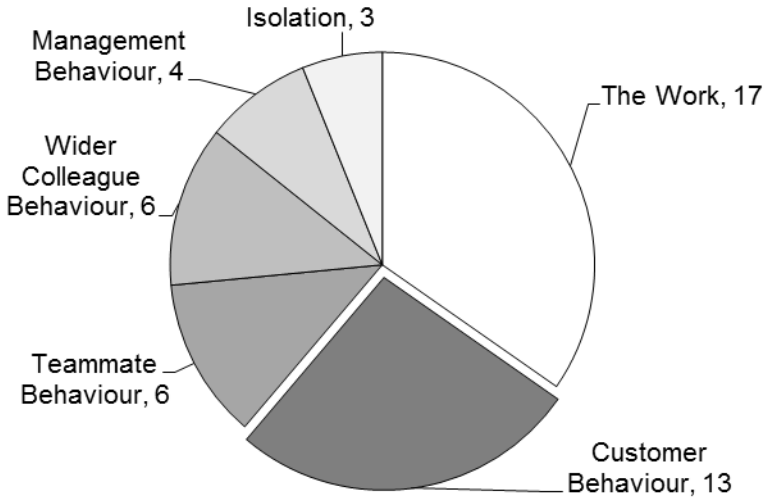


Figure 5.14: All IT Service Support Workers: Causes of Displeasure at Work

Service-Oriented HRM Practices: Introduction

The extent to which IT service support workers might be regarded as typically service workers can be seen to be reflected in how they are managed, i.e. in terms of the HRM practices they are subjected to. In line with this, several

factors considered to be important for the management of service workers were considered (see Table 5.2).

Of these factors, IT service support workers emerge as being typical of service workers in their ready-adoption of a service culture, a propensity to work well together in teams, and a readiness to make use of provided support systems within hierarchical organisational structures. However, the recruitment and 'training and development' practices affecting IT service support workers are not typical for service work in that the emphasis of both was found to be on technical skills rather than interpersonal customer-skills. These factors are included within the following broader consideration of the factors listed at Table 5.2. Although 'empowerment/autonomy' was listed as a factor in this table, data relating to this are not presented here as data related to autonomy was presented and then discussed in Chapter 4. However, it is worth adding that discussion that, with due regard to the IM process, the WFMS tool and the SLA arrangements, the observed customer-facing IT service support workers were empowered to deal with customers without the use of scripts as are commonly employed within call centre environments (Taylor and Bain, 2003).

Service-Oriented HRM Practices: Service Culture

As discussed, customer-orientation typified the cultures in which all the observed IT service support workers worked. The customer-centric culture of the Type 1 workers might be seen as being in part related to their constant interaction with the customer and in part related to the IM process designed around the need to fulfil the customers' needs as quickly as possible. Whilst Type 2 workers have less interaction with customers than Types 1 and 3 those observed were nonetheless very conscious of the need to service the customers' needs. This is indicated by Stephen's (SCCD) answer when asked to describe the culture of his team: '*That's a difficult one… How would I sum it up? It is very customer-focused*'.

A strong service culture was particularly evident at Server Control where highly technical Type 3 workers fully understood that their work was directly connected to the work of another person, i.e. they 'served' that person directly in a way that other IT technicians (e.g. software developers) did not. Specifically, under the influence of senior management discourse, they recognised the connection between sales and customer service, as summed up in Nigel's definition of their '*end product'* as '*keeping the customers happy'*. At Poyet, the company strongly espoused the virtues of customer service on their website. The service support team, whilst discontented in their work for various reasons, gave an impression of being true to this in contrast to a more techno-centric mind-set amongst the rest of the IT division, who were primarily engaged in development work at arm's length from the customer.

Service-Oriented HRM Practices: Team Working

Type 1 Workers

Across the teams there was significant evidence from observation and from collected interview data of supportive and cooperative team-working.

At Stoneworks, Asghar (STOS) was keen to relate evidence of a strong team working ethic at different points of the interview:

> *As a team we work very effectively and we're able to keep to our SLAs … Everyone will be eager to help each other out. There isn't ever any times when you are on your own … To be honest we have a great team bonding… The atmosphere is we are all friendly with each other … I think my team are quite proud of what we achieve.*

Consistently, Type 1 workers reported similar cooperative working environments.

> Jonathan (UKHS): *I think there is a good rapport between us all … Yeah, there is a good bond and trust built up.*
>
> Navinda (UKHS): *I think there is a good level of cooperation on the team.*
>
> Doris (UKHS): *It's a fun team actually. We all get on so well together and… we are all quite happy to help each other out.*
>
> Sandra (SCES): *Even though we have development time, if it's busy we'll come back on the phones… We'll all muck in and cover for each other.*

This cooperation noticeably manifested itself in the significant level of interpersonal knowledge sharing, with workers preferring to share information/knowledge across the desk rather than make use of the knowledge management tools made available to them.

Type 2 Workers

Consistently across the Type 2 teams, individual workers acknowledged, both in their activity and in the narratives, the importance of the team to the effectiveness of their work. The overall impression is that it is second-line *teams*, more than second-line *workers*, that might be more clearly regarded as having the characteristics of self-reliance. This team level self-reliance is predicated by the need for individuals to share in the pool of knowledge acquired by all the team members through their working experiences. This particularly came through in the interviews with four members of the same team: Stephen, Tom, Dick and Harry (SCCD). Stephen commented on the supportive nature of the team, suggesting that this was driven as much by self-interest as by altruism:

> *If there are any problems that you… are unfamiliar with, then there is always somebody… keen to help…*

[Cooperation is] good but everyone's trying to look after their own best interests.

Similarly, Harry, at various times in the interview, was keen to relay a communal message of effective team working:

As a team we are left to do our own thing really… everybody works well together… Within the team … I think we cooperate very well… You just learn on the job with the support of the other team members.

Roger (SCCS) and Lauren (STOB) similarly remarked upon the importance of team-working so as to access a broader stock of knowledge than personally held:

Roger: *We all work as a team … we've got a couple guys who are experts in some things and a couple of people who are experts in others, so we quite often end up going and asking other people how stuff works. We'll talk to Bill if we want to know how the network works… It's all very supportive [and] … because we support each other a lot we are very effective.*

Lauren*: we don't tend to escalate things. We do it all within the team. If I'm not sure about anything I'll see if another member of the team knows.*

Thus the team-working ethic appears to become established in part through a need to cope with the technological complexities which confront the Type 2 workers. Lauren expanded upon this, after it was suggested to her that, on observation, incidents were often investigated by different team members working together, typically with one worker sat at the desk and one or two others standing behind, all looking at the monitor:

I think it helps if you've got a few of you all sat together… all looking at it in different ways. Chris and Gary may go

about looking at something in a completely different way to how I would.

The suggestion is that this shared experience and the sharing of knowledge serves to build the team into a strong cohesive unit that can address a full range of incidents efficiently. In line with this there emerges from some of the interview data an apparent relationship between the repartee in the team and discussions and experiences that serve to enhance the overall capability of the team.

Charles (STOD): *I think [the culture is] fairly relaxed. I think we use humour quite a lot, sort of taking the Mick out of each other. But no one is afraid, if they've done something daft, to show the team. Everyone needs some help with some things.*

Lauren (STOB): *A few years ago … we used to work away quite a lot, going around from business to business, putting them on to OneWorld... So I suppose we know each other quite well and I'd say that helps us to work well as a team really… Because you're away from home quite a bit, and because we are supporting areas of the business that might not necessarily want to go on to the new systems… When you're there all together it makes you more confident.*

Type 3 Workers

There was a distinct contrast in the perceptions of team working of the respective interviewed Type 3 workers at Server Control and Poyet. These perceptions were not always reflected in the observations of the teams. The perceptions of the workers at Server Control included that there were *'very high levels of cooperation'* (Lionel) and that *'they talk to each other a lot'* (Nigel). The observation data though, as discussed previously, show that largely the

technicians worked in isolated and silent concentration. Whilst being aware of the implications upon team working of requiring a quiet workplace, Nigel maintained his stance that close verbal cooperation needed to be kept to a minimum:

> *The problem tends to be that one or two of them will sit on [a] problem for too long before asking; but they do ask eventually and normally if you are not careful you end up with two or three people jumping in to have a good look.*

The use of instant messaging software enabled technicians to silently communicate, particularly with colleagues '*who are more familiar with some customers than others*' (Anthony) and this was actively encouraged and routinely used:

> *I like it to talk to other engineers while I'm on the phone to a customer... And obviously I can't do that… We all tend to know some customers better than everybody else… It's just less disruptive.*

Thus team working occurred between selected technicians whilst not being observable or audible to others.

Whilst the Type 3 workers at Server Control found it 'a great place to work' (Darren) and 'like a family' (Anthony), the situation faced by the workers at Poyet stood in sharp contrast to this. Paula characterised the culture of the service support team as 'quite reserved and quite guarded' whilst John referred to himself as being 'on my own as a department' and as 'an outsider' in a team that is 'very segregated'. Similarly, Mike lamented feeling 'very much on my own' and asserted that 'we aren't really a team any more'. And yet on several occasions Mike and John were observed collaborating, notably on an incident that required software to be removed in different ways from multiple servers. It was also noted that they both regularly conversed with Paula about work matters. Also one Friday during the period of observation I was invited to join a larger group of technicians for a lunchtime drink at a local pub and noted with interest that Paula, Mike and John chose to sit together and spent the time

engaged in team-bonding conversation, bemoaning the lack of support that they got as a team from management and the rest of the division. At this moment they were a more cohesive team than they had individually perceived themselves to be.

Service-Oriented HRM Practices: Support Systems

Type 1 Workers

The nature of IT service support work is such that workers tend to work within predefined processes, typically founded upon ITIL guidelines. This 'best practice' suggests processes for Type 1 workers that involves support from other personnel when the worker feels that it is necessary to escalate the task before them. They might escalate functionally to a second-line team when they do not have the capability or resources, including time, to complete the necessary actions or they might escalate hierarchically to their manager for a decision to be taken. This structuring of work is designed to optimise worker productivity whilst maintaining a high level of customer service.

A typical call centre environment was most evident at Stoneworks, where the cubicled banks of compact workspaces, the overhead 'scoreboard' and the obligatory headsets, marked out the service desk as particularly rationalised *vis-à-vis* the other IT workers seated in the vicinity (see Appendix F). A similar arrangement had been put in place at the SCC Corporate Services IT Service Desk, but the broken 'scoreboard' and the management tolerance of non-standardised practice (e.g. pacing up and down whilst taking a phone call and the regular removal of headsets) somewhat undermined the intended rationalisation of the working environment. The Type 1 work processes were, across the board, supported by ITSM WFMSs that enabled workers to organise and control incidents that were passing through their life cycles. Without being enthusiastic about using these tools the workers acknowledged them as fundamental to their work as it was defined for them. Asked what they thought

about these tools the responses reflected the concern that workers had for having the most effective support tool to enable them to work efficiently. Adam (SCES) said the tool at SCC was *'a bit clunky'* whilst the tool used at UKHEE was similarly unpopular with Jonathan (UKHS) saying it *'isn't up to scratch'* and Doris saying: *'I think it's useless'*. Asghar (STOS) was similarly unimpressed with the tool used at Stoneworks: *'it often takes us longer to log the call than deal with the problem'.*

Type 2 Workers

In one sense the Type 2 workers are part of the support system for the Type 1 workers: incidents can be functionally escalated to them for investigation and resolution. But both sets of workers rely upon IT support tools to enable them to perform their respective duties. Both typically communicate via the same ITSM tool, but Type 2 workers, because of the more technical nature of their roles, typically rely upon other IT tools, such as applications enabling remote access to customers' computers.

Like the Type 1 workers, they tended to be rather critical of their respective ITSM tools, typically describing them unenthusiastically as *'adequate'* (Dick, Roger) or '*poor'* (Stephen) and pointing to plans to replace them (Harry, Roger). These tools were also criticised for being information-hungry for no apparent analytical benefit (Charles) and slow and unhelpful for knowledge sharing (Stephen). Only Gareth (SCES) was willing to adjudge the ITSM tool used in his team as '*pretty good'* although he also remarked that to speed up its response times they had had to delete a lot of data.

Type 3 Workers

At both Poyet and Server Control, the Type 3 workers were all required to keep records of the incidents reported and worked. As discussed previously, at

Poyet, the fire-fighting modus operandi resulted in a lackadaisical approach to recording incidents, thus resulting in an under-reporting to management of the work done by the technicians. John and Mike (POY) were pragmatically satisfied with the system they had been provided with for this purpose: a customer relationship management application that kept this bureaucratic side of their work light vis-à-vis what it might have been had an ITSM support tool been deployed. It might be reasoned that this way of working went cheek-in-jowl with the lack of control over the workload.

> John: *Funnily enough because [the program they use here] isn't designed to be a call logging system it works very very well as a call logging system… You will find that most engineers hate to do the paperwork, that side of things. Most of them have got the mentality of '**it's the paperwork; it's not my job**.'*

In common with the workers at Poyet, those at Server Control took a pragmatic stance towards the incident logging system, with Nigel describing it as '*an okay system [that] … we can do what we need to with,'* and Anthony commenting that *'it's functional'*. Another important technological support system in operation at Server Control was Instant Messaging which appeared to enhance the fulfilment of efficient service to customers. The interview data suggest that there was universal support for its functionality and manner of implementation. This is particularly interesting given the potential for it to be used as a real-time covert management communication channel, and as a mechanism for restricting the extent to which technicians orally conversed, or felt free to do so. Nigel confessed that he disliked noise in the office and suggested others did too and that Instant Messaging was employed in the office to '*keep it quieter'* and in his perception (which as an outside observer I found challenging) *'a bit more easy going,'*

> Nigel: *We have encouraged it because … I want the team to talk within each other. We have had problems in the past that for a small team sitting in the same office we couldn't communicate very well so the IM* (instant

> messaging) *is something that is an easy way of doing it... It's not talking over someone who is on the phone to a customer... We instigated it for those reasons and it does seem to work relatively well. And … where they … quite like to get involved in problems when I don't probably want them sidetracked… you can have a conversation with someone about it without everyone else jumping in to the conversation as well, which has been a problem. One person who doesn't work here now was particularly notorious… Any conversation he could get into would turn into a nightmare.*

Interestingly, the technicians spoke enthusiastically about its use, providing in interview a range of benefits. These included the real-time sharing and gathering of information/knowledge within the team whilst on the phone to customers, and the speed and brevity of response from technicians in Hong Kong. For Lionel, the key benefit was similar to Nigel's: the stifling of oral communication methods: '*It's just less disruptive.'* An explanation for this apparent self-sacrifice of the freedom to speak openly, was a common yet unspoken need for a quiet working environment so that they might concentrate on their work of investigating and resolving (often complex) incidents.

Service-Oriented HRM Practices: Recruitment

Type 1 Workers

Amongst those Type 1 workers observed and interviewed there appeared to be a contrast between the recruitment criteria used for those who had been recruited recently and for those recruited some time ago.

Whereas recruitment onto the Stoneworks IT service desk had historically been based on technical skills criteria, there had been a deliberate shift in recruitment policy at both UKHEE and SCC towards giving greater emphasis to

technical skills ability. This was to support ITIL-influenced management decisions to increase the number of incidents resolved without recourse to second-line teams. Thus Adam and Sandra (SCES), who lacked any significant technical qualifications, were of the opinion that their recruitment was based on their 'personality' they presented at interview.

> Sandra: *I think they were looking for a definite type of personality… We've all got a similar sense of humour and I think that goes a long way to making a good workplace.*
>
> Adam: *I always give a good account of myself when it comes to the interview. The feedback I had was that I was the most suitable for the job.*

Their recruitment experiences can be contrasted with the more recent batch of recruits onto the main corporate services service desk. These workers had been recruited largely on the criteria of possessing formal technical qualifications rather than on their customer service experience or contextual knowledge of the organisation. This recruitment exercise had resulted in a corporate services service desk comprising early career young men. With a similar measurement-focused concern for first level resolution of incidents, the Stoneworks service desk now comprised a similar demographic and recent recruits to the UKHEE IT service desk had objectively (i.e. based on educational qualifications) boosted the technical skills of the team. On balance the evidence from this research suggests that IT service managers currently prefer to recruit technically-trained personnel into Type 1 roles, implicitly reducing the importance of personality traits. Nonetheless, the customer-facing nature of the role suggests that interpersonal skills or traits would be more important for Type 1 workers than for Type 2 workers, particularly where processes remained whereby incidents were quickly escalated to Type 2 workers, as was particularly the case at UKHEE.

Type 2 Workers

From the interview data, the recruitment of Type 2 workers appears to run contrary to typical HRM practice for the recruitment of service workers in that the overriding criterion appears to be having relevant discernible knowledge, primarily of a technical nature. Personality traits would appear to be of a much lesser concern to managers recruiting for staff for Type 2 teams, at least from the perspective of those being recruited. Several of the Type 2 workers had not been directly recruited into their current role. Charles (STOD) had been promoted from Stoneworks' service desk, a reward for demonstrating technical competence as a Type 1 worker. Tom, Dick and Harry (SCCD) had arrived in their present team and role as a result of IT technical work being systematically centralised, or as Harry put it, *'through osmosis*'. Tom explained further: '*it's just evolved [through amalgamations] from our disparate IT department teams and central IT'*.

When asked why they thought they had been recruited into their teams, Gareth (SCES) and Stephen (SCCD) mentioned their technical experience and expertise. Specifically Stephen considered he had impressed the recruitment panel with the breadth of his technical experience:

> *I think my skill set matched what they were looking for; because, working for yourself, you've got… a lot of experience of technologies that other people don't come into contact with.*

Roger (SCCS) and Lauren (STOB) felt that, rather than their specific technical knowledge, it was their personal contextualised business knowledge that was key to their recruitment.

> Roger: *I was recruited into the team because I had some specialist knowledge of the social services department where I had worked previously, and because I had some in-depth knowledge of a new application…. that nobody else on the team had.*

> Lauren: *We would only have people internally come into our job... They need knowledge of the business… it's more a software package that we are supporting so as long as you know the package and the business.*

Whilst Type 2 workers arrived in their posts by various mechanisms, what is clear is that the skills and traits most commonly associated with customer service were *not* of significant importance to the recruiters.

Type 3 Workers

When circumstances required it, recruitment practice at Server Control had been primarily a matter of using the personal networks of the technicians and this had resulted in the employment of workers who had fitted in well within the team and came with a background in programming. The only exception to this was Darren who was recruited via an advertisement in a local newspaper on the strength of his experience of '*fixing computers*' and dabbling with Linux at home: '*I started looking into Linux and stuff like that and then this job pops up in the paper so I came along and managed to get it'.* Following Pierre's recent resignation, Anthony had recommended a friend and he was subsequently recruited as a replacement:

> Anthony: *The reason I started here is because somebody else who used to work here recommended me and again I'm recommending someone else and kind of passing it on... I think previous members of staff have been recommended through word-of-mouth because Craig seems to like that. He prefers personal recommendation rather than just getting someone in off the street.*

Whilst one might be cynical and argue that recruiting through word-of-mouth was an economical method, it also suggests a strategy of recruitment in the image of the team, so as to ensure smooth continuity. Technicians would be best-placed to adjudge whether someone they knew already would be a good

fit for Server Control; for example, that they would thrive in a quiet focussed workplace. It also perhaps increased the likelihood that the company might continue to exclude women from the workforce, though it would be unfair to accuse the management of overt sexism in recruitment. Nigel suggested the key factors for recruitment into the team were: '*someone who is very into IT and does understand networking* [and]… *problem solving'*. Not only did he not mention customer service skills, he appeared to belittle Type 1 workers by explicitly ruling out those who had been '*just sitting in the call centre situation*.' The implication is that the corporate belief system at Server Control was that customer service skills are assumed. Their concern was clearly one of empathising with the customer's concern to have their incident resolved quickly and that excellent customer service stemmed from excellent contextualised technical knowledge: '*the main thing is knowledge of customers'* (Anthony) rather than generic customer service skills.

Similarly, at Poyet the technical skills of the Type 3 workers were of primacy, with customer service skills secondary. John was a recent recruit and had been brought into the team, with less of a concern for his ability to handle support incidents, but more on the grounds of his knowledge of virtualisation that was considered by the CTO as being important for the future of the organisation:

> *When I was being interviewed for the role it was very much: '**We want you to come in and we want you to change our systems over … future proof us and push us through to … the next level**'. So there is a bit of doing your day-to-day side of things… the calls and tickets… but what I'm meant to be doing is… pushing through the virtualisation.*

Although Mike had been at the company for four years he had recently had to re-apply for his job as part of a downsizing exercise. It was apparent to him that it was his superior contextualised technical knowledge that enabled him to retain his job rather than his less experienced colleague. Paula, however, had

been recruited from a customer service background and as supervisor had a more limited technical role.

Service-Oriented HRM Practices: Training and Development

Type 1 Workers

Training did not appear to be particularly prioritised across the teams, in as much as there was evidence of piecemeal training being provided but no evidence of training strategies. The only evidence of workers being trained in interpersonal skills was Doris' mention of having achieved an NVQ Level 2 in Customer Services through the construction of a portfolio of evidence from her work. Rather, within the SCC and Stoneworks service desks the emphasis of the training received tended to be on understanding the in-house systems being supported, i.e. technical training from the user perspective. Adam (SCES) described such courses as '*fairly low level training*'.

When asked what training opportunities they had had, Judy and Kate (SCCS) felt these had been plentiful but they had chosen to not always engage with them:

> Kate: *There has been quite a bit really actually. I'm not a great training person as in I would hate to go on a proper training course: don't suit me; don't learn a thing; haven't got enough concentration.*
>
> Judy: *We've had the opportunities.*
>
> Kate: *I have been given* [them] *here with perhaps a bit of one-to-one training or shorter sessions…*
>
> Judy: *Just to learn a particular thing*
>
> Kate: *When systems are being upgraded and stuff like that. They've been good enough.*

Type 2 Workers

Of the eight Type 2 workers interviewed, only Lauren had not had the opportunity to undertake formal Microsoft accredited training leading to recognised technical qualifications. In particular, the second and third line technicians at SCC had been accorded ample opportunities to engage in IT career-enhancing training:

> Stephen (SCCD): *Last November I went on a week's networking course which was useful. When I got involved in the Blackberry project we went down to Vodafone's headquarters in Newbury and had a week's training there… If training needs to be done, they are good at providing it.*
>
> Roger (SCCS): *We've done the ITIL training, project management stuff, … MCSE [Microsoft Certified Software Engineer], … lots of specialist internal training for the hundreds of different systems that we've got in here, … I've done training on Lotus Notes, active directory stuff*
>
> Gareth (SCES): *We had a bit of Windows 7 training. I got a MCP [Microsoft Certified Professional] but that was off my own bat, but they paid for it.*
>
> Harry (SCCD): *Some of us have done CCNA [Cisco Certified Network Associate], Microsoft certified professional exams, a bit of ITIL, some have done Prince 2 Foundation.*

The clear emphasis of training for these workers was on the specific 'hard' technical skills and not the generic 'soft' customer-oriented skills.

Type 3 Workers

The focus of the limited training received across the two Type 3 teams was technical. The budget restrictions at Poyet had meant that there had been no opportunities for formal training for Mike or Paula. John as a new recruit had received no induction training and had none planned. However, Paula expressed concern about John's customer service skills (despite him saying that '*you've got to be customer-focussed twenty-four seven*') and suggested she would need to address the matter, although it was unlikely that this would be done through training.

> *I don't think [John] has that customer focus that Mike's got and it is something that we need to get working on.*

Despite being a small operation Server Control had invested in significant training for the technicians, but all of this was for them to achieve technical accredited qualifications – notably in Systems Security - that might serve the company well in terms of achieving corporate IT security accreditation and selling their security systems and 'expert' support.

Service-Oriented HRM Practices: Rewards and Recognition

Type 1 Workers

No research data were collected regarding extrinsic rewards. However intrinsic rewards were often referred to in interviews, particularly recognition of good performance with words of gratitude. Previously it was noted that Type 1 workers were typically motivated by customer recognition and gratitude. Here the recognition of good performance is extended to include recognition from managers and colleagues in other teams, both of which it is suggested might potentially be significant sources of both positive and negative intrinsic reward and recognition. This comes across strongly in the interview with Judy and Kate

(SCCS) as they recalled (at different points) being addressed by a senior manager of the IT Division at a recent team meeting:

> Judy: *We had a thank you this morning - sort of, but he missed us off* [laughs]… *But then he realised* [still laughing] *and he added us on …*
>
> Kate: *We've sat in a meeting today and he couldn't wait to show you the stats of phone calls that have come through on the service desk*
>
> Judy: *Yeah nothing about how many CAS requests we have done*
>
> Kate: *And then when I said to him '**Wooa! do those stats include all those active directories that we have put through?**' '**No I haven't included any stats from CAS**'...* So you think: '***Thanks very much where's our bloody contribution gone to.'***

The importance of colleague-recognition is similarly mentioned in the interviews. Navinda (UKHS) implied that being recognised by colleagues was particularly important for service desk workers given their low organisational status:

> [The team] *just needs to be encouraged and pushed in the right way. Sometimes a pat on the back for the team pushes you to say '**Oh we are doing okay**' and encourages you. But if somebody says* [whispered] '***Oh my God the Service Desk'*** [end-whisper], *what they don't realise, it brings down the whole of the IT Department, not IT Service Desk.*

Kate intimates that often it is not so much about recognition of good work but merely recognition of presence and intrinsic value as a human being going about their work conscientiously:

> *I've walked up to some people and I've literally stood alongside those people, and sometimes they haven't even*

picked their head up and looked at me; yet… they know you've gone there for a reason and to not even pick your head up...

Type 2 Workers

In spite of the greater autonomy accorded to Type 2 workers than Type 1 workers, and a greater emphasis on the intrinsic reward from problem-solving, recognition from management as an acknowledgement of their contribution to the meeting of organisational goals seemed to remain of significant importance to several of the interviewed Type 2 workers. Typical views were expressed by Charles (STOD) and Stephen (SCCD). Charles expressed an annoyance at managers taking credit for the work he'd done:

So you know if you've done all the donkey work and … they've been, like, the project manager… and they've not obviously thanked you. It's thanks at the end of the day; just being polite really.

Similarly, Stephen noted a lack of acknowledgement and gratitude expressed by managers:

*You don't know if you're doing a good job or a bad job.... I just like to have some confirmation that what I'm doing is good and meeting or exceeding expectations… There won't be a '**You did a really good job thank you very much you did well there'**… There won't be '**Thank you very much, that was fantastic, good work, keep it up'**… It would be nice. It's what you strive for. But very rarely do you get a slap on the back and they say '**Thank you very much, that was brilliant.**'*

For Lauren (STOB), the lack of acknowledgement from managers beyond the team was even more marked:

> *We don't really have much communication from them… I think we kind of get missed. Within IT they have this special award that people get for doing outstanding things but no one has ever had it off of our team.*

Type 3 Workers

At no time during the visits to both Poyet and Server Control was there any evidence of managers overtly praising the workers. However, at Server Control workers were observed being highly engaged in their work and the interview data suggest that management were aware of the benefits to be gained by being generally supportive and willing to provide a career path even within the constraints of being a small company. Nigel reported, *'as the company has grown I have gone up the management tree with it'* and Lionel spoke of management recognising the rapidity with which he had established a high level of expertise:

> *I'm very motivated and quick to pick things up, and it shows in that management have recognised me and promoted me above people who have been here longer than me.*

Consistently across the interviews the company and the managing director were praised by the workers, suggesting that their efforts were being recognised in ways that were important to them as unique individuals:

> Lionel: *I've never worked for as good a person as Craig. My other half is quite illness-prone… It has at times required me to leave in the middle of the day, to not turn up for work at all, and a lot of companies wouldn't stand for that... Craig is very supportive.*

Recognition of the team as a group is received and shared across all workers from customer sources via formal surveys and informally via the sales manager.

Whilst being typically positive, this feedback is not celebrated but rather used to further the company's sense of professionalism such that, through this, workers' self-regard might be enhanced.

John's early impressions of senior management at Poyet were similar to those of the workers at Server Control, but his colleague, Mike, with longer experience within the company, had a contrary opinion.

> John: *Directors and company owners are actually fantastic here… they are very concerned and want to make sure that everyone is happy.*
>
> Mike: *We hardly see them.... I don't speak to them. They don't speak to me.*

As previously suggested, Mike resented *'being taken for granted'* and marginalised, but he did retain the support of his supervisor Paula, although it is likely that he recognised that her influence within the company was not dissimilar to his. Paula herself admitted that she had adopted a cynical downbeat demeanour:

> *You can either 'protect yourself and protect your department' or you can just protect yourself and stuff everybody else… Mike is very, very exacting and Mike and I have worked together for quite a while … and we quality-check our work and I find it very frustrating that John doesn't.*

Whilst they differed in their opinions about senior management, Mike and John were in agreement about the more visible middle managers. John paused and sighed heavily in the middle of saying that '*middle management is poor management*'. Mike, indicating his state of general mistrust, gave a long heavy sigh and then declined to answer when asked the question *'What do you think about the management style?*':

> *Well I'd love to say, but I don't want to say it on tape.*

The clear impression was that in the climate of fear that Paula had spoken of, managers were not appropriately recognising and rewarding staff generally, rather than specifically those on the IT Service Desk.

Service-Oriented HRM Practices: Performance Management

Type 1 Workers

A formal performance management policy had theoretically been implemented across SCC, but in practice it appeared that the Type 1 workers were not given regular feedback on their personal performance. Adam (SCES), Sandra (SCES), Judy (SCCS) and Kate (SCCS) all reported very infrequent meetings with their respective line managers to discuss their performance. Judy reported that her last meeting was six years' ago and Kate cuttingly commented on Judy recalling that the last two meetings had been cancelled: '*So we're extremely valued you see* [both laugh].'

From conversations with senior management, significant attention was given to statistics relating to the number of incidents worked by the teams. However, Adam was typical of workers at SCC when he said he had '*absolutely no awareness*' of management measuring his performance. Sandra and Kate independently reported that they were similarly unaware.

There were formal performance management processes in place at Stoneworks, and Ravi (STOS) as IT Service Desk team supervisor was tasked with appraising his team. He suggested that, whilst formally constructed, the processes were in practice informally implemented: '*the appraisal just seems like more of a sit down with the guys and having a bit of a talk*'.

Whilst ITSM 'best practice' encourages managers to record copious quantitative data and measure the performance of processes, the data suggest that the performance of the workers as resources within those processes was measured at best on a piecemeal basis and was not used for improving

process efficiency. Adam revealed that managers send out questionnaires to schools who were his team's 'corporate customers' as a way of measuring performance: '*all of the feedback questionnaires that go out always seem to be fairly positive so I think we must be doing something right*.' However, there was no suggestion that this data fed back into the formal worker performance management process.

> Adam: *Because there's no metrics - it's not like* ***'Yeah, I'm the best performer this week****'… it's well, what happens on a Friday is you go home: that's it.*

Type 2 Workers

Even if they were not of significant daily concern to the Type 2 workers at SCC and Stoneworks, SLAs set the parameters against which their managers and customers judged them as efficient and effective. Documentary evidence collected at both organisations indicated that extensive quantitative monitoring at team level was engaged in by management.

Performance for a technician also needs to be considered at the qualitative level: e.g. how effective she is at resolving incidents such that they do not recur or result in difficulties further down the line. Stephen (SCCD) had a vague awareness of qualitative monitoring of his work: '*Occasionally you'll get wind of something going on, like incidents are being monitored and checked but nothing specific. I don't think it's managed to the n'th degree.'* Roger (SCCS) suggested that: '*I think the emphasis is very much quite often placed on us as the team to monitor the performance of ourselves and of other members of the team.* The suggestion is that whilst management, in line with ITSM 'best practice' concerned themselves with collecting and analysing team-level quantitative data, the management of team performance quality was left to the 'technical experts' to carry out in a more informal manner.

At an individual level, the Type 2 interviewees at SCC, whilst being subject to the same performance management processes and timescales as Type 1

interviewees, had more regular reviews. Roger (SCCS) reported having a formal review every six months and ad-hoc discussions in between. Gareth (SCES) reported he was *'forced to have a six-month review'* and Tom, Dick and Harry (SCCD) agreed that it was the norm to have performance reviews every six months, albeit that, according to Harry, '*historically it's not been as often as it should have been'*. Interviewed independently, their teammate, Stephen, thought that reviews were '*supposed to be once a year*' and he was '*hoping it's going to come round again.*'

Type 3 Workers

The management at Server Control had implemented a formal annual appraisal, and additionally kept close tabs on the performance of individual workers, as explained by Nigel:

> *Basically Craig will appraise me and then Craig and I will appraise the rest of the team. We also have… discussions every week when Craig's up and… if necessary team members' performances are discussed.*

Personal goals were related to the additional project work rather than the support work which was expected to be of a consistently high quality. All the technicians agreed that they trusted their colleagues to meet their work obligations, with Anthony, perhaps in jest, suggesting that management closely monitored performance on an on-going basis and that '*you'd be scolded'* if you fell short of expectations. It is said that many a true word is said in jest and Nigel revealed that, assisted by the culture of quiet at Server Control, he surreptitiously monitored the work of the technicians and used instant messaging to communicate with Craig about performance issues as they occurred in real-time.

> *Occasionally if there's private stuff you want to talk between two people as in '**can you hear what's going on with that call'** type of thing, you can do it subtly that way*

*rather than have to take someone out and say '**have you heard what he just said**?'*

At Poyet the management kept their distance from the IT support desk. At the end of my time researching at Poyet I met with the CTO and the manager of the team and reported on my observation that the technicians appeared to work with some intensity. They remarked that this did not appear to be reflected in the statistics gathered on incident resolutions. I implicitly questioned the validity of their performance measurements on the grounds that not all of the work that the technicians did could be directly related to an incident because the workers often got side-tracked. Throughout the time I was at Poyet it was rare for the manager of the team to speak with the workers. The separation that she created was perhaps mitigated by Paula's role as supervisor, but nonetheless resulted in a situation where Mike fed back to himself on his performance, *'congratulating myself as a joke'* because *'no one else does'*.

Service Provider: Service Worker Tension

Previously in this chapter a model was introduced (Figure 5.5). This was designed to provide a convenient illustration of the tension between the conflicting needs and desires of IT service support workers and their employing organisation. On the one hand, workers were presented as having a desire and/or need to (i) engage in convivial interaction with colleagues as part of their everyday working practice, and (ii) work creatively to develop their skills. On the other hand, their employers, as service providing organisations were presented as having a desire and/or need to employ rationalising management tactics to optimise the productivity of their workers: thus, notice was taken as to the extent to which established processes and bureaucracy appeared to impact upon: (i) the intensity at which workers worked; and (ii) workers opportunities to work creatively.

This model was used as a reflective and interpretative tool to present different images of the tensions existing in each of the observed teams between

the fulfilment of the respective needs and desires. A spectrum scale of between 1 (Low) through 5 (Medium) to 9 (High) was used to quantify each of the elements, with scores being applied interpretatively by the researcher based on subjective analysis of the qualitative data.

By process of aggregating and averaging, diagrams were prepared for each of the three types of IT service support work (giving equal weighting to all teams observed). These are presented below. Team-level diagrams and commentary relating to each of the teams can be found at Appendix P.

Table 5.3 shows the interpreted scores for each element for each Type 1 team. The model representing all the Type 1 work (Figure 5.15) shows a tension pulling in the direction of the organisation. This reflects both Type 1 work's similarities with the call centre environment and its suitability for rationalisation and high-intensity working.

Element >>>	Economic (Work Intensity)	Convivial Social (Colleague Interaction)	Developmental (Creative Challenge)	Rationalisation (Creativity Suppression)
Stoneworks Service Desk	7	3	3	7
SCC Corporate Service Desk (Tier 1)	4	3	5	6
SCC Education Service Desk (Tier 1)	4	4	4	4
UKHEE IT Service Desk	4	6	2	6
Aggregate	19	16	14	23
Average for Type 1	4.75	4	3.5	5.75
Spectrum Scale: 1 (Low), 2, 3, 4, 5 (Medium), 6, 7, 8, 9 (High)				

Table 5.3: Service Provider: Worker Tension: Type 1 Interpretative Scores

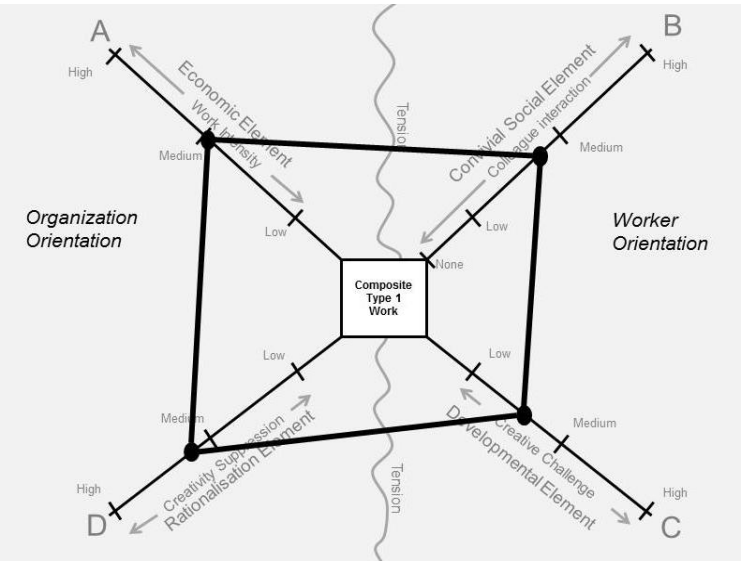


Figure 5.15: Service Provider: Service Worker Tension: Type 1 Work

Table 5.4 shows the interpreted scores for each of the model's elements for each Type 2 team. The model representing all the Type 2 work (Figure 5.16) shows a tension pulling more in the direction of the worker as their needs/desires to work creatively and collaboratively are met and they are subjected less to overt controlling management techniques.

Element >>>	Economic (Work Intensity)	Convivial Social (Colleague Interaction)	Developmental (Creative Challenge)	Rationalisation (Creativity Suppression)
SCC Corporate Service Desk (Tier 2)	4	3	5	3
SCC Corporate Desktop Services	2	7	6	1
SCC Education Service Desk (Tier 2)	4	4	5	4
Stonework Business Services	6	8	6	4
Stonework Desktop Services	6	4	6	3
Aggregate	22	26	28	15
Average for Type 2	4.4	5.2	5.6	3
Spectrum Scale: 1 (Low), 2, 3, 4, 5 (Medium), 6, 7, 8, 9 (High)				

Table 5.4: Service Provider: Worker Tension: Type 2 Interpretative Scores

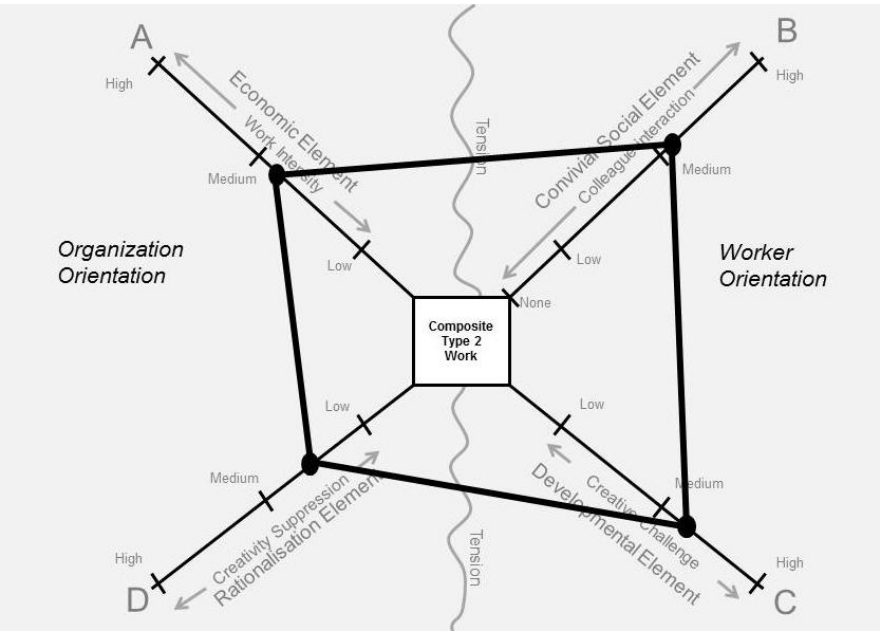


Figure 5.16 Service Provider: Service Worker Tension: Composite Type 2 Work

Table 5.5 shows the interpreted scores for each of the model's elements for each Type 3 team. The model representing Type 3 work (Figure 5.17) shows a diamond shape, pulling the tension in both directions. This reflects on the one hand, relatively low levels of conviviality, compensated for by considerable creative challenge for the worker; and on the other hand, significant relinquishment of management control to the workers over the what, how and when of incident management, compensated for by high intensity productive output from the workers.

Element >>>	Economic (Work Intensity)	Convivial Social (Colleague Interaction)	Developmental (Creative Challenge)	Rationalisation (Creativity Suppression)
Poyet	8	2	7	1
Server Control	6	2	8	6
Aggregate	14	4	15	7
Average for Type 3	7	2	7.5	3.5
Spectrum Scale: 1 (Low), 2, 3, 4, 5 (Medium), 6, 7, 8, 9 (High)				

Table 5.5: Service Provider: Service Worker Tension: Type 3 Interpretative Scores

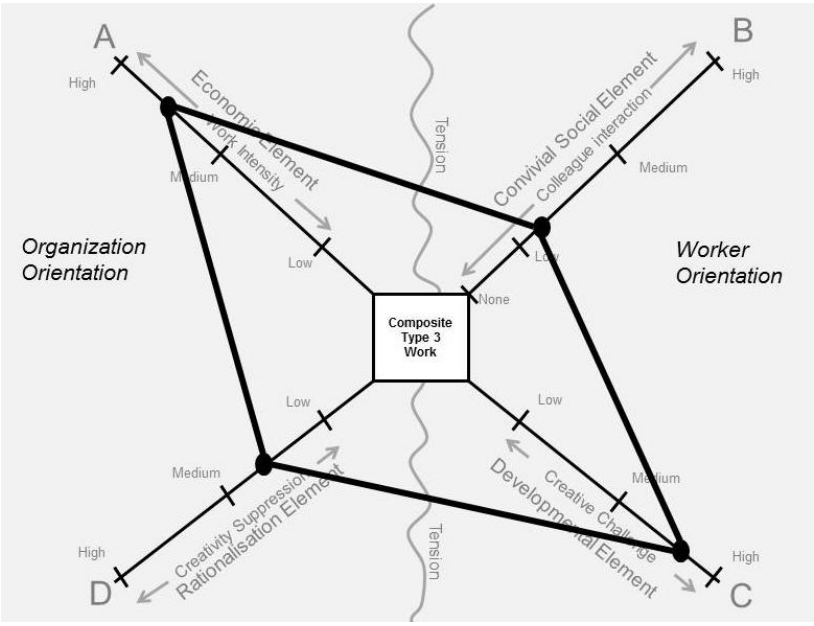


Figure 5.17: Service Provider: Service Worker Tension: Composite Type 3 Work

By superimposing the three composite diagrams above onto the same model an illustration is given of the similarities and differences between the three types of IT service support work (Figure 5.18). This reveals that work intensity, typically associated with Type 1 work is particularly strong in the Type 3 work environments observed. Here the workers have an intimate awareness of the customer's needs and timescales whilst at the same time do not have an option of referring incidents onto others outside of the team to relieve pressure. At the same time, this work is also shown to offer great opportunity to work creatively and develop skills. These two factors appear to come at the expense of being able to enjoy sociable relationships at work.

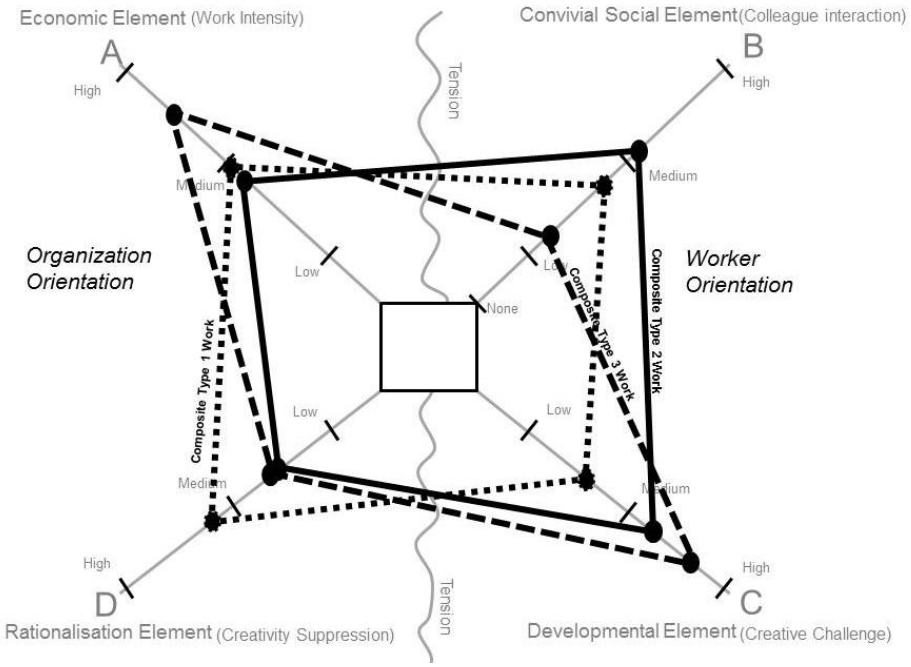


Figure 5.18: Service Provider: Service Worker Tension: Comparison between Work Types

9 Discussion: 'The IT Service Support Worker as Service Worker

One focus of this chapter has been the tensions within the psyche of the IT service support worker that results from '*the management rhetoric of 'customer care''* (Noon and Blyton, 1997, p. 45) that is endemic within ITSM settings. How might they weigh the directive to serve, implicitly making themselves beholden to the needs of service recipients, with a more pragmatic motive to practice their craft of resolving technical incidents, and a more self-oriented desire to develop their knowledge/skills through *'sliding and morphing'* (Gratton, 2011a)?

This is important for the comprehensive drawing of a picture of the IT service support worker. IT service support workers have in the previous chapters been considered as IS assets and knowledge workers. We have now established that they must also be considered in terms of the extent to which they adhere to this rhetoric of customer service and formulate their identity as a worker in relation to it. The identified tensions between their 'needs and wants' and the 'needs and wants' of their employer, as well as those of the corporate

customer and the individual 'users' of the service they support, are important for them as humans with souls seeking meaning in their lives (Gratton, 2000). If these tensions cannot be satisfactorily resolved then IT service providing organisations run a risk of having an IT service support workforce that is not optimised in terms of capability for the recovery of failed services (Michel *et al*, 2009).

Analysis of the data within this chapter revealed several points to elucidate conception of the IT service support worker from the perspective of them being considered as service workers. Firstly, the central role of the customer as the immediate beneficiary of their work is confirmed. Secondly, comparisons with call centre work, previously discussed in Chapter 3, are shown to be valid to a limited degree. Thirdly, all forms of IT service support work call for emotional labour on the part of the worker. And fourthly the data suggests that practices that have evolved to support the management of service workers are not entirely suitable for the management of IT service support workers. Each of these is now discussed.

Customer Focus

IT service support workers are typically highly customer-focused. This is particularly, but not exclusively, the case for those workers for whom a significant part of their job entails directly communicating with customers (i.e. Type 1 and Type 3 workers). For Type 1 workers the data suggest that service is seen as being primarily interpersonal: personally 'serving' or helping 'real' people in difficulty. For Type 2 and, particularly, Type 3 workers, service is seen more in terms of the system within which they and the 'real' customer are commoditised and the relationship is strongly perceived as being contractual based on an SLA. Here the service relationship of importance is the inter-corporate one rather than the interpersonal one. Thus, it might be said that from the perspective of Type 1 workers the concept of service is primarily social (interpersonal) and for Types 2 and 3 workers primarily economic (inter-corporate). In this way the social status of Types 2 and 3 workers as service

providers might be maintained at a comparable level to their service recipients. This contrasts with Type 1 workers whose status is revealed to be one of humility *vis-à-vis* the service recipients. The nature of the interpersonal transaction between 'master' (individual service recipient) and 'servant' (Type 1 service provider) marks out the Type 1 worker as an evident service worker. However, in the broader sense of service relating to a system, Types 2 and 3 workers must also be regarded as service workers because they are an integral depersonalised working part of a corporate 'providing' system that typically serves a corporate 'customer' system.

The effects of rationalising management techniques employed by managers influenced by ITIL was apparent during the observations; and chief among these was an apparent unemotional invariability of service provided to customers – despite workers revealing in interview the emotional nature of the work. One might deduce that workers felt the need to control such emotions whilst working so as to present a 'professional' image of themselves. Whilst technical capability varied across the population of IT service support workers observed and interviewed, communication with customers was overwhelmingly and consistently functional. Typically, in the case of Types 1 and 3 workers, this was influenced by the information requirements that were technologically-imposed by the workflow management system that was used for logging incidents. In this respect, workers were depersonalised and anonymised.

Previously in this chapter, it was argued that such depersonalisation may result in management neglecting the capabilities of IT service support workers to critique and improve upon the processes with which they worked, and the systems in which they worked. It was noted that even though they were the people closest to these processes and systems, ITSM 'best practice' fails to acknowledge the contributions workers might make to improving efficiency. The evidence from the study tends towards supporting that this 'best practice' is prevalent. The message writ large is that IT service support workers tend to fulfil only those responsibilities that are defined for them by management and these did not include taking on or sharing with management responsibility for the design of their work processes, the service levels they worked to or the selection of tools they had available to them. And yet, many of the workers

revealed in interview an innate concern for efficiency and in their practice, instinctively made decisions that were based on their personal judgment as to what was the most efficient way to progress an incident towards resolution. In line with the '*law of less work*' which maintains that actions are chosen so as to minimise both physical and cognitive work demands (Kool *et al*, 2010) and Kahneman's (2011, p. 35) observation that '*laziness is built deep into our nature*', IT service support workers, working under tight time pressures, often side-stepped management processes in order to work in what they perceived to be the most efficient way. Examples of this included: John's subversion of the management requirement to record all service issues requiring activity as incidents by making a personal judgement as to '*the benefits of raising a ticket'*; and a general preference to use interpersonal communication for knowledge sharing purposes rather than the ICT tools that had typically been implemented by management to encourage the codification and sharing of knowledge (see Trusson *et al.,* 2013). The suggestion is that, by *re*-personalising the *de*-personalised and 'squeezed out' worker, management might potentially benefit from 'wise words from the coalface' on potential efficiency improvements.

ITIL is implicitly distrustful of workers as an unreliable system resource (explicitly making reliability comparisons with technological resources) and encourages managers to demand attentiveness, reliability and courtesy from their workers. However, the evidence from this study suggests that when dealing with customers, workers display all of these attributes and work diligently without outward displays of resentment. Of course this might be seen as evidence of successful management, but alternatively it can also be seen as evidence that the controlling rhetoric of ITIL reveals false and potentially damaging assumptions about IT service support workers who adeptly manage their emotions to maintain their individual identities as meaning-seeking 'professionals'.

The role of the customer as a provider of esteem-affecting feedback (i.e. positive and negative) has also been indicated by the data. This data suggest that positive feedback may be particularly important for the self-respect of those IT service support workers whose work is intense and offers few opportunities for working creatively and developmentally. Typically these are Type 1 workers.

For Type 1 workers the gratitude of others appears to be a surrogate for the work itself providing job satisfaction. Such gratitude might be supplied by customers or management, but the data suggest that it is interpersonal thanks from customers that are particularly important for the provision of job satisfaction.

Whilst still significant for more technical IT service support workers (i.e. Types 2 and 3), customer gratitude for personal service provided appears to be of lesser importance than the application and development of skills for personal job satisfaction. In this sense Type 1 workers might be regarded as being more intrinsically service workers than Types 2 and 3. Typically they personally 'give' of themselves in serving others without receiving to any great extent the intrinsic reward of on-going development of technical skills. Such development, where it is desired, is typically thwarted by bureaucratic procedures and time pressures placed upon them. What unites the workers is that, as Marks and Scholarios (2006) suggested it would, customer service had become an integral part of their work as IS professionals/workers, but that the increasingly apparent need to '*slide and morph'* so as to retain and build marketable skills had resulted in a tension between: bringing about an improved situation for the customers they served; and securing/improving their own career situations. Because of the greater autonomy accorded to Types 2 and 3 workers over how they engaged with their work, this tension appears to be more manageable for them than for Type 1 workers.

Earlier in this chapter, it was shown that the idea of the 'customer: worker satisfaction mirror', whereby workers gain job satisfaction as a consequence of generating customer satisfaction, had implicitly been adopted within ITSM 'best practice'. The veracity of this idea had been questioned by Korczynski (2002) in part on account of its failure to consider alternative causes of worker job satisfaction. The data from this research confirms the attractiveness of the idea, with the customer featuring heavily in responses to the question: '*What gives you pleasure at work?*' This was particularly so for Type 1 workers for whom the opportunities to gain job satisfaction by doing work that was varied and interesting was limited. However, in line with Korczynski's argument, other reasons for pleasure were given, notably in the case of many of the Types 2

and 3 workers, the work itself, specifically work that was challenging and developmental.

Additionally, we might contribute to the discussion on the 'customer: worker satisfaction mirror' by noting that the findings suggest an equally valid idea of a 'customer: worker negativity mirror', i.e. a customer acting in a way that is perceived by the worker to be negative (or, to re-quote the interviewed workers, '*grumpy'; 'uptight and angry'; 'challenging'*) causes the worker displeasure, with the negativity of the worker reflecting back to the customer. In this respect a comparison with the individual emotional management requirements of call centre work may be relevant.

Call Centre Comparison

The difference between Type 1 and Types 2 and 3 workers in terms of being most identifiable as service workers also comes across in the consideration of the question that was first broached in Chapter 3: 'To what extent is IT service support work synonymous with the type of service work that is performed in call centres and which is typically held up as the epitome of office-bound service work (e.g. Frenkel *et al*, 1999; Korczynski, 2002)?' The data presented in this chapter reveals similarities between Type 1 work and the high pressured call centre service work with which IT service support work has been synonymised (Beaumont and Hunter, 2002; Gray and Durcikova, 2006; Murphy, 2011).

When writing about call centres, Taylor and Bain (2003, p115) portrayed the work of the call centre operative thus:

> *An uninterrupted and endless sequence of similar conversations with customers she never meets. She has to concentrate hard on what is being said, jump from page to page on a screen, making sure that the details entered are accurate and that she has said the right things in a pleasant manner... The pressure is intense because she*

knows her work is being measured… And it often leaves her mentally, physically and emotionally exhausted.

Certainly, this is a familiar scene for some Type 1 IT service support workers. The Type 1 workers at Stoneworks worked in high-sided worker corrals, isolated in their small desk spaces by high-sided screens and by the headsets they wore. They were loomed over by a large overhead performance management monitor and their supervisor sat with them, by the only door to the room. The phone rang constantly as they never caught up with the urgent workload coming in from customers waiting to speak to them. And they went home exhausted. Some of these characteristics were observed elsewhere and there were signs that the rationalising ITIL management mind-set was taking IT service support work generally in the same direction. For example on the UKHEE IT service desk, headsets were gradually being deployed with the arrival of new staff from other IT service support environments where such equipment had been routinely used. Also shoulder-height screens had recently been fitted to the sides of desks to isolate workers within individual corrals. However the data illustrates that to justify synonymising IT service support work with call centre work on account of these factors would be to disregard the different nature of back-office IT service support work that demanded the use of a considerable personal stock of knowledge/skills. Type 3 work does share some of these markers of working to a high-intensity but not sufficiently so as to warrant synonymity. The nature of this intensity differed between the two Type 3 offices observed. At Poyet the work had most likely become intense because it was poorly controlled and under-managed. However, at Server Control the work was methodically managed with incidents being reported by customers via a web interface or by e-mail. This diminished the need for workers having to instantly respond to the interruption of the telephone ringing as was the case for Type 1 workers. In this way the work appeared less frantic and intense and more under control than at the busy service desks. Of the two organisations at which Type 2 work was observed there was a noticeable difference in the intensity of work. At Stoneworks both Type 2 teams were constantly busy with the workers on the Desktop Services team typically multi-tasking across multiple hardware and monitors. Workers went home at the end of their shifts

mentally tired. However, the nature of this work was far removed from the work of call centre workers since it entailed a broader range of activity, greater autonomy, and minimal direct contact with the customer. Intensity of the work on the Type 2 teams at SCC was less apparent although they reported variable workloads that included times of high-intensity.

Thus, it might be said that the comparison between call centre work and IT service support work is valid but up to a limited point with significant contrasting factors.

Emotional Labour

Hochschild (1983) suggested three characteristics of jobs that call for emotional labour: (i) voice-to-voice contact with the public; (ii) producing an emotional state such as gratitude in another person; and (iii) the concession to management of control over emotional activity. Given these, the evidence tends towards confirming that IT service support work entails emotional labour across all three types. It is though particularly prevalent amongst Type 1 workers who spend more time managing their emotions to 'put on a public voice' that reflects the rationalised nature of their work as operators of a WFMS who receive telephone calls from 'customers'. The data points to many of these ‘customers’ overtly asserting their power within the bureaucratised system by communicating in either a cold and detached manner that implicitly dehumanises and thereby disrespects the worker receiving the communication, or with outright hostility, contemptuously belittling the worker (Sennett, 2003).

As discussed in this chapter, the socially-constructed norms of worker behaviour that emerge from the ITSM 'best practice' rhetoric are such that workers take it as read that their job is to evoke, at the least, a satisfied, and at best, a gratified state in the service recipients; or as Navinda put it, so that *'they are not uptight and angry, or cheesed off*'. The data (see Figure 5.6) reveal the particular importance for Type 1 workers, who have most voice-to-voice contact with customers, of going beyond satisfying them to gratifying them.

The toll that such emotional labour takes on IT service support workers leaked out in several of the interviews. Roger spoke of being *'whacked out'* when confronted with customers making demands upon him that he couldn't readily meet because of work overload (Handy, 1985); Charles similarly found it *'hard'* coping with meeting the demands of the job when faced with customers *'shouting'* and *'chasing up*'; and Asghar reported that *'the need to stay calm… takes its toll sometimes*'. Most of the workers seemed fairly resilient to this, but for Judy the inability to produce a state of satisfaction or gratitude in 'customers', because of a lack of personal technical knowledge/capability, resulted in unbearable personal workplace stress. Unable to cope with the constant stream of phone calls coming into the service desk, demanding that she take actions she felt technically incapable of taking, she effectively retreated to the point of not wanting to talk to anybody. Being a naturally very communicative and emotionally 'warm' person she was, as Hochschild (1983, p. 154) puts it, faced with *'the emotional task [of suppressing] her feelings of frustration, anger or fear… [which] can be a terrible burden*'. Before too long, this burden was recognised by management as too much for her to bear and she was moved away from this role that demanded continuous voice-to-voice contact with customers. This specific interview evidence illustrates the need for managers to consider the ethics of an ITSM 'best practice' that dehumanises human workers. The implication of the ITIL guidance to recast human workers as dissembled resources and capabilities is that managers might reasonably abdicate responsibility in relation to the mental health of 'their' workers, arguing that their only concern is for their commoditised value as assets. An ethical stance, that values the sanctity of human existence, must challenge this.

Customer-oriented HRM Practices

The data collected and analysed relating to the factors closely associated with HRM practice within customer-oriented service settings suggest that the management of IT service support workers only partially adheres to such typical HRM practice. This begs the question as to why IT service support workers are

not typically managed according to the HRM practices adopted by corporate employers of the typical modern customer-oriented service worker.

The data reveal that it is the technical nature of the work that differentiates IT service support work in this regard. Service cultures are encouraged, team working implemented and, in the case of Types 2 and 3 workers, significant autonomy within a tightly defined working scope accorded, as might be typical of HRM practices for service work. However, recruitment, training and development, and performance measurement are more closely allied to concerns about contextualised technological knowledge with little evidence of concern for customer-oriented personality traits, training or reward systems.

We might conclude from this that if IT service support work is to be considered as customer-oriented service work - and it clearly is where ITIL has influenced tactical management (as in the case of all the teams observed) - it should perhaps be considered as an exceptional type of service work for which specific HRM practices need to be developed.

We have seen that there are clear similarities between IT service support work and call centre work, but the practices that have evolved alongside the extensive literature relating to call centre work might not necessarily translate well to the IT service support environment. In particular HRM practices designed to extract high productivity from call centre workers may be unsuccessful when applied to the work of technologically-skilled IT workers. In short, IT service support workers *can* be conceptualised as service workers on account of the general acceptance of the hegemony of the customer. They accept that they work at the behest of service recipients. For Type 1 workers service is shown to be of primary importance taking precedence over the development and use of technical skills that might help the worker to positively develop their career. The data suggest that for these workers the tension between: (i) the management directive to 'serve' customers '*in a pleasant manner'* whilst working with an intensity propagated through techniques of rationalisation; and (ii) an individual desire to develop, practice, and learn marketable skills is resolved to the advantage of management, typically leaving

the worker frustrated at the slow pace of their technical skills development and tired from the work intensity.

For the more technically-equipped Type 2 workers, the service element of their work is shown to be peripheral in comparison to technical practice and development. Here, the tension between what management wants and what the Type 2 worker wants is resolved more evenly. Workers adhere to the bureaucratic processes imposed upon them by management, working with intensity as required to meet a workload that is at arm's length to the customer and tends to ebb and flow in its intensity to allow time to thoroughly investigate incidents. Because such 'thorough investigation', by its nature, takes an indeterminate amount of time, Type 2 workers can assert their autonomy such that they are able to allocate time to developing their skills.

Generally for Type 3 workers, technical practice/development is likewise shown to have primacy but because the customer is a more present feature of their everyday lives than for Type 2 workers, the notion of customer service is constantly of significant importance to their practice. Thus, the intimacy of the relationship with the customer is similar to that of the Type 1 worker; and this seems to result in a similar work urgency and intensity that is not typically experienced by Type 2 workers.

10 Conclusion

In this chapter the IT service support worker has been considered from the perspective of their function being to provide a service to a customer entity. A difference was identified between a human form of service and a dehumanised form of service. The former was shown to be the dominant perception of 'service' within the discourse of those IT service support workers who are in routine communication with 'human' service users; and the latter was shown to be the dominant perception of 'service' in the hegemonic ITSM 'best practice' discourse. An argument was made that this difference is reflected in a series of tensions between the competing needs of IT service support workers, service

users, IT service providers and organisations receiving IT services (Figure 5.3). Following this argument, and representing a theoretical contribution of this study, a novel analytical tool was devised and presented to enable the comparative interpretative analysis of the tensions between the needs and desires of teams and types of IT service support workers and their employing organisation (Figure 5.5). Analysis using this tool revealed in diagrammatic form key differences in Types 1, 2, and 3 IT service support work, with Type 3 work found to be most intense yet at the same time most developmental, whilst Type 1 work was found to be relative intense whilst not offering developmental opportunities on account of workers creativity being suppressed. Type 2 work was found to be more balanced between meeting worker and management needs.

Another finding that contributes to theory was that as well as the customer being a key factor for the job satisfaction of frontline service workers generally, upholding the disputed theory of the customer: worker satisfaction mirror, the customers' actions are also shown to be key for understanding what makes service workers' experiences a cause of displeasure.

With a view to the practical benefits of this research, this chapter also considered how the literature on service-oriented HRM practice was reflected in the HRM practice experienced by IT service support workers. The data suggests that the technological dimension of this type of work demanded HRM practices that contrasted with those typically experienced by service workers.

Having previously discussed the IT service support worker as a type of IS worker/asset and knowledge worker, and now as a type of service worker, these considerations can now be brought together to form a more holistic conceptualisation of this socio-economically important role. This forms the core of the following concluding chapter to this research.

Chapter 6: Conclusion

1 Introduction

This explorative research was designed to address a significant gap in the literature: the lack of commentary on or consideration of the work of a particular type of IS worker that has emerged from the modern emphasis on managing IT as a service (as exemplified by 'best practice' guidelines such as ITIL). In attempting to satisfy this gap by raising awareness of the construct of the IT service support worker, this thesis has contributed to the business literature by conceptualising him/her as comprising aspects familiar within the literatures that relate to IS work, knowledge work and service work.

It was established in Chapter 1 that in the developed world there now exists a state of ubiquitous use and dependence upon IT systems for communication and the delivery of governmental and business infrastructure services (Carr, 2003; Greenhill, 2011). Especially given estimates that IT operations account for 80% of all IT budgets (Conger, 2010) IT service support workers are extremely socio-economically important, and yet somehow they have remained largely anonymous with a notable dearth of literature directly concerning them. Their importance lies in them being the link between the information systems and the users of those systems; and their capabilities to resolve situations, using what Swart (2011) refers to as know-how-in-action, when those systems fail to deliver the services they were designed for. They are the men and the women on the ground keeping the systems working; and yet they are little understood, alternatively being 'lumped in' with other IT workers, such as developers and technical specialists who may have little or no responsibility for supporting 'live' systems or services, or with call centre IT operators. In the introduction, examples of their significance were given, and two high-level research questions posed: 'What is the nature of their work?' and 'How should we understand and conceptualise them?'

A conceptual model was offered (Chapter 1, Figure 1.1) as a way forward for answering those high-level questions and further implying the lower-level

questions relating to the three aspects: how do we understand IT service support workers as: (i) rationalised IS workers/assets?; (ii) knowledge workers?; and (iii) service workers?

Whilst it has been made apparent throughout this thesis that IT service support workers typically operate in teams, individually contributing to the effectiveness of their team, a clear distinction between the team perspective and the individual perspective has not yet been made. Of course, if we are to understand the IT service support worker then we must also understand the IT service support team. Thus, much of the data presented and analysed, notably the model presented at figure 4.1, has been directed at understanding the nature of IT service support work at team level. However, in drawing conclusions from the study it is important to differentiate between research findings related to the IT service support worker as a member of a team which acts *collectively* towards team and organisational objectives that might be relatively short term, and the IT service support worker as an *individual* acting *individually* within the context of an *individual* career over a longer period of time.

Inevitably, in order to produce a convincing conceptualisation of the IT service support worker this thesis has been broadly-scoped and drawn upon a wide range of academic and lay sources. As such the discussions in the preceding chapters, including a range of novel analytical models have hinted at a set of theoretical and practical contributions to knowledge. In this concluding chapter the two research questions are answered. Firstly, the question 'what is the nature of IT service support work?' is answered from the rationalised perspective of it being a team-based activity, carried out differently by the three types of IT service support worker introduced in Chapter 2 as Types 1, 2 and 3. The second question 'how should we understand them and conceptualise them?' is partially addressed in this way, but the contribution in regard answering this question is strengthened by giving consideration to the worker from a more 'human' individualistic perspective. Above all else, this thesis stands against the anonymisation and interchangeability of workers that is implied by the systems thinking rationale of ITSM 'best practice'. Whilst still adopting a rationalised approach of typifying workers, the answer to the second

question entails an attempt to understand individual IT service support workers through a novel classification approach that identifies IT service support workers alliteratively as alternatively: Resigned Robots, Constrained Careerists, Establishment Experts or Aspiring Artisans. This offers a practical as well as theoretical contribution that might through further research be tested for applicability to other worker types. After these concluding answers to the research questions, a set of additional contributions is provided that serves to indicate the breadth of the research and the potential for further mining of the research data to facilitate knowledge advancement both of a theoretical and practical nature.

2 Considering IT Service Support Work as a Team Activity

The conceptual model introduced in Chapter 1 (Figure 1.1) is revealed to be more useful in terms of understanding IT service support work at the team level than at the individual worker level. Strong arguments have been made considering IT service support work as a form of: IS work, knowledge work, and service work. These arguments have implicitly reflected upon the dual perspectives of exclusivism and inclusivism (Hislop, 2008). Table 6.1 briefly outlines these different perspectives. From an exclusive perspective IS work might be reserved for those whose work is highly technical, working with computers to a high degree of complexity. In contrast, from an inclusive perspective, IS work might include any form of work that involves the use of IT. As was discussed in Chapter 4, knowledge work from an exclusive perspective variably refers to professional, creative, managerial, and/or technical work; and from an inclusive perspective might include other forms of primarily mental, as opposed to physical, work. Similarly, from an exclusive perspective, service work might be regarded as being the reserve of those who work in close engagement with a customer, serving their needs, but from an inclusive perspective might also involve all other workers who work either directly or indirectly in the provision to customers of non-tangible services.

Aspect of IT Service Support work	Exclusive Qualification	Inclusive Qualification
Information Systems Work	IT specialist technicians	All who work with IT
Knowledge Work	Elite professionals and managers	All who engage in mental labour
Service Work	Front-line customer-oriented workers	All who are involved in servicing customer needs

Table 6.1: Exclusivist and Inclusivist Perspectives on Aspects of IT Service Support Work

The exclusivist perspective implies a clear dichotomy – e.g. an IT service support team are either to be considered as knowledge workers or they are not! The inclusive perspective also implies a dichotomy but imposes a much lower threshold for being considered as such. As such, neither of these perspectives are particularly useful for purposes of comparison or for gaining a more fine-grained understanding. A more useful perspective, proposed as a theoretical contribution, is one where a continuum is implied with at one end the bare minimum qualification for the inclusive qualification to be met, and at the other the exclusive qualification. A scale might then be applied to create a tool for analysing the different aspects of IT service support work at team level. A generic version of this is given at Table 6.2.

Scale	Generic Meaning
0	Does not reach inclusive qualification
1	Weakly reaches inclusive qualification
2	Comfortably meets inclusive qualification
3	As 2 plus some element of meeting exclusive qualification
4	As 2 plus more significant element of meeting exclusive qualification
5	Strongly reaches exclusive qualification

Table 6.2: Generic Continuum Perspective

From this generic continuum, indicative guideline scales might then be developed for each of the three aspects under consideration as being pertinent for IT service support work (see Table 6.3). This then allows for the work of different teams to be compared and contrasted in terms of *the extent* to which

they might be considered to meet a qualification for being termed, respectively, IS work, knowledge work, and service work.

	Scale	IS Work	Knowledge Work	Service Work
	0	No use of IT	Negligible mental effort required	Production worker with only a vague connection to the customer
Inclusive Threshold	1	Minimal use of IT	Minimal mental effort required	Weak awareness of indirectly serving customer needs but with no direct contact with customer
	2	Routine use of IT	Mental effort required on a regular basis	Stronger awareness of indirectly serving customer needs but with little or no direct contact with customer
	3	As 2 plus supports other users with straightforward incidents	Significant mental effort and problem-solving and a requirement to fuse moderately 'difficult' theoretical and contextual knowledge	Strong awareness of indirectly serving customer needs with some direct contact with customer
	4	As 3 plus supports other users with more complex incidents	As 3 plus requirement to fuse more 'difficult' theoretical and contextual knowledge	Intermittently on front line with regular direct contact with customer
Exclusive Threshold	5	IT specialist work of 'expert' technicians	Elite, professional and managerial work	front-line work with constant direct contact with customer

Table 6.3: Continuum Perspective applied to IT Service Support Work

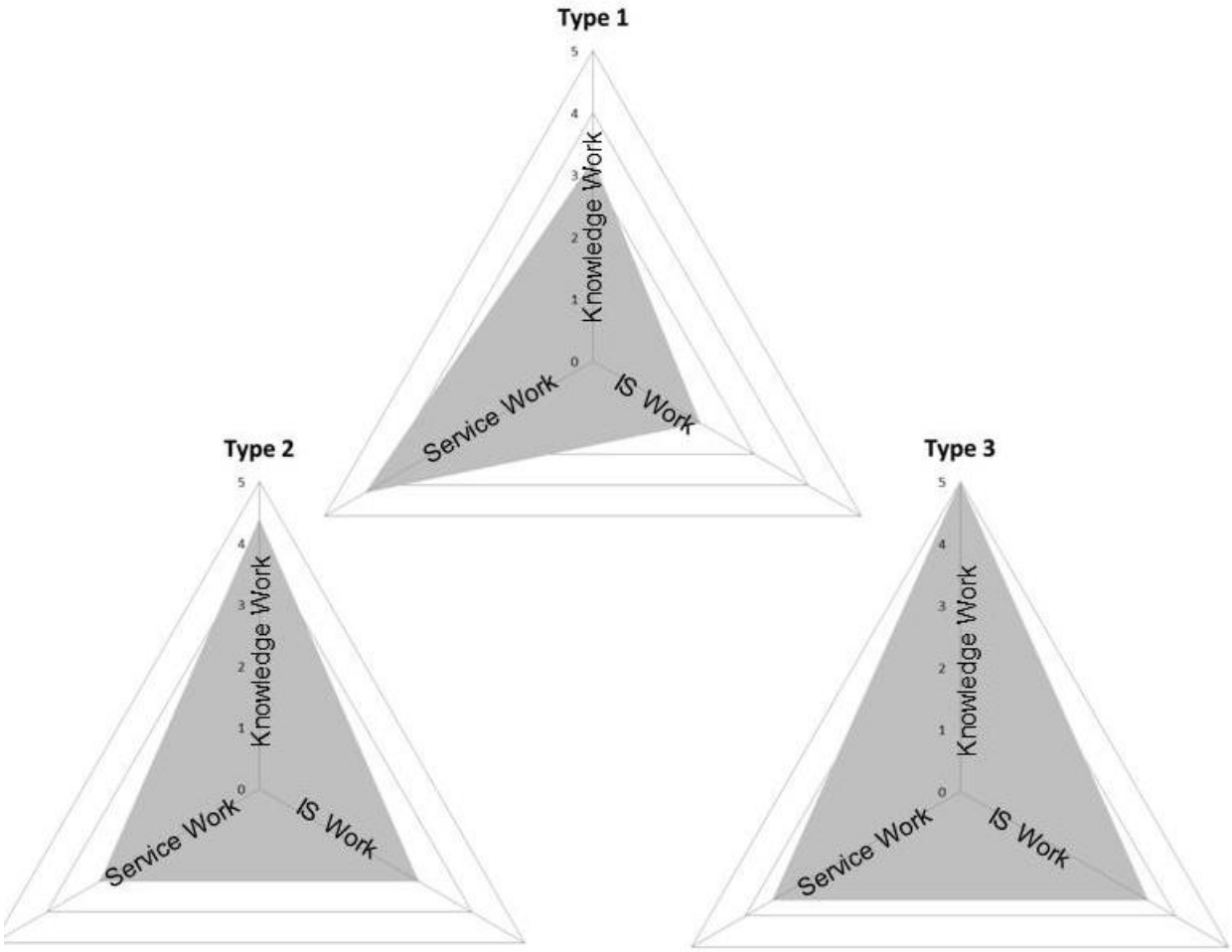
These scales can be used to interpret the work observed being carried out by each team, and from this (and with reference to the literatures on IS work, service work and knowledge work) a better understanding might be gained of *the extent* to which the three types of IT service support work might be considered as IS work, knowledge work, and service work. Table 6.4 shows an

interpretative assessment of each team and by aggregation for each of the three types of IT service support work.

Type	Team	IS Work	Knowledge Work	Service Work
1	SCC Education Services IT Service Desk (first line first tier work)	3	2	4
	SCC Corporate Services Service Desk (first line first tier work)	4	2	4
	UKHEE IT Service Desk	3	2	4
	Stoneworks IT Service Desk	3	2	5
	Average	3.25	2	4.25
2	SCC Education Services IT Service Desk (1st line, 2nd tier work)	4	3	3
	SCC Corporate Services Service Desk (1st line, 2nd tier work)	4	3	3
	SCC Corporate Services – Desktop Services	5	3	3
	Stoneworks Desktop Support	5	3	3
	Stoneworks Business Services	4	3	3
	Average	4.4	3	3
3	Server Control Service Support	5	4	4
	Poyet Systems IT Support Desk	5	3	3
	Average	5	3.5	3.5

Table 6.4: Interpretations of IT Service Support Work by Team Using Continuum Perspective Applied to Aspects of IT Service Support Work

From these interpretations, radar diagrams can be used to visually represent differences between the three types of work (Figures 6.1 to 6.3). These indicate that Type 1 work is '*more*' akin to service work than Types 2 and 3 work but that, because of its front-line dimension, Type 3 work is '*more*' service work than Type 2 work. The breadth and the complexity of Type 3 work explain why it is shown as being '*more*' knowledge work and '*more*' IS work than the other two types of IT service support work.



Figures 6.1 to 6.3: Radar Diagrams to indicate the extent to which each Type of IT Service Support Work is interpreted to be IS Work, Service Work and Knowledge Work.

When considered alongside the model presented in Chapter 4 (Figure 4.1), Types 2 and 3 work is revealed to be similar but significantly different from Type 1 work in terms of the complexity and variety of problem-solving tasks undertaken. Types 2 and 3 work calls upon greater flexibility and creativity to work without recourse to process or guidelines. Rather it typically relies upon contextually and experientially acquired knowledge in order to figure out how to diagnose and resolve incidents that typically are similar to yet distinct from incidents historically encountered. By contrast Type 1 work tends to be work that is similar to and not significantly different from work historically encountered. When such distinct work is encountered within a Type 1 team it is typically escalated to be dealt with by a Type 2 team. Thus in Type 1 teams

opportunities for learning are restricted whereas in Types 2 and 3 teams learning is inherently a part of the fabric of the job.

The high-level answer to the question: ‘what is the nature of IT service support work?’ that emerges is that it depends upon whether the work is first-line (Type1), second-line (Type 2) or single-line (Type 3). However, based on this study, it might also be said that the work generally comprises to different degrees, and at an individual worker level, the fusing of technical (theoretical) and organisational (contextual) knowledge, being creative and learning whilst drawing upon experientially-acquired knowledge, and responding to the needs of a customer entity within the confines of a management-imposed bureaucracy.

3 Considering the Individual IT Service Support Worker

Having given consideration to IT Service Support work as a team activity, we might now build from this and focus more on the individual IT service support worker to develop a useful classification model, which, as presented below, takes in three factors.

The first of these factors is the typology introduced in Chapter 2 (also see Appendix B) to differentiate between types of IT service support workers based on job design within a management-defined organisational structure. Simply referred to as Types 1, 2, and 3, this typology has been used consistently across the study and has proven useful for revealing significant differences between the work of different IT service support teams; for example in terms of their organisational status, and the extent to which creativity is required in their work.

Secondly, the data relating to the theoretical and contextual nature of knowledge used by workers may have been presented in Chapter 4 at the team level, but within those teams, individual factors were significant. For example, some more experienced workers may have been more inclined to work without reference to sources of information/knowledge external to their own personal ‘stocks of knowledge’, and some less experienced and/or less confident

workers may have opted to avoid where possible those incidents that took them outside of their ‘knowledge comfort zones’. As such the ‘theoretical: contextual’ knowledge bias might be reasoned to have an individual as well as a team dimension.

Thirdly, in Chapter 5, a tripartite model was presented in relation to IT service support workers and it was posited that such workers had to resolve tensions between customer, employing organisation, and occupational orientations; and that, as such tensions were resolved by the preferencing of one orientation over the others, their individual careers would be affected accordingly.

By way of another theoretical contribution, it is suggested that by considering each of these three factors (Figure 6.4), we might usefully classify individual IT service support workers.

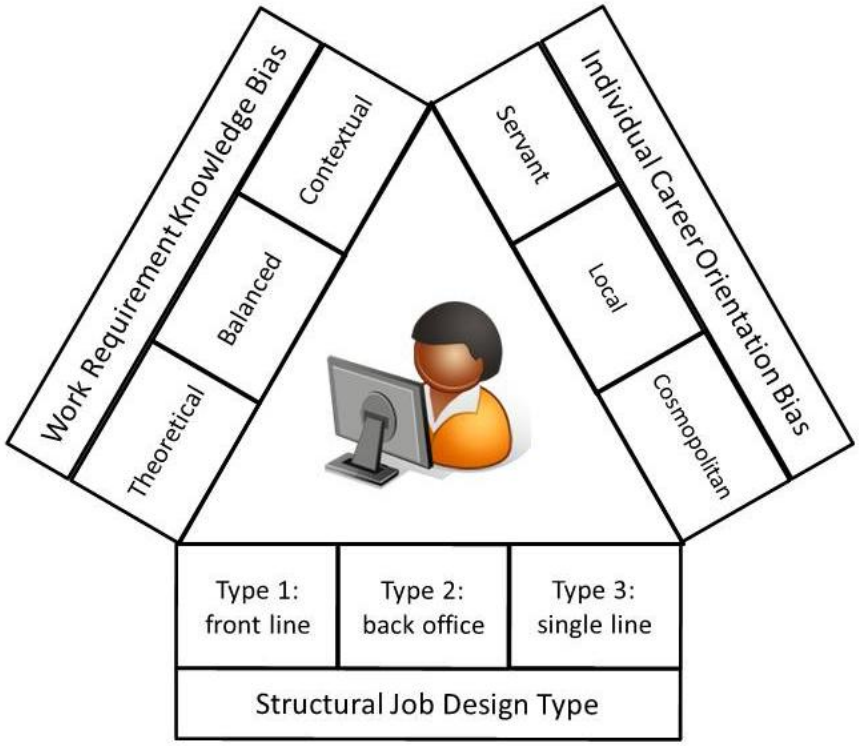


Figure 6.4: Model for Classifying IT Service Support Workers

From the research data, four such classifications are identifiable and these are listed at Table 6.5. Those IT service support workers who might be

classified as a ‘Resigned Robot‘ (RR), evoking Ritzer’s (1996) MacDonaldization thesis, are those who typically sit on a service desk dealing with the constant demands of customers and don’t have much opportunity to develop theoretical skills and knowledge. The work of the RR is predictable within defined organisational processes and offers little scope for development, such that workers often become resigned to their roles lacking variety and challenge.

In extreme contrast, those IT service support workers who spend most of their time out of direct contact with customers and use mostly theoretical/technical knowledge that might easily transfer from one organisation to another, might - with a nod to Sennett’s (2009) treatise ‘The Craftsman - fit a classification of ‘Aspiring Artisan’ (AA). These workers fully engage their minds and bodies in an ‘absolutist’ rather than ‘practitioner’ approach to fully understand the issue before them from a technological/theoretical perspective and through this attitude necessarily learn, deepening their individual ‘stock of knowledge’. Thus, from a Vygotskian perspective (see Collins, Harkin and Nind, 2002) their zones of proximal development are ever expanding, making them increasingly proficient and adept at resolving incidents as they head towards becoming master craftsmen/women.

Another useful classification identified from the data is that of ‘Constrained Careerist’ (CC) to differentiate (especially from RRs) those Type 1 workers, such as Jonathan and Navinda on the UKHEE service desk, who have a theoretical knowledge base acquired through education but have little opportunity to use or develop it in their day-to-day work. These workers might be associated with the concept of ‘stuckness’ which Kanter (1989a, p. 511) defined as being ‘ *a cap on the chance for skill growth – for... structural reasons beyond limitations of individual ability’*. In this context the most clearly identifiable CCs are those who, having previously studied IT with an ambition to forge an IT career, now felt constrained as they strive to make use of and develop their IT skills.

The fourth classification identifiable from the data, which might reasonably be applied to Lauren of the Stoneworks’ Business Services team, is that of

'Establishment Expert' (EE) to accentuate the 'local' (i.e. organisational) career orientation and depth of contextualised knowledge used in fulfilling everyday problem-solving tasks. As William H Whyte Jr. (1956, p. 3) wrote of 'The Organization Man' in his classic book about 1950's corporate America, these workers in a very real sense not only work for 'The Organization' but '*belong to it as well'.* Whether by accident or design, but implicitly by choice (Beck, 1986), EEs have developed over time an individual 'stock of knowledge' that is so heavily contextualised that outside of the confines of the organisation they are likely to be like a fish out of water. Within the organisation their knowledge/skills are vital but cut adrift from it they have only a limited offering in the labour marketplace.

Classification	Likely Job Design Type	Likely Orientation Bias	Likely Knowledge Bias	Example Participant from Study
Resigned Robot	Type 1	Servant	Contextual (or balanced)	Sandra (SCES)
Constrained Careerist	Type 1	Cosmopolitan	Contextual (preference for theoretical)	Jonathan (UKHS)
Establishment Expert	Type 2 or Type 3	Local	Contextual (or balanced)	Lauren (STOB)
Aspiring Artisan	Type 2 or Type 3	Cosmopolitan	Theoretical	John (POY)

Table 6.5: Identifiable IT Service Support Worker Classifications

Other classifications might be made based on different combinations of the three factors in Table 6.5. For example, a class of 'Pedestrian Practitioners' might be made applied to competent but unambitious technicians who spend their working hours working skilfully to resolve a stream of incidents that are objectively complex, but which they handle subjectively in a straight forward repetitive manner because the skills they use have become embodied (Swart

and Kinnie, 2003; Yanow, 2003). The closest to such workers encountered in this study were Judy and Kate (SCCS) who specialized in servicing access requests. Alternatively one might envisage a class reserved for 'Omniscient Oracles' whose knowledge is already deemed to be comprehensive from both a technical and contextual perspective. For reasons previously discussed such workers might only exist in rare technologically stable environments. However, the data suggest that the four classes in Table 6.5 would be sufficient to enable a reasoned classification of all the workers encountered in the study. Type 1 workers would generally fit within either the RR or CC classes depending upon their career orientation. Types 2 and 3 workers would generally fit within either the EE or AA classes depending upon the career orientation and/or the extent to which the knowledge used during every day work is particular to the organisation (i.e. contextually-biased).

It is proposed that these classifications are useful in illustrating the breadth of IT service support work at the individual worker level and thereby this classification model helps to answer the question of how we should understand and conceptualise IT service support workers. By extension, these classifications may have a practical use for managers with responsibilities relating to a range of IT service support workers; specifically for making a range of people management decisions. Such decisions will be multifarious, but by way of example might include:

i. Assigning an appropriate level of autonomy;
ii. Constructing appropriate knowledge transfer programmes that use the most appropriate methods for the class of worker (e.g. formal training, mentoring, exposure to specific work to bring about specific learning outcomes);
iii. Adopting succession planning practices where the organisation relies heavily on workers who use a high proportion of experientially-learned contextualised knowledge (e.g. by formulating internal career development paths for workers to follow);
iv. Implementing a policy that actively discriminates between workers that the organisation would wish to particularly retain because of their

specialist knowledge and those workers who might be more readily replaceable in the labour market.

4 Additional Contributions

Throughout this thesis, a range of theoretical models have been developed and presented. Each of these has the potential for use in analysing other data to broaden understanding of related phenomena. These models are shown below in Table 6.6. Additionally, as summarised in this section, the discussion sections of the chapters have pointed to additional contributions to practice as well as academic theory and commentary.

Model / Framework	**Ref.**	**Comments / Potential Use / Benefit**
Conceptual Model of IT Service Support worker	Figs. 1.1 and 6.1 to 6.3	Conceptualised the IT service support worker as being in part IS asset, knowledge worker, and service worker. The model might be applied to other workers in the IT sector or who substantively use IT (e.g. developers and call centre workers) for comparative purposes.
Course-of-action process model	Fig. 2.1; Appendix C	Redefined the IM process from the worker perspective, rather than the incident perspective. This difference in perspective has the potential for use in identifying work inefficiencies.
Task requirement matrix	Fig. 2.5	Enables tasks to be categorised according to their objective complexity and the workers familiarity with it. This offers practical benefits for the analysis of a range of work with potential for automation, team resourcing and worker reward.
Tool for the analysis of IT service support work as knowledge work	Figs. 2.6 and 4.1	This tool has a practical use for understanding and perhaps benchmarking work performed at a team level. For example, where work is identified as entailing the use of high levels of contextualised technical knowledge/skills

		then such workers might be deemed to be of greater importance from strategic as well as tactical and operational perspectives.
Schutzian knowledge forms typology model	Fig. 2.7	In the conflict between objectivist and practice based approaches to understanding organisational knowledge, this model is rational in adherence to objectivist thinking whilst embracing the notion of practice-based thinking that knowledge cannot be satisfactorily objectified.
A new model for the classification of IS workers	Fig. 3.1	This simplified Venn diagram model satisfactorily caters for a broad range of IS jobs, and may be useful for simplifying the IS work landscape.
Models to illustrate the service relationship and tensions at play when a corporate service is provided	Figs. 5.1, 5.2, 5.3 and 5.5	It is contended that by aiding understanding of these relationships and tensions, HRM practice might be informed to enhance organisational efficiency (e.g. by identifying over-intensification of work or lack of developmental opportunities to safeguard corporate capability).
Framework for the analysis of HRM practices within a service setting	Table 5.2	Drawing on various writings a set of eight HRM factors and typical approaches taken were identified against which the approaches taken at organisations might be compared. This framework offers potential for use by HRM practitioners.

Table 6.6: Theoretical Models and Frameworks Contributed

Rationalisation of the IT Workforce Risks Organisational Performance

Building upon the literature on practice-based approaches to knowledge management (e.g. Yanow, 2003), the study clearly illustrates the importance of experience-based creativity for IT service support workers as they investigate, diagnose and resolve incidents by fusing contextual and theoretical knowledge. The attempt to differentiate between contextual and theoretical elements of this fused knowledge is a novel approach and contributes to the literature by

empirically illustrating that contextuality is more important for some workers than others.

From a practice perspective, the heterogeneous creativity that stems from workers' experientially-formed capabilities to recognise patterns as cues to tacit information/knowledge and then to problem-solve accordingly, goes unacknowledged within the ITSM 'best practice' literature (e.g. Taylor, Iqbal and Nieves, 2007; van Bon *et al*, 2008). Rather, ITIL, as the leading ITSM framework, prefers to rationalise workers as either homogenous assets (e.g. by management-defined role, such as IT Support Engineer) and/or as mechanistic teams (e.g. by function, such as Desktop Support Team) within a management-orchestrated system. The research data suggest that such orchestration may result in managers deluding themselves as to the organisation's capacity to operate if deprived of individuals with specific experientially-acquired skills and knowledge. In short, in IT service support work, experience – and specifically the tacit knowledge individually created and retained within a personal 'stock of knowledge' – is central to the equation for value creation (Swart and Kinnie, 2003) that was discussed in the introduction to Chapter 3, but is implicitly undervalued by practices that dehumanise these 'experiencing' workers to the point of objectification (Fiske, 2009).

This rationalising of the worker, coupled with other management rationalisation practices such as the bureaucratisation of learning - through adherence to Senge's (1992) Learning Organisation Theory - and work-fragmentation - with specific types of work being directed to specific teams - can be seen from the study to stifle the development of experience-based creativity. The suggestion is that beyond this, there are other suppressive effects across the organisation, including on knowledge sharing, learning, innovation and worker engagement, with resultant negative implications for organisational performance.

The strategic implications from the study are clear: organisations that aim to provide IT services competitively and/or reliably over the long term, should reflect upon the short-termism implicit in the dehumanising of IT service support workers into anonymous system assets. Rather they should give consideration

to implementing people management policies specifically designed to nurture and develop contextualised technical knowledge slowly over time, in the process acknowledging workers' humanity and *'appreciating the [worker's] mind (intents, thoughts, feelings)'* (Fiske, 2009, p. 32).

The Professionalisation of Information Systems Work

In Chapter 3 data were presented to suggest that as IS work generally and IT service support work specifically have matured (Aldis, 2009; Beckett, 2009; Greenhill, 2011) they have become increasingly professionalised through rationalising techniques emanating from outside the organisational setting. The evidence for this came from three places. Firstly, it came from analysis of the, albeit limited, data relating to entry qualifications of recent recruits into entry-level (i.e. Type 1) jobs. Secondly, it came from analysis of the technical qualifications of workers, particularly those in Types 2 and 3 jobs, where the proliferation of proprietary technical qualifications being accumulated by workers during the course of a career was noted. And thirdly, it came from noting the credence given to rationalising the skills employed by IS workers to the nth degree by the UK Government and British Computer Society so that workers' professional worthiness might be systematically ranked according to a set of rationalised levels, decided upon by a power elite. As discussed in Chapter 4 this rationalising approach, that inevitably applies typifying labels to workers, takes little account of individual traits such as introversion, which may be advantageous in Type 2 work but disadvantageous in Type 1 work. Where the route to Type 2 work is rationalised within an ITSM profession structure to begin with working in a Type 1 the role (SFIA Foundation/BCS, 2006), there is perhaps a risk that introverts will shy away from the profession, thus depriving the IT labour market of considerable latent talent. Further research is need to consider this potentiality more thoroughly.

Related to this, as was discussed in Chapter 4, the data reveals that Type 1 work tends to emphasise the use of effective communication skills, particularly the skill of listening attentively to the needs of customers, and a willingness to

conform to rationalised procedures. Success at Type 1 work is dependent upon these attributes and may have a bearing on whether or not a worker progresses through the professional gateway to Type 2 work, for which communication skills and procedural working are less important than an ability to intelligently and creatively problem-solve. This suggests that management thinking that aggrandises rationalisation of IT service support roles within a broader rationalisation of IT work (as epitomised by the SFIA framework: see Appendix H) may present a risk that talented workers who are well suited to Type 2 work will remain frustrated working in Type 1 work (or leave the profession) whilst those workers who are good communicators and unfailingly adhere to management-defined procedures will be promoted into roles for which others may have been better suited. Again, further research is called for to assess the effects of these recent trends that have begun to impose a professionalised structure upon IS work.

IT Service Support Workers Need to 'Slide and Morph'

The evidence of this study points to IT service support workers, particularly those doing Types 2 and 3 work, epitomising the contemporary worker's need to '*slide and morph*' (Gratton, 2011a) across the expanse of a career in line with Bauman's (2000) concept of liquid modernity and the literature pertaining to the boundaryless career (e.g. Bird, 1996). The study adds to the literature that points to IT (amongst other) workers' capabilities to effectively perform the work required of them being precarious (e.g. McGuigan, 2010, Gratton, 2011a; Standing, 2011). Because IT service support workers have been absent from the literature, they have not been specifically considered in this regard and the findings of this study suggest that they are of particular pertinence in this regard. By its technologically fast-changing nature (even in slow-changing bureaucratic organisations such as a county council), IT service support work, rather than IT service management, demands that the workers let go of skills and knowledge as these become redundant. In their place, workers need to learn new skills and knowledge, *'sliding and morphing'* in a continual pursuit of proving their

capabilities when faced with incidents and service requests that over time *'slide and morph*' to reflect changes to the organisations' technological infrastructures being supported. However, the study points to prior learning by workers using now redundant technology within the organisational context as being important for the assimilation of learning about incoming technology. Thus, just as workers need to '*slide and morph'* so do organisations. Rather than recruit new workers who can objectively show that they have knowledge of the incoming technology, organisations might be better served by actively facilitating the '*sliding and morphing'* of their present workers so that the contextual knowledge that was fused with the technical knowledge relating to the outgoing technology might then be fused with the theoretical knowledge relating to the incoming technology.

IT Service Support Workers' Working Practices are Largely Imposed upon Them

The study shows little evidence of workers being consulted on the formulation of their working practices. Specifically, organisational structures and Incident Management processes (supported by ICT tools) were found to have been imposed upon workers. This reflects the dehumanising effects of ITSM 'best practice' management rationalisation techniques (e.g. Taylor, Iqbal and Nieves, 2007). By way of contribution to ITSM practice, the evidence points to managers 'missing a trick' by not sufficiently valuing the workers' perspectives on how their work might be done more efficiently (Trusson *et al*, 2013). It is suggested that ITSM 'best practice' is inherently suspicious of worker motives, for example, by implicitly accusing workers who neglect to use a management-imposed ICT tool to share their knowledge in a codified form as acting against organisational interests. However, the study points to workers, particularly those working under time pressures, being inherently keen to work as efficiently as possible, and to critique the efficiency of the currently used tools, processes and organisational structures. This is in line with the '*law of less work'* (Kool *et al*, 2010) discussed in Chapter 5.

It is therefore concluded that managers might benefit from simply acknowledging that workers have an intimate knowledge of their work, including the processes and systems they work with and the tools supplied for them to use, and that this knowledge might be put to good use in improving efficiency. Just as the outputs of an artisan's work will most likely be better for them self-selecting their tools and working methods, so it is likely that, where experienced workers are involved in the (re-)design of processes and the (re-)selection of tools, the manager is likely to make more informed and thereby better decisions that have the support of those who have to work with them.

Identification of a Customer: Worker Negativity Mirror

The study contributes to the discussion of Chapter 5 on the veracity of the customer: worker satisfaction mirror (e.g. Barbee and Bolt, 1991; Boshoff and Allen, 2000; Korczynski, 2002), by arguing that if it is useful for managers wishing to generate a 'win: win' symbiosis between worker and customer, then it must also be acknowledged that there is a risk of a 'lose: lose' conflict co-existing or undermining the theorised benefits of the customer: worker satisfaction mirror. The data does indeed point to workers gaining job satisfaction from positive customer feedback, in line with the satisfaction mirror theory; but it also points to workers becoming job-*dis*satisfied when communication received from customers is emotionally felt by them to be negative.

Thus, whilst the Levitt (2006) inspired promotion of customer-centric business practices has been buttressed in practice by the perpetuation of an '*enchanting myth of customer sovereignty'* (Korczynski, 2002, p. 64) that entails the idea of a mirrored contentment between customer and worker, the data shows that disenchantment or discontent of these parties also reflects via a 'customer: worker negativity mirror'. For example, the customer who is unhappy with the IT service being provided auditorially displays their discontentment via the telephone to the worker, who they regard dispassionately, undermining the worker's humanity. The worker experiences that by managing their emotions

(Hochschild, 1983), becoming complicit in the dehumanizing process and consequently having a negative impact on their job satisfaction and thus performance.

IT Service Support Work is Emotionally-Burdensome Work

The study contributes to the literature on emotional labour (e.g. Hochschild, 1983; Korczynski, 2002; Netterstrøm, 2012) by introducing the IT service support worker into the ongoing discussion as a worker type that labours with their emotions as well as their mental capabilities. Given the widespread interest in the call centre worker in the business literature (e.g Taylor and Bain, 1999; Wallace *et al*, 2000; Deery *et al*, 2002), and the similarities between that work and Type 1 IT service support work, there is significant potential for further study of the emotional toil of IT service support work generally. The data indicates that across all types of IT service support work, a combination of work overload and interaction with customers who are disgruntled because the service being provided has failed in some way, typically has a negative emotional impact upon the worker. Whilst the greater autonomy of Types 2 and 3 workers mitigate against this, nonetheless, as discussed in Chapter 5, the potential for mental exhaustion and stress remains apparent. Further, because of the dehumanising effects of ITSM 'best practice' and the drive to ever greater efficiency, managers are not necessarily guided towards being alert to the issue. This potentially has consequences for the sustainability of critical business/technical knowledge being available to the organisation. If workers leave the organisation or become ill through stress, their experientially-acquired and tacitly-held skills/knowledge are lost to the organisation, and as the study has shown such skills/knowledge are not always easily replaceable. It therefore becomes incumbent upon managers to have regard for the emotional toil that the work has on workers and take appropriate actions to mitigate against the factors that contribute to the emotional burden.

HRM 'Best Practices' for Service Workers are not Fit-for-Purpose when Applied to IT Service Support Workers

In Chapter 5, typical HRM practices employed in customer-oriented service settings were discussed in the light of this study of IT service support workers. Because of the contextualised technical knowledge that is central to the effectiveness of the worker, generic HRM 'best practices' for service workers (Dupuy, 1999; Korczynski, 2002; Michel *et al,* 2009) are shown to be in part inappropriate. Indeed, the study also shows that this is typically recognised by local management, particularly in regard to the management of Types 2 and 3 workers. In particular, whereas generic HRM 'best practices' for service workers emphasise interpersonal skills in recruitment and development, in practice both IT service managers and IT service support workers are much more concerned with technical capabilities with customer service skills of very much secondary concern. It is suggested that the classification of IT service support workers (as previously discussed in this chapter) will be useful for managers for focusing on the needs of individual workers, and specifically their learning and development needs, to gain what Swart and Kinnie (2003, p. 60) refer to as '*an intellectual capital advantage'*.

Specifically, the vital importance of nurturing organisational knowledge to support an IT service continuity management process (Taylor, Lloyd and Rudd, 2007) needs to be acknowledged and built into HRM practices at the team and individual worker levels. Just as Willcocks *et al* (1997, p. 463) opined: '*without in-house expertise… it is difficult to see how the business can understand the viability of addressing new demands*', so it might be added that, without in-house expertise and commitment built up slowly over time, it is difficult for organisations to resolve major in-house incidents such as those recounted in the Introduction. And so, contrary to the prevailing imperative to distance IT services from the core organisation (e.g. through the use of flexible labour or outsourcing), this study suggests an HRM strategy that firstly, identifies those workers who are crucial in terms of the organization's intellectual capital, and then differentiates the HRM approach to those workers (either individually or according to their class within the model proposed above) so that it meets with

their satisfaction, thus encouraging organisational commitment and long tenure (Kinnie *et al*., 2005). Thus, for example, workers within the AA class might by design be accorded a high degree of autonomy and given opportunities to further develop their knowledge/skills.

The argument suggested by this study is that it may be those organisations which adopt an HRM strategy that incentivises workers (or an identifiable set of workers) to develop firm-specific and task-specific knowledge/skills (MacDonald and Weisbach, 2004; Ranzijn *et al*, 2006) that become best equipped to deal with heavily contextualised major IT incidents. Further, it is important for these organisationally-committed 'experts' to have around them 'their' community of other organisationally-committed 'experts' so that they might be able to work as a group in resolving complex contextualised IT incidents through skilled collaboration and improvisation based on shared 'stocks of knowledge' and understanding (Schutz and Luckmann, 1974; Cunha *et al*., 2009) and shared motivations born of commitment.

In his popular book, '*Straw Dogs',* John Gray (2003, p. xiii) writes: *In science, the growth of knowledge is cumulative. But human life as a whole is not cumulative activity; what is gained from one generation may be lost in the next.* This has significance for knowledge-based organisations. An HRM strategy, that dehumanises and/or anonymises workers into resources and capabilities to be used and abandoned at will, has a questionable logic when taken through to the operational level. The moment the contextually-knowledgeable worker is lost to the organisation, so is '*their'* complex contextualised knowledge which is resistant to codification. The 'next generation' of worker, taken from the labour market must start the cumulative activity of gaining that complex contextualised knowledge all over again.

The HRM strategy that this study suggests that IT service providing organisations should consider supports the thinking that Kanter (2011c) outlined in a recent article, entitled *'How Great Companies Think Differently',* In the article, she questions the '*lopsided logic*' (p. 68) of organisations focusing on short-term financial objectives, and advocates a social or institutional logic whereby firms take a long-term perspective and invest in the workforce to

ensure organisational sustainability. Along with Benkler (2011), her logic contradicts a common management belief that workers act out of self-interested rationality and rather *'assumes that people can be trusted to care about the fate of the whole enterprise – not just about their own jobs or promotions*' (Kanter, 2011c, p. 76). In the face of the prevailing winds of change her argument comes across as a plaintive cry for an HRM strategy that develops the workforce as a group of humans (rather than dehumanised resources) '*who care about high-performance because they believe in the company as institution'* in which they might forge meaningful organisational careers (also see Sturges *et al*, 2000). The empirically-based message from this study echoes that plaintive cry.

5 Further Research and Research Limitations

It is contended that a fair and reliable, empirically-based but nonetheless interpretative, representation of the IT service support worker as a particular type of everyday and modern-day worker has been delivered. There are significant limitations to the study, specifically in that it focuses on a limited number of organisations and workers, all of whom were operating within a United Kingdom context at a particular time in history and that considerable inferential interpretation has been made when analysing the codified representations of workers' experiences and thoughts. Despite these limitations, a picture of typical IT service support workers that is rich in content has been drawn and with it a case has been presented that the research findings have a significant degree of generalisable validity.

Having introduced the IT service support worker to the academic literature, revealing him/her from their dehumanised state as a system resource and from their dis-assembly into system capabilities, the field is opened up for further research in the same way that, for example, call centre workers have been researched extensively. Specifically, the issue of power relations (that has run as a theme throughout this study) between 'IT service management' and 'IT service support work' as practices that share organisational objectives but often

operate incompatibly (Trusson *et al*, 2013) might be explored in a more focussed manner. Related to the issue of power, the gender dimension to IT work has been underplayed in this study and yet gender discrimination in the IT sector has remained institutionalised and largely unchallenged (Adam *et al*, 2005; Webster, 2005). Further research into gender aspects of IT service support work is required.

The theoretical models introduced in this study to assist in data analysis (see Tables 6.5 and 6.6) have proven to be useful here but it remains to be seen the extent to which they might be useful in other contexts. Further research using these as analytical tools might help to further test and refine them. Specifically, it is suggested that the classification of IT service support workers into classes: RRs, CCs, EEs and AAs (Table 6.5) might be useful for classifying other types of worker with the same potential for benefits in people management practice. For example, might it be applied (possibly with adaptations) to operational and tactical level managers, accounts workers, health professionals and other IT operators?

With regard to this particular study, it might be reasoned that further enlightenment on the nature of IT service support work might be forthcoming by extending it longitudinally, revisiting both the teams and the individuals to discover what has changed and what hasn't changed and why. As John (POY) had remarked at interview, if I returned in six months' time he might be even more '*knackered*' than he said he was at the time.

6 Final Remarks

IT service support workers go about their work quietly, almost unnoticed. They become visible only when other people need access to their capabilities to help them to meet their own work and personal objectives, or if their work rises to public consciousness because of a spectacular failure of a major IT system such as at a bank or government department. Even then they remain shrouded in a corporate identity.

The intention of this avowedly political study was to shine a light into the darkness, placing the IT service support worker centre stage as a key worker in the knowledge economy, central to the success of both commerce and public services. In doing so, and in future promulgation of the findings, it is hoped that organisational managers might be guided towards more considered and humanely considerate management of these workers than current 'best practice' implicitly advocates.

Appendices

Appendix A: Sample Access Negotiation Letter

Mr ***** ******
IT Service Delivery Manager
Shire County Council

16 April 2010

Dear Mr. ******,

IT Service Management Research

I am carrying out doctoral research at the Loughborough University Business School into how knowledge is formed and flows within the Incident Management process by making comparisons between different organisations from different sectors and with different working cultures. Having read your recent article in Service Talk I wondered if you might be willing to assist me in this research.

If at all possible I would like to arrange to spend a period of time (ideally 3-5 working days) working alongside a team or teams of technicians who investigate IT incidents (first-line and/or second-line support technicians). In the course of this time I'd like to observe the investigation process at first hand and have the opportunity to talk with technicians about the process and their work. In my research so far - at several organisations - I have managed to collect data without having any detrimental effect on the work output of the team.

My professional background is in IT and I am a fully qualified IT Service Manager at ITIL versions 2 and 3 (details at www.clivetrusson.co.uk). I would therefore be in a position at the end of my stay with you, by way of return and if desired, to provide you with an informal and independent review of those processes observed. This informal briefing has been found to be beneficial at organisations visited to date. I would also be able to provide you with appropriate news copy for use as corporate publicity (e.g. web news or customer newsletter) of involvement in the research.

I can give an assurance of anonymity to the organisation and individuals and will adhere to the Loughborough University ethical code of practice for research. Similarly, I can assure you that I will be appropriately sensitive to your day-to-day business needs and the importance of confidentiality, and would hope that my visit will be of mutual benefit.

I enclose a briefing note on the research for your further information. I would be delighted to come to visit you to discuss the matter with you or one of your team at your convenience. I can be contacted by email at C.R.Trusson@lboro.ac.uk or by phone on 0115-8771183 (mobile: 07783951800).

With thanks, yours sincerely,

Clive Trusson MA PGCE Chartered FCIPD

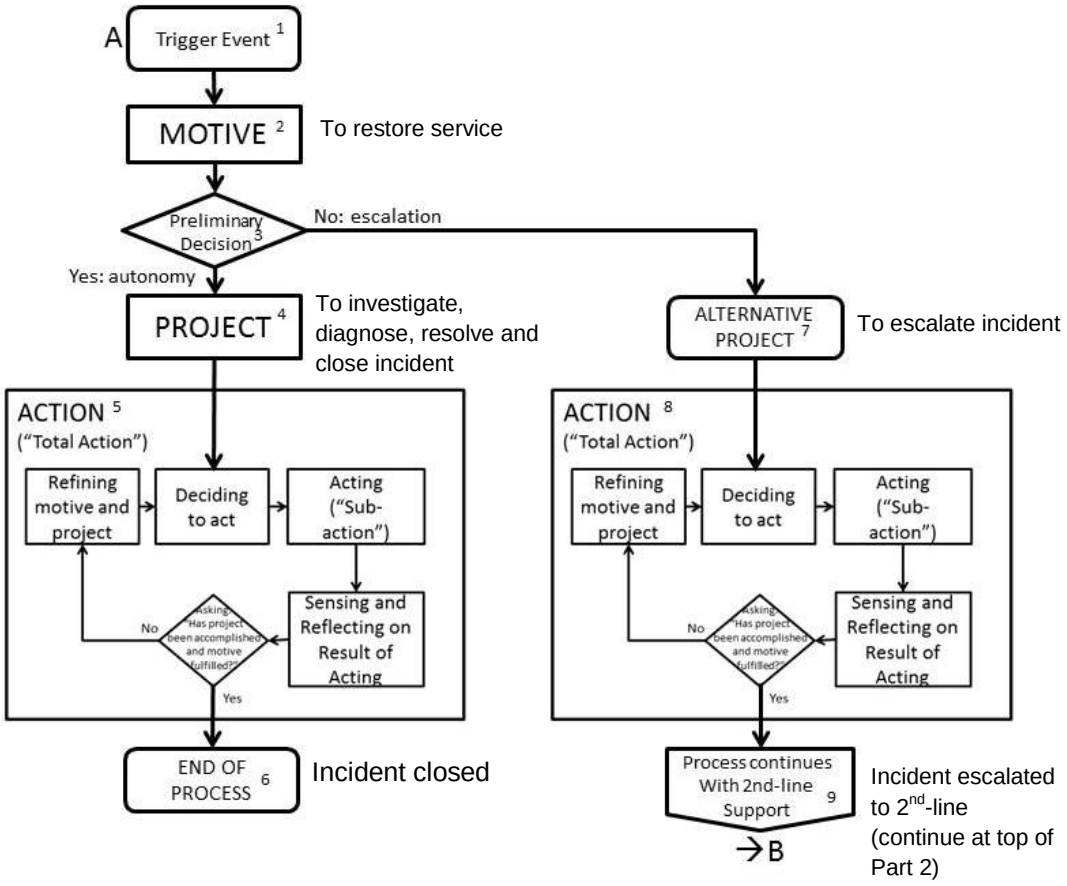
Appendix B: Typology of IT Service Support Workers

Type Numeric	Type Title	Type Description	Teams whose work involves ALL work of this type			Teams whose work involves SOME work of this type	
1	First Line Workers: Organisation Structured for Functional Escalation	The work done in this category is the first port of call for customers reporting IT incidents or requesting service changes. The workers within these teams either meet the customer requirement themselves or escalate the matter on to a second-line specialist team.	UKHEE IT Services Service Desk	Stoneworks IT Services Service Desk		SCC Education IT Services Service Desk (First-line work)	SCC Corporate IT Services Service Desk (First-line work)
2	Second and Third Line Workers: Organisation Structured for Functional Escalation	The work done within this category is that that is referred to the workers within these teams by another part of the organisation, typically the Customer Service Desk.	Stoneworks IT Services Desktop Services (2nd Line work)	Stoneworks IT Services Business Services (2nd line work)	SCC Corporate Desktop Services (2nd and 3rd-line work)	SCC Education IT Services Service Desk (2nd-line work)	SCC Corporate IT Services Service Desk (2nd-line work)
3	Single Line Work: Organisation Not Structured for Functional Escalation	The work done in these teams is in the main part self-contained, being dependent upon no other part of the organisation for work referrals and only in exceptional circumstances escalating the matter on to a third party.	Server Control (UK) Service Support	Poyet Systems IT Service Desk			

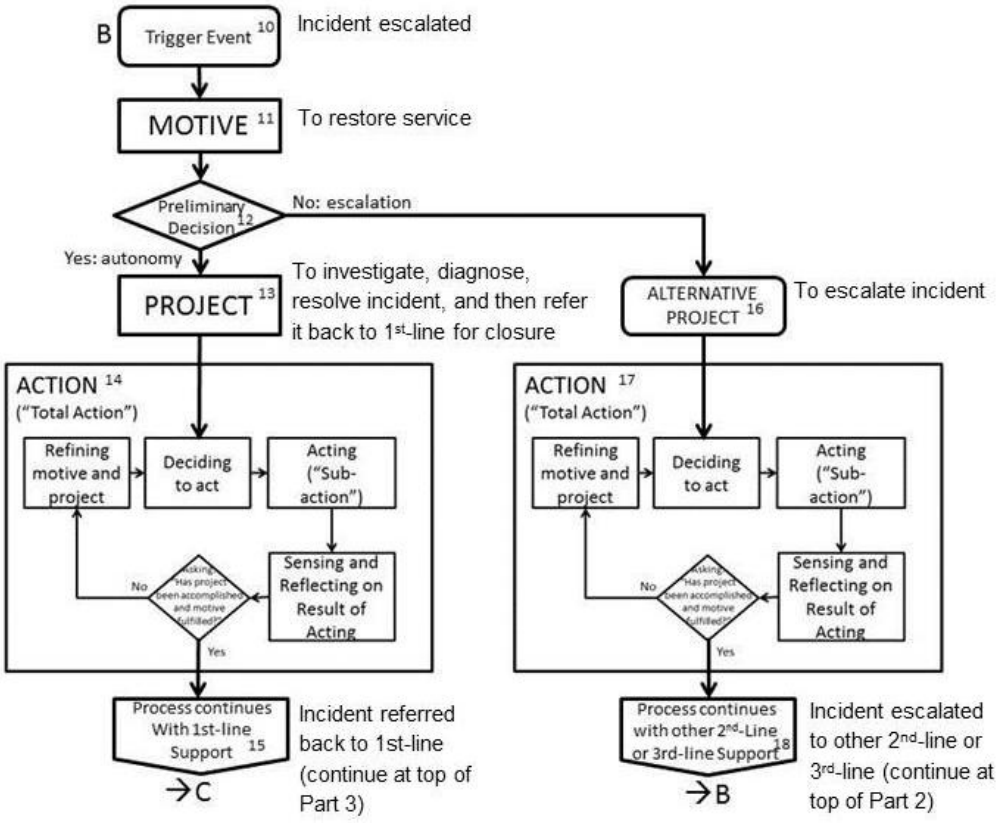
Appendix C: 'Schutzian' Worker-Centric Incident Management Processes

N.B. The numbers in the process boxes on the diagrams point to the explanatory notes that follow the diagrams within the appendix. These are provided to assist the reader in their comprehension of the models.

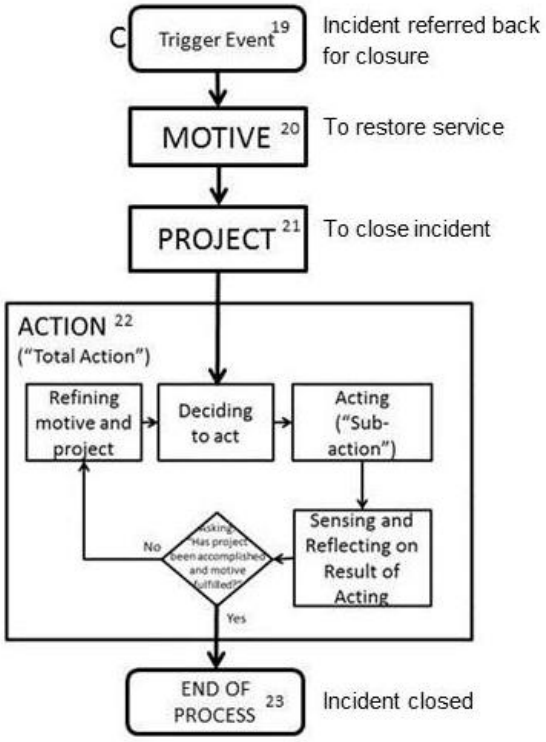
Model 1 (in three parts) – Typical worker-centric IM Process for Type I (first-line) and Type 2 (second-line) IT service support workers



Part 1) Start Point: Type 1 Worker receives notification of an incident from a customer.

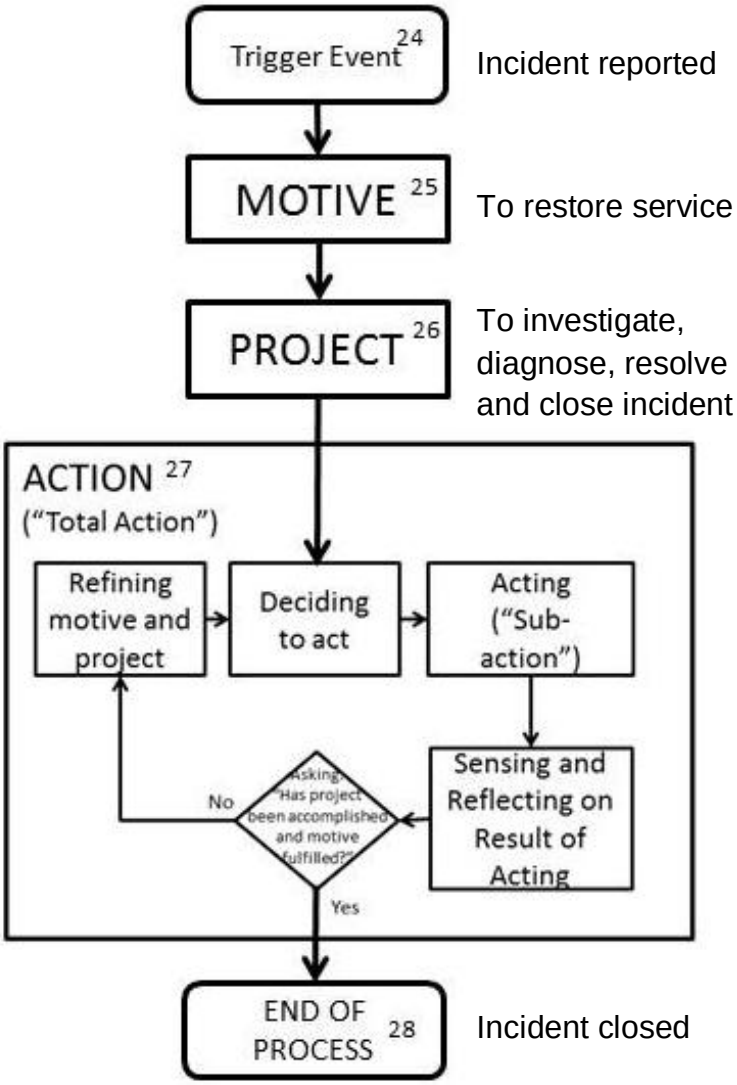


Part 2) Start Point: Type 2 Worker receives notification of an incident having been escalated from the 1st Line.



Part 3) Start Point: Type 1 Worker receives notification of an incident having been resolved from the 2nd Line.

Model 2 – Typical worker-centric IM Process for Type 3 (single-line 'expert') IT service support workers



Start Point: Single Line IT service support worker receives notification of an incident from a customer.

Notes on Models:

Process Box No.	Process Box Title	Notes
1	Trigger Event	The reporting of the incident to the 1st-line IT service support worker, e.g. phone call 'event' or email 'object' in email in-box from customer
2	Motive	The primary motive of the IT service support worker is what Schutz "(1953, p.16) refers to as the "in-order-to motive". In this context this might typically be expected to be "to restore normal service operation" (Berkhout *et al*, 2000, p.95) (incident) or to fulfil customer's additional need (service request), but may include other motives such as to meet workload targets set by management or to progress the incident accurately to the appropriate 2nd-line team or worker. Schutz also refers to "genuine because-motives" which in this context might include such factors as the IT service support worker's motive to seek meaning in work; to be highly regarded within the organisational setting and to honour the contractual agreement to trade their labour-power for money (thus enabling them to have shelter, sustenance, a certain lifestyle etc.)
3	Preliminary Decision	IT 1st-line support worker decides on the basis of the information garnered from the trigger event whether they can autonomously complete the necessary work to resolve the incident or fulfil the service request alone or whether they will need to functionally escalate the matter to a 2nd-line IT service support worker or team.
4	Project	IT service support worker "phantasying" (Schutz, 1953, p.15) to a time when she will have taken action to record and classify the incident and then to have resolved it and closed it.
5	Action	a) Iterative process of observable sub-actions taken by IT service support worker interspersed with sensing of and reflection on the outcomes of those sub-actions and consequential decision-making on next sub-action to take. During these reflections the IT service support worker may reassess their "in-order-to-motive" (e.g. where they become aware that normal service operation has been restored through no activity of theirs or workload priorities change) or their "phantasy" (e.g. where they try a different tack to resolve the incident because their initial actions failed to resolve it). Such reflections may also cause them to reassess their decision to work on the incident autonomously and decide to escalate/transfer the matter. This iterative process of sub-actions continues until the IT service support worker considers that they have played out their current "phantasy" successfully and fulfilled their current "in-order to motive". b) In doing so the IT service support worker will have experienced the Incident Management process stages of recording and classifying the incident, then investigated, diagnosed and resolved the incident (or fulfilled a service request), then closed it.
6	End of Process	-
7	Alternative Project	IT service support worker "phantasying" to a time when she will have taken the necessary action to record and classify the incident and then to have escalated it to the appropriate 2nd-line worker or team.
8	Action	a) As 5a. b) In doing so the IT service support worker will have experienced the Incident Management process stages of recording and classifying the incident, and then escalated the incident appropriately to a 2nd –line worker or team.
9	Process Continues with 2nd-line	This indicates that the process continues when a notification is received by the 2nd-line support worker/team. (see Part 2)
10	Trigger	The escalation of the incident to the 2nd-line IT service support worker,

	Event	e.g. incident record 'object' appearing in 2nd-line worker's work queue.
11	Motive	As 2
12	Preliminary Decision	IT 2nd-line support worker decides on the basis of the information garnered from the trigger event whether they are the appropriate worker or team to progress the incident or service request – i.e. whether they can autonomously complete the necessary work to resolve the incident or fulfil the service request alone, or whether they should functionally escalate the matter to a different 2nd-line support worker or team or to a 3rd-line IT service support worker or team.
13	Project	IT service support worker "phantasying" to a time when she will have taken action to have resolved the incident and referred it back to the 1st-line for closing.
14	Action	a) As 5a. b) In doing so the IT service support worker will have experienced the Incident Management process stages of investigating, diagnosing and resolving the incident (or taken the action to fulfil the service request) and then returned the incident back to the 1st-line worker or team for further action.
15	Process Continues with 1st-line	This indicates that the process continues when a notification is received by the 1st-line support worker/team. (see Part 3)
16	Alternative Project	IT service support worker "phantasying" to a time when she will have taken the necessary action to have escalated it to a different 2nd-line worker or team or to a 3rd-line worker or team.
17	Action	a) As 5a b) In doing so the IT service support worker will have carried out the necessary action to escalate the incident appropriately to a different 2nd-line worker or team or to a 3rd-line worker or team.
18	Process Continues with 1st-line	This indicates that the process continues when a notification is received by a different 2nd-line support worker/team or a 1st-line support worker/team (in which case Part 2 of the Process is repeated).
19	Trigger Event	The referral of the incident back to the 1st-line IT service support worker for closure, e.g. incident record 'object' appearing in 1st-line worker's work queue.
20	Motive	As 2
21	Project	IT service support worker "phantasying" to a time when she will have taken action to close the incident.
22	Action	a) Iterative process of observable sub-actions taken by IT service support worker interspersed with sensing of and reflection on the outcomes of those sub-actions and consequential decision-making on next sub-action to take. There is unlikely to be any refining of the motive or project (although this might occur as a result of communication with the customer as part of the closure process) This iterative process of sub-actions continues until the IT service support worker considers that they have played out their current "phantasy" successfully and fulfilled their current "in-order to motive". b) In doing so the IT service support worker will have experienced the Incident Management process stages of closing the incident.
23	End of Process	-
24	Trigger Event	The reporting of the incident to the single line IT service support worker, e.g. phone call 'event' or email 'object' in email in-box from customer
25	Motive	As 2.
26	Project	As 4.
27	Action	As 5.
28	End of Process	-

Appendix D: Matrices showing pre-prepared questions asked of each interviewee

Part A: Questions to all IT Service Support Workers:	Type 1 Interviews								Type 2 Interviews						Type 3 Interviews						
	Adam	Asghar	Doris	Jonathan	Judy/Kate	Navinda	Ravi	Sandra	Charles	Gareth	Lauren	Roger	Stephen	Tom/Dick/Harry	Anthony	Darren	John	Lionel	Mike	Nigel	Paula
Interview length (mins) →	41	27	46	25	59	42	28	27	34	35	24	53	54	37	28	27	52	32	34	32	17
How complex would you say your work is?																					
How hard do you typically need to work to resolve incidents as quickly as they need to be resolved?																					
How autonomously do your work?																					
a) How supportive would you say your colleagues in your team are? b) How supportive would you say your line manager is?																					
What is the most important knowledge someone needs to be able to perform your job well (or that of a support technician in your team)?																					
What level of expertise at your job are you now? (e.g. novice >>> expert)?																					
a) For your job, how long would you say it typically takes for someone to 'become proficient' at it? b) For your job, how long would you say it typically takes for someone to 'master' it?									a												
What do you find challenging about your work?																					
Would you like it to be more challenging, less challenging or to stay at roughly the same level of challenge?																					
How tired do you feel at the end of the working day?																					
a) What – if anything – gives you pleasure when you are at work? b) What – if anything – gives you displeasure when you are at work?																					
On balance, how effective do you think the team is?																					
What do you think about the software and tools that are used in the Incident Management process?																					
a) How would you describe the general character of the culture of your team? b) How would you describe the general character of the culture of your workplace in general?											a				b	b		a			
What level of cooperation would you say there is within the team?																					
a) what level of trust do people tend to have in each other's competence? b) what level of trust do people tend to have in terms of believing colleagues have each other's best interests at heart? c) what level of trust do people tend to have in terms of believing colleagues will meet their obligations (implicitly agreed)? d) So, in general terms what level of trust would you say there is within the team for each other?		a b c	d	d	a b c	d			a d		a b c	a b c					d		d		
In general terms what level of trust would you say people working at your level had in their immediate managers?																					
In general terms, what level of trust would you say people working at your level had in the senior management of the organization?																					

	Type 1 Interviews								Type 2 Interviews						Type 3 Interviews							
	Adam	Asghar	Doris	Jonathan	Judy/Kate	Navinda	Ravi	Sandra	Charles	Gareth	Lauren	Roger	Stephen	Tom/Dick/Harry	Anthony	Darren	John	Lionel	Mike	Nigel	Paula
What do you think about the importance of knowledge sharing for Incident Management?																						
a) To what extent does knowledge that is generated within the Incident Management process tend to get shared? (examples / anecdotes) b) How is it typically shared? c) What stops further knowledge-sharing within the team?					a							a										
In general terms what knowledge would you say you have gained since you have been at this organization?																						
How proud of their work would you say the team generally feel?																						
How often do you meet with your manager to discuss your performance and future prospects?																						
To what extent do you sense or are you aware of management measuring your performance?																						
Do management let you know when you have performed well? If so, in what way do they show you?																						
How secure do you feel in your job?																						
Why do you think you were recruited into the team?																						
What training opportunities have you had since you joined the team?																						
In what ways are you encouraged by management to learn from each other?																						
What workplace groups or networks apart from the team do you belong to? – working groups, professional, social etc.?																						
In what ways – if any - do you think that your family and your friends outside of work give you support that helps you to work effectively?																						
Daniel Goleman identified 6 leadership styles which leaders use at various times to different degrees, each of which might be the most appropriate style to adopt in certain circumstances. • What do you think? • Do what I say • Do as I do, now • Try this • People come first • Come with me" Which leadership style(s) would you say your line manager tends to adopt most? Why do you most associate their leadership style with that phrase?																						

Part B: Additional Questions to IT Service Support Workers with managerial/supervisory responsibilities	Type 1 Interviews		Type 2 Interviews	Type 3 Interviews	
		Ravi		Nigel	Paula
What sort of manager / supervisor would you say you were?					
To what extent does your role involve providing technical expertise?					
To what extent does your role involve carrying out performance appraisal of the team?					
What do you see as being the KPI's of Incident Management?					
What gets in the way of even higher performance?					
How challenging do you think the work of the team is?					
a) What – if anything – gives pleasure to the team members at work? b) What – if anything – gives displeasure to the team members at work?					
At times of high pressure or crisis some managers roll up their sleeves and help out whilst others continue to focus on their managerial or supervisory duties. Which do you tend to do?					
On balance, what is of primary importance: getting the incidents dealt with or making sure that when they are dealt with the work is done to a high quality?					
To what extent do you trust your team to work diligently and support each other?					
Approximately what is the staff turnover rate?					
Daniel Goleman identified 6 leadership styles which leaders use at various times to different degrees, each of which might be the most appropriate style to adopt in certain circumstances. • What do you think? • Do what I say • Do as I do, now • Try this • People come first • Come with me" Which leadership style(s) would you say you tend to adopt most? Why do you most associate your leadership style with that phrase?					

Appendix E: Interviewees' Demographic Details
Type 1 Workers

Worker (Pseudonym)	Organization (Pseudonym)	Team	Job Title	Employ-ment Status #	Gender	Age bracket	Years in IT	Years with Organ-ization	Highest Educational Level	Professional Qualifications	NQF/ QCF/ FHEQ* Level
Asghar	Stoneworks	IT Service Desk	Service Desk Analyst	FT	Male	20-29	2	1.6	HND Computer Technology	ITIL Foundation	5
Ravi	Stoneworks	IT Service Desk	Service Desk Supervisor	FT	Male	20-29	5	2	Degree	ITIL Foundation; Microsoft Certified Desktop Technician	6
Adam	Shire County Council	Education Services IT Service Desk	Service Desk Assistant	FT	Male	20-29	13	1.5	Degree	None	6
Sandra	Shire County Council	Education Services IT Service Desk	Service Desk Assistant	PT (22)	Female	30-39	12	3.5	GCSE's	IT User	2
Judy	Shire County Council	Corporate Services IT Service Desk	Service Desk Assistant	FT	Female	>=50	44	22	O' Levels	None	2
Kate	Shire County Council	Corporate Services IT Service Desk	Service Desk Assistant	FT	Female	40-49	31	22	O' Levels	None	2
Jonathan	UKHEE	IT Service Desk	Senior IT Service Desk Analyst	FT	Male	20-29	4	0.1	GNVQ Advanced Business Studies	ITIL Foundation; NVQ Level 3 IT Professional	3
Doris	UKHEE	IT Service Desk	Service Desk Analyst	PT (25)	Female	>=50	15	25	CSE's	NVQ Customer Services Level 2	2
Navinda	UKHEE	IT Service Desk	IT Senior Analyst	FT	Female	30-39	13	0.8	BSc Degree in Computer Science	Helpdesk courses	6
										Average Level→	3.78

Type 2 Workers

Worker (Pseudonym)	Organization (Pseudonym)	Team	Job Title	Employment Status #	Gender	Age bracket	Years in IT	Years with Organ-ization	Highest Educational Level	Professional Qualifications	NQF/ QCF/ FHEQ* Level
Stephen	Shire County Council	Corporate Services Desktop Support	Support and Installation Engineer Level 3	FT	Male	40-49	23	1.5	National Diploma	Microsoft Certified Professional; Apple Support Professional	3
Tom	Shire County Council	Corporate Services Desktop Support	Team Leader/ Support and Installation Engineer	FT	Male	40-49	15	8	Degree	Microsoft Certified Software Engineer; ITIL Foundation	6
Dick	Shire County Council	Corporate Services Desktop Support	Support and Installation Engineer	FT	Male	40-49	12	12	Post-compulsory education technical qualification	Microsoft Certified Professional	3
Harry	Shire County Council	Corporate Services Desktop Support	Support and Installation Engineer	FT	Male	>=50	18	20	O' Levels	Microsoft Certified Professional	2
Roger	Shire County Council	Corporate Services IT Service Desk (2nd level)	Support and Installation Engineer Level 2	FT	Male	30-39	5	8	BSc Degree	ITIL Foundation; PRINCE 2 Foundation; Microsoft Certified Software Engineer	6
Gareth	Shire County Council	Education Services IT Service Desk (2nd level)	Support and Installation Engineer	FT	Male	30-39	5	1.5	BSc Degree	Microsoft Certified Professional (X2)	6
Lauren	Stoneworks IT	Business Services	Business Process Analyst	FT	Female	20-29	3	8	BSc Degree in Logistics	None	6
Charles	Stoneworks IT	Desktop Services	IT Desktop Analyst	FT	Male	30-39	3.5	3.5	BSc Degree in Software Engineering; Diploma in Finance	Microsoft Certified Desktop Support Technician;	6
										Average Level →	4.75

Type 3 Workers

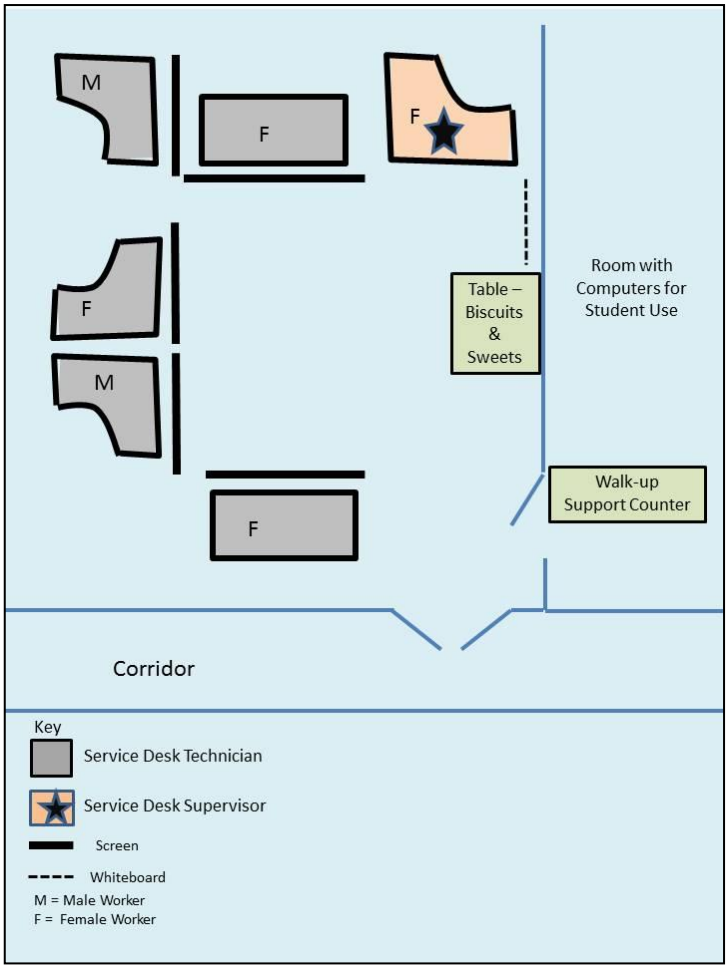
Worker (Pseudonym)	Organization (Pseudonym)	Team	Job Title	Employment Status #	Gender	Age bracket	Years in IT	Years with Organ-ization	Highest Educational Level	Professional Qualifications	NQF/ QCF/ FHEQ* Level
Nigel	Server Control	Support	Support Manager	FT	Male	30-39	13	7	B Eng Degree	Certified Information Systems Security Professional	6
Lionel	Server Control	Support	Senior Network Security Engineer	FT	Male	20-29	7	3	BSc Degree	Systems Security Certified Practitioner	6
Darren	Server Control	Support	Network Security Engineer	FT	Male	20-29	11	3	GCSE's	None	2
Anthony	Server Control	Support	Network Security Engineer	FT	Male	20-29	5	2.5	Degree	Systems Security Certified Practitioner; Cisco Certified Network Associate	6
Mike	Poyet	Service Support	Technical Systems Analyst	FT	Male	30-39	6	4	MSc Master's Degree	Red Hat Certified Engineer; ITIL Foundation	7
John	Poyet	Service Support	Windows Systems Support Engineer	FT	Male	30-39	14	0.2	GCSE's	Microsoft Certified Engineer Courses; ITIL Foundation; PRINCE Practitioner	2
Paula	Poyet	Service Support	Service Support Supervisor/ Technician	FT	Female	30-39	12	5	Degree	ITIL Foundation	6
										Average Level →	5

*NQF (National Qualifications Framework); QCF (Qualifications and Credit Framework); FHEQ (Framework for Higher Education Qualifications). The levels of these different frameworks broadly correspond (Directgov, 2011).
#FT=Full-time; PT (nn)= Part-time (number of hours worked per week)

Appendix F: Journal Pen Portraits of Teams

Type 1: UK Higher Education Establishment (UKHEE) IT Service Desk

The UKHEE IT Service Desk was theoretically the 'single point of contact' for IT service users reporting incidents or making service requests. In practice, local technicians often operated processes that enabled staff members to contact them directly to resolve issues and make service requests. Meeting the customer requirement without recourse to passing the matter to a second line team was important to the division. It proudly claimed in its annual report for 2009-2010 that '*the first-line fix-rate of the IT Service Desk has increased from 5% last year to 29% and rising this year*.' Recent managerial and some technician appointments had favoured candidates with ITIL IT Service Management qualifications and there had been attempts to implement aspects of ITIL 'best practice' across the division.



The Service Desk comprised five team members (2 male, 3 female) and a supervisor (female). Process and technological restrictions were imposed upon these workers such that they escalated most of the incidents and service requests they received to second-line teams after logging them. The team were all seated in one room on the top floor of a four storey high 1970's office block on the higher education establishment campus. The office design allowed for the workers to benefit from plenty of natural light. The desks were arranged along three of the walls. The supervisor sat in one corner facing out so that she might survey the work being carried out and be available for advice (see diagram). There was liberal use of screens to create boundaries around individual workspaces. The supervisor's desk was however not screened off. The workers desk spaces reflected their individuality rather than a homogenous corporate identity. The dress code was implicitly one of appearing 'business smart' rather than 'casual' or 'formal'. All but one of the technicians answered the phone in a 'traditional' way by picking up the hand-piece and putting it to their ear even though they had all been issued with headsets. The exception was Jonathan who had recently joined the team from the Service Desk at Stoneworks where wearing a headset was the accepted norm. He wore a headset

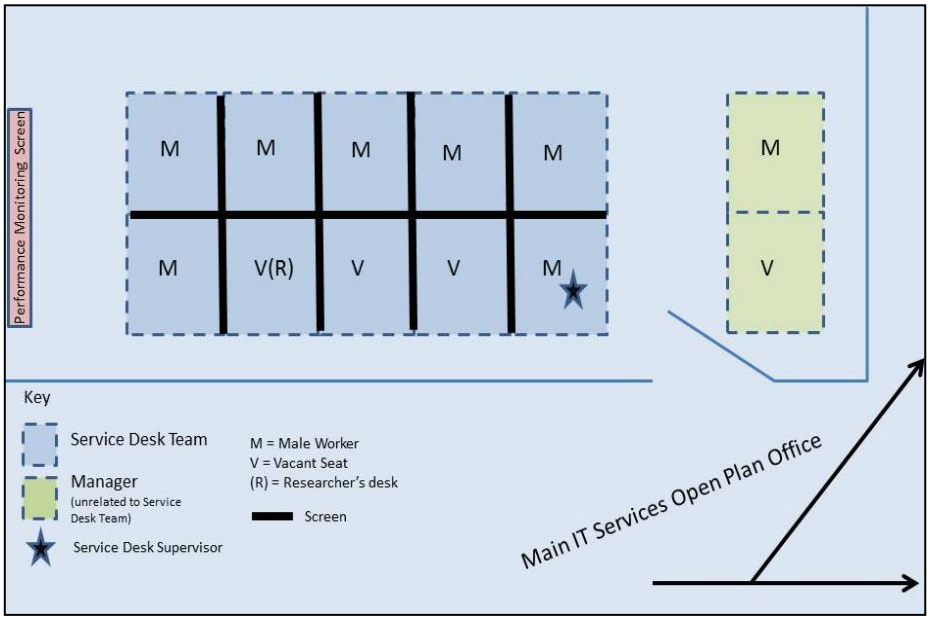
connected up to his phone but frequently removed it during quieter work periods, of which there were several during the period of my visit which was outside of the education establishment's term time.

Type 1: Stoneworks IT Service Desk

Stoneworks' IT Department, comprising 72 staff was located in a modern (built 1999) two-storey Swiss cottage style building on the edge of a large quarry site and store with its own active railway branch line. There was one main open plan office downstairs and several smaller open plan offices. Adjacent (or within) the main open plan office were three etched-glass-walled offices: one was occupied by the Chief Information Officer, another was a meeting room, and the third was home to the nine IT Service Desk workers organised into two rows of cubicled workstations (see diagram). The external wall was also largely glass windows with blinds pulled right back allowing for natural light to flood into the room. The view from these windows was of a sportsground and trees.

Across the department, the walls were plastered white, the carpeting grey and flecked, and the office furniture uniform, modern and corporate (in pine and shades of blue-grey). Each worker was uniformly equipped with a networked laptop connected to a 14 inch flat-screen monitor.

The cubicles in the Service Desk room gave an impression of order. The desk space was significantly less than that allocated to other workers in the department but equipped with an additional monitor. These cubicles were 'walled' in by shoulder height barriers that allowed for workers to communicate with each other at head height, but also to retain control over their personal work domain which they personalised during the day, but returned to a standardised layout at the end of the day in adherence to a clear desk policy.



There was a noticeable demographic homogeny within the group. Although across the department there was a 2:1 male/female ratio, the Service Desk workers were all early-career men (in their early to mid-20s). Six of the seven workers in the office on the day of my visit appeared to be of British Asian heritage whereas there seemed to be very few British Asians elsewhere within the rest of

the IT department. All the Service Desk workers, who worked on a staggered shift basis to cover normal office hours up to 6 pm, seemed to be hard-working and were welcoming to me as a visitor interested in their work. They also adhered to the standard male 'smart casual' dress code of the office. All wore single-ear headsets which enabled them to hear at the same time both the user contacting the Service Desk and their colleagues within the office. They were given autonomy as to how they answered the phone and each worker used their own words.

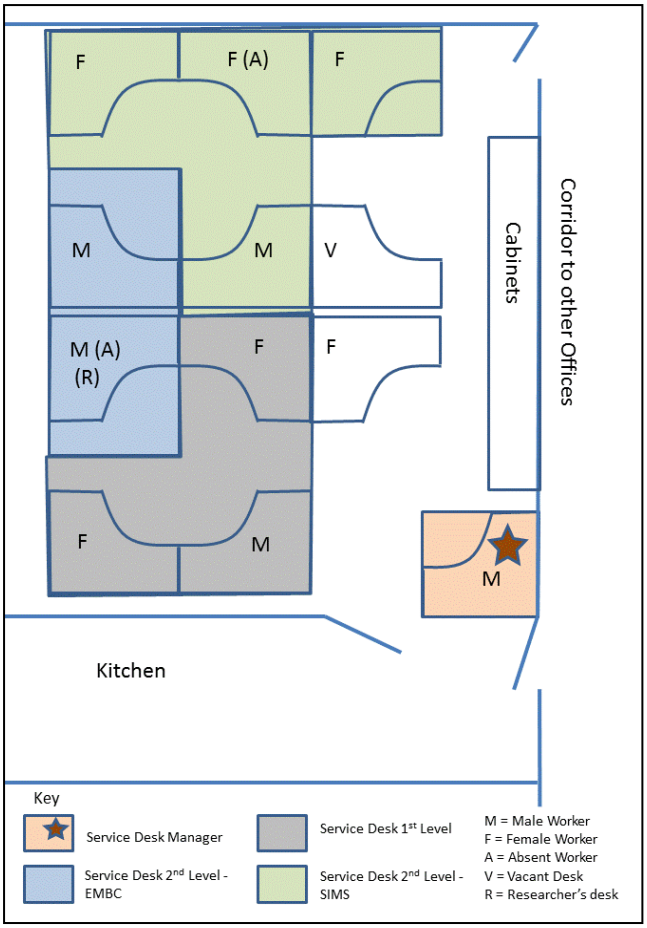
For large parts of the day, the workers were constantly moving from one incoming phone call to another, subconsciously encouraged by the data displayed on a large monitor on the wall. When the screen was green they were constantly busy. If the screen went red, as often it did, it effectively shouted that they were in breach of service level agreements and needed to work quicker so that the screen would return to green. In this respect, technology could be seen to be controlling their behaviour.

The demographic homogeneity of the workforce made the Service Desk a particularly sociable workplace which manifested itself in empathetic banter. Three definable stages of banter could be identified which seemed to correlate to the intensity of the workload being received by the team. When the calls were coming in 'thick and fast' the workers applied their attention totally on the task of engaging with the users with no social banter and little discussion with colleagues about work-related matters (such as the incidents they were working on). When they were fairly busy, the primary focus remained on the work at hand, but there was some social banter intermingled with work-related discussion. When the pace of work slowed (and it never slowed that much!) the primary focus remained on the job but there was noticeably more social banter with little discussion of work-related issues. The social banter throughout the day involved all but one particularly quiet worker and was wide-ranging in its topics. These topics included: movies: '*Anyone seen that Precious film?'*; the weather: *'It's freezing out there';* sport: *'Villa will trounce Chelsea', 'Is it the start of the F1 season next week?';* Computer games: *'On 'Bad Company 2' the graphics are insane'*; cars: *'Do you regret buying it now?';* sexual-referencing: *'I've set the master password to hobnob69', 'Have you really?', 'No', 'Good job or you'd be getting your P45';* and fast food: *'Anyone want pizza?' 'You made pizza?' 'You actually made it yourself?'*

Types 1 and 2: SCC Education Services IT Service Desk

Located in a converted Grade 2 Listed Art Deco industrial building (built in 1936) in the Northern suburbs of the county's major city, the Education Services IT Service Desk was dedicated to the Education Services provided by the County Council. This Service Desk was a single point of contact for incidents and service requests relating to the IT provided to support the county council's Education Services.

The Service Desk was located on the top floor of a recently refurbished industrial building that had acquired grade 2 listed status and been taken on by the County Council as office accommodation. The Service Desk team, which handled incidents relating to the IT services provided to the county's publicly-funded schools, were self-contained within one room with its own adjoining kitchen area. The team manager sat in the corner by the door, facing away from the workers towards the wall. His demeanour was casual and he appeared as being supportive of his team in a laid-back manner. The team was effectively split into three parts (see diagram).

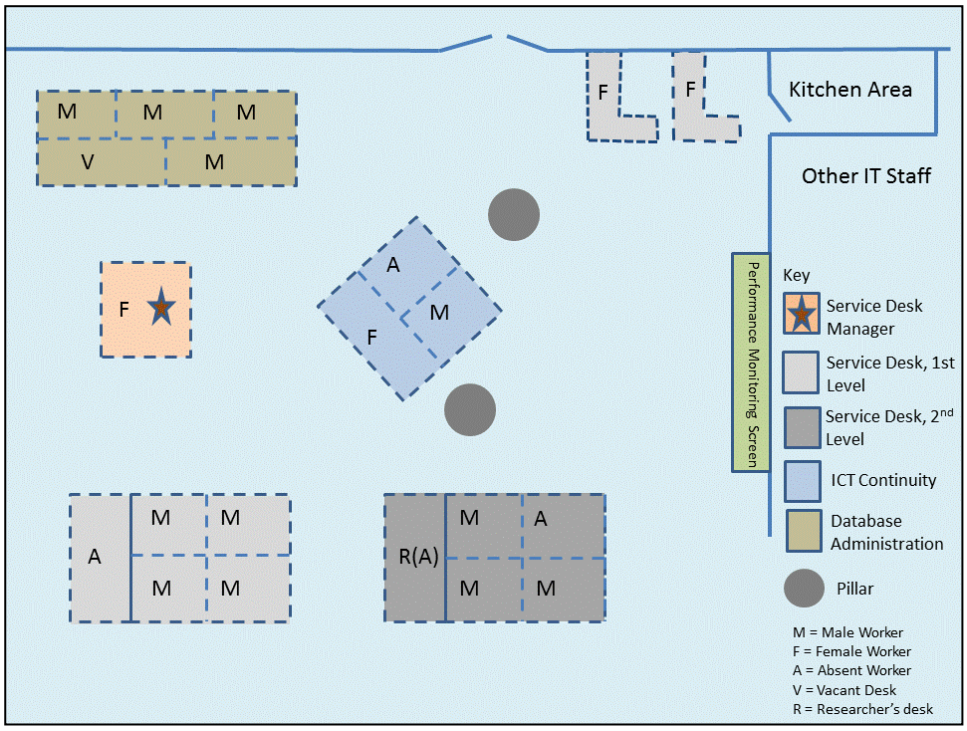


Three workers, Adam, Sandra and Tina, took the calls that came into the 'single point of contact' phone number and email address and via the Internet. One worker would take the lead on the phones at any given point of the week for a morning or afternoon session. The others would pick up additional calls that came in whilst this worker was handling a call. Calls were directly answered, rather than via an automated call response system. This enabled the workers to carry out other duties and work at resolving incidents and fulfilling service requests that came in via email or the Intranet.

Where incidents could not be resolved over the phone within approximately 20 minutes they would be passed to a second-tier worker depending on the particulars of the incident. If the matter related to the SIMS system, then the matter would be referred to the team of four specialist workers whose primary role was to train users in the system. Often the matters referred to them involved them in educating the user in how to use the system, rather than in fixing a fault. Other matters were referred to Gareth. Theoretically, Gareth worked in tandem with a colleague, Said, but Said had health issues and worked from home. Work was typically referred to Gareth by handing a piece of paper with details of the incident number across the desk divider.

Types 1 and 2: SCC Corporate Services IT Service Desk

SCC's Corporate Services IT Service Desk supported the IT used by all of the County's service divisions except Education Services (e.g. Social Care; Leisure Services; Environmental Services). Sharing a senior IT service delivery management with the Education Services IT Service Desk, the Corporate Services IT Service Desk was in part organised in a similar fashion, such that where an incident or service request could not be completed or escalated to a second line team (e.g. Desktop Services) within 20 minutes, it was passed to a second-tier worker within the team who could work on the matter without the pressure of dealing with in-coming calls to the 'single point of contact' phone-number. Within the Corporate Services IT Service Desk the second-tier workers would occasionally stand in for the first-tier workers (e.g. if they are called to a team meeting) and handle the incoming phone calls and emails.



Two other workers, Kate and Judy, were also members of this Service Desk team. They had specific responsibilities for fulfilling service requests to set up and modify user access rights to the organisation's systems, and sat apart from the other Service Desk workers on the other side of the open plan room (see diagram). This second-floor office space was situated in a cuboid pre-fabricated block (built in 1962 as temporary office accommodation and now identified for demolition), annexed to the rear of the impressively imposing 1930's County Council Headquarters.

As workers ascended the stairs to get to their desks they were confronted at regular intervals with inexpensively-framed 'inspirational' management posters. One read: 'DO NOT FEAR THE WINDS OF ADVERSITY'; another: 'REMEMBER A KITE RISES AGAINST THE WIND RATHER THAN WITH IT'. These stood in juxtaposition to an untidy trade union noticeboard at the top of the stairs shouting messages of protest against 'the cuts' to services being made by the county council in response to national public expenditure cutbacks.

Kate and Judy, both middle-aged women who had been with the council for over 20 years, were keen to inform me about their work, to the extent that they actually went about training me methodically in how to do their job! Unfortunately, this did not enable me to actually gather reliable data for comparative analysis on

how they normally went about their job. They were also very supportive of my request to interview them, though they expressed a preference to be interviewed together. This interview was enlightening and served to reveal differences between these two workers and the other Corporate Services Service Desk workers.

Kate and Judy's accommodation of my requirement to understand their work stood in contrast to the unsupportive attitude of the rest of the Service Desk in response to my requests to sit with them. I was though able to observe them at work at a distance. They seemed to be a 'close-knit' group of young men who, despite being equipped with headsets, engaged in a high level of conversation about shared interests. This conversation flowed naturally from talk about servers and other technical matters, to talk about departmental practice, to moans about the working conditions (particularly the malfunctioning air conditioning unit), to talk about football. The fact that their female supervisor was seated within earshot did not prevent them from discussing the advice given by a football manager to his players about having sex before matches. Having been encouraged to approach them by their management I did so but found none of them keen to accommodate me either by allowing me to sit with them and write down my interpretation of their work activity or to interview them. I accepted that as a group they had no inclination to give me insider insight to their work and were exerting power as a group in expressing their individual unwillingness. I was aware that this was a time when County Council workers were being selected for redundancy and that this might understandably make them suspicious of an 'outsider' wanting to observe them at work or ask them questions. I therefore chose not to impose myself on them or take the matter up with their management, and instead took advantage of a time when they were all called to a meeting and Roger, a second-tier worker who was more supportive, substituted for them. Thus I was able to observe first-line first-tier work, albeit done by a second-tier worker.

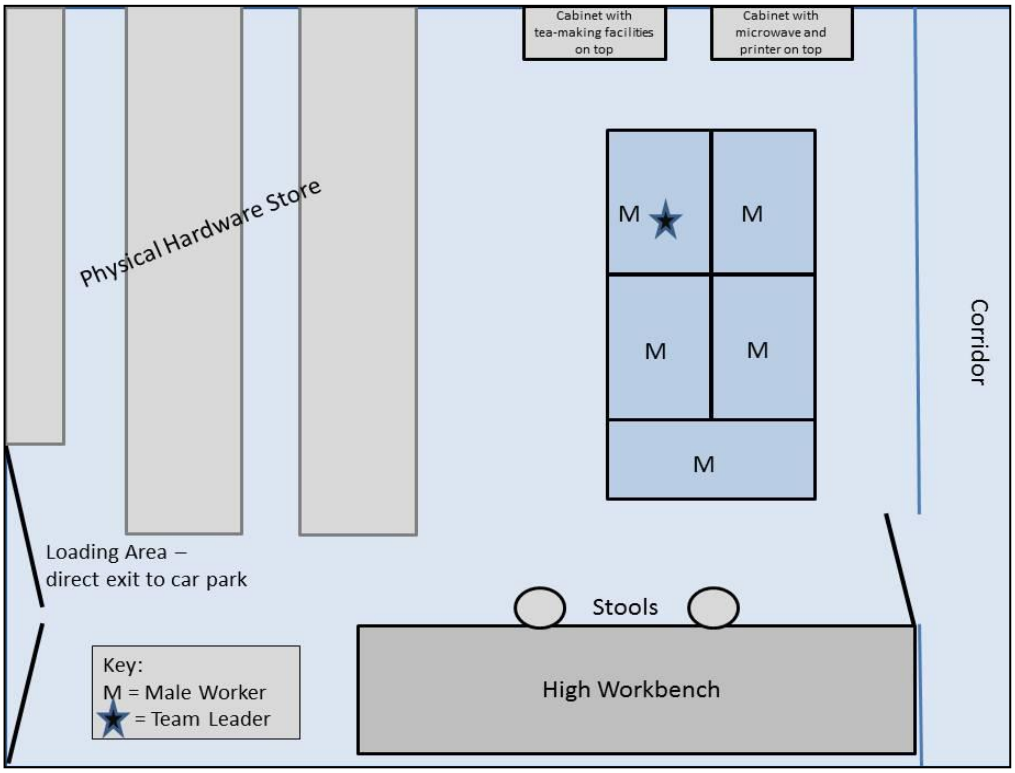
This IT Service Desk was a single point of contact for all non-Education Services issues except those relating to access rights. When a 'customer' contacts the Service Desk they initially hear an automated message: 'Welcome to ICT Service Desk. Please hold whilst we transfer you to the next available operator.' They are then placed in a queue until a worker becomes available.

Type 2: SCC Corporate Services – Desktop Services

The Desktop Services team were sited on the ground floor to the rear of the main County Council office building, an impressive 1930's structure with neo-Georgian features and a collection of statues of different pre-war workers from around the county. The five workers in the team generally congregated within one room which served as office space, technical workshop where computer equipment could be maintained and hardware store for new computer equipment and spares (see diagram). The team leader also had another desk along the corridor within an open plan office occupied by managers with IT-related responsibilities.

As you entered the room from the corridor, the first thing you noticed was the high workbench with stools for the technicians to sit on. The workbench was

littered with computer hardware that was undergoing repair, screwdrivers and other tools. Above the workbench were a collection of manuals and guidebooks and various organised peripheral items, such as screws and bolts, which might be used when maintaining the hardware. The remainder of the room was given over to free-standing shelving containing computer hardware that had been delivered and was awaiting distribution and spare equipment ready to replace failed hardware.



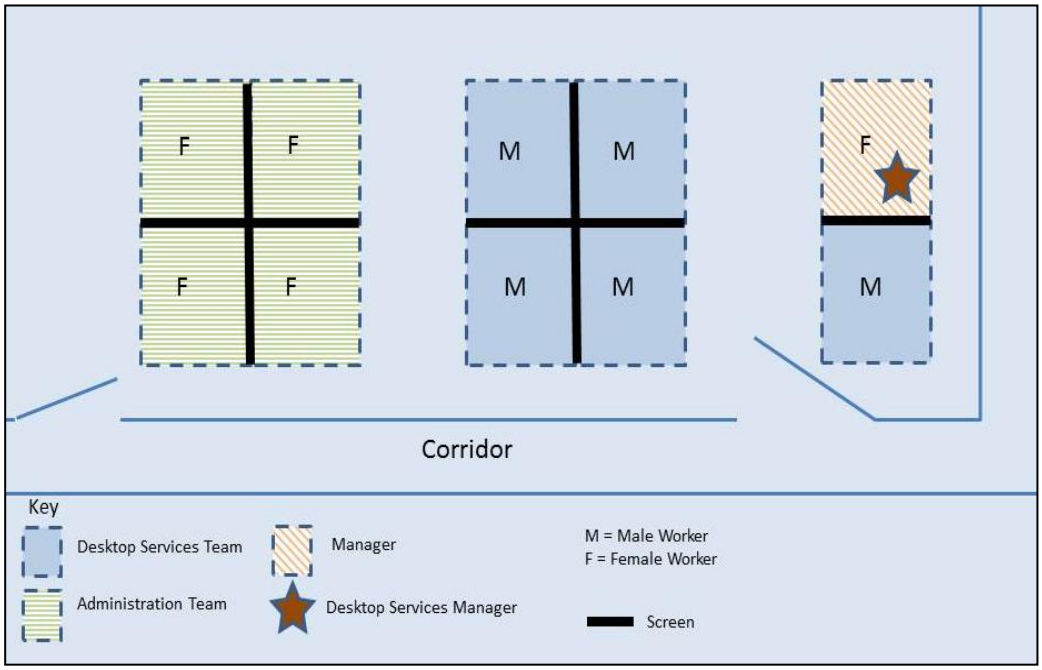
The team were friendly towards each other and, whilst they worked on incidents individually, were supportive with the technical aspects of the work. They appeared to be highly conscientious as a team and, whilst they did not face constant interrupting phone calls, they worked solidly throughout the periods of observation.

Type 2: Stoneworks Desktop Support

Stoneworks' Desktop Support team comprised five workers (all male) and one manager (female). They were located in the same building as the Service Desk team, along the main corridor in a smaller room which they shared with four female administration workers (see diagram).

In contrast to the administrators' desks, the Desktop Support team workers' workspaces were on multiple levels: ground-level under desk, desk-level, and shelf-level above desk. All of them were crowded with various hardware, some of which they used (e.g. each desk had a keyboard, two screens, one or two laptops and a telephone) and some of which were just lying around unconnected to a power source (e.g. DVD drives, routers, power converters). These spaces were also filled with an array of computer peripherals, cardboard boxes, mobile phones, wires, manuals, paperwork and post-it notes. Perhaps tellingly, on one of the shelves was a polystyrene model rocket with 'STRESS 1' emblazoned upon it.

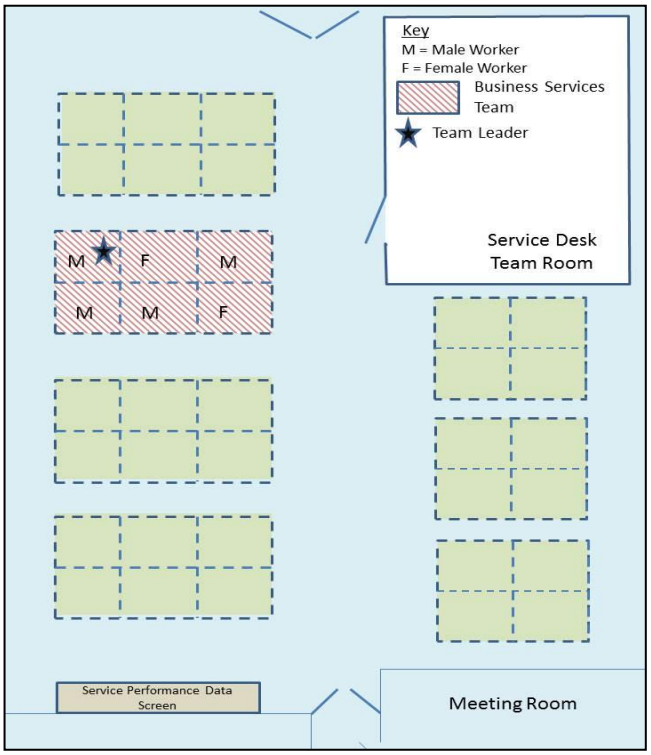
Whereas the Service Desk room gave an impression of order, the Desktop Support team's work space gave an impression of chaos. The multi-level nature of these desks created distinct boundaries around each worker, such that when conversations between workers took place they were either conducted blindly or one of the workers stood up so that they might see their colleague.



Four of the five workers were aged in their late 20's to early 30's, the fifth being considerably older and who was accorded status by sitting opposite the team manager, who was aged over 40. Work tasks were allocated by the manager, who took account of particular areas of expertise. Workers would access a spreadsheet to see what work had been allocated to them.

Type 2: Stoneworks Business Services

Stoneworks' Business Services team comprised six workers (four male; two female) of whom one was the team leader. They were located together in the largest open plan office at Stoneworks, just outside the glass-walled office of the Service Desk who referred incidents to them for investigation etc. (see diagram).



The office was typically corporate, furnished with uniform beech-veneered desks. With windows along both sides separated by modern art canvasses and posters promoting a corporate initiative to 'Focus on Our Future', the room appeared

light and airy. The team gave an impression of being closely-knit, often working collaboratively on incidents. Their work often took them away to conduct service reviews with users of the Enterprise Resource Planning (ERP) application (a tailored version of Netsuite OneWorld) that they supported. Being an aggregates company, these visits were typically to rural areas across the United Kingdom (as far afield as the Outer Hebrides) and required them to stay away together for days at a time. Although the team were situated within the IT division, because they had a particularly strong business focus, there was a feeling, expressed by Lauren, that they were semi-detached from the division: '*I think we kind of get swept to the side a little bit'.*

Type 3: Server Control (UK) Service Support Team

At the time of data collection Server Control (UK) Ltd had for seven years been the UK distributor of IT Security products and services for businesses offered by its Hong Kong based parent corporation. The parent had similar arrangements with outpost offices in 6 South East Asian countries, the USA and Australia and as such presented itself as a global IT security services provider. In turn, Server Control (UK) had licensed two companies as resellers of Server Control products and services as part of their own service portfolio. The specific IT security hardware products and services marketed included: internet security, IT health monitoring, analysis and reporting of hacker attacks and intrusion attempts, and regulations compliance. At the time of data collection the diverse range of customers included premiership football clubs, producers of 'fast moving consumer goods', energy transporters, local authorities and Poyet Systems. The company implicitly advocated systems thinking having in 2005 been awarded the ISO27000 certification for Information Security Management Systems and followed this up in 2008 with the ISO9001 certification for Quality Management Systems. At the time of data collection it was considering seeking ISO20000 certification for IT service management systems.

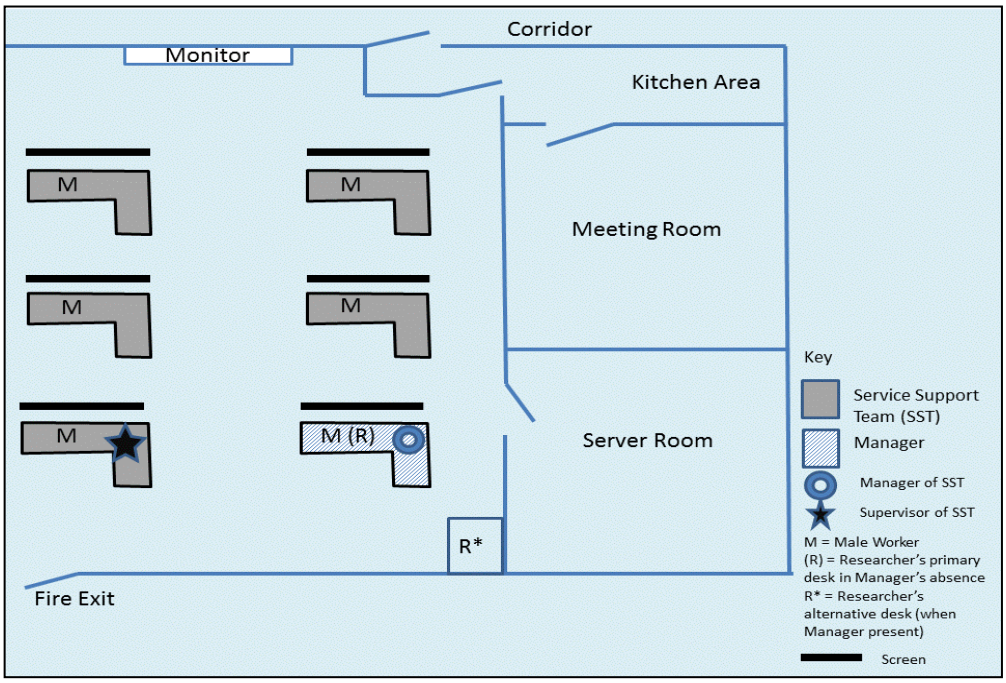
The company were operating from a unit within a Business Park in Central England. This Business Park has been constituted within buildings that once were used by a large traditional engineering company which remains on a reduced plot of land within the same industrial site. Server Control occupied a 100m^2 unit within a mid-twentieth century single storey brick building with a warren of corridors leading to 50 other units. The premises were inauspicious and they operated a 'no visitors' policy to conceal the small size of the operation and the unimpressive accommodation as well as the espoused reason to ensure security. This policy has been acceptable to all customers except one who took their business elsewhere (journal entry: conversation with Nigel). Promotional material emphasised the global nature of the business, suggesting a large corporation. In fact the UK operation consisted of just seven personnel: the MD (Craig), a salesperson (Keith) and five technical support technicians, one of whom (Nigel) supervised the work of the team. The reality of the size of the organisation in terms of number of employees meant that service support was a particularly vital element of their business.

One of the technicians – Anthony – described the set up as '*more like a family than anything else*.' To follow his metaphor, Craig, at 15-20 years older was the

father figure, who was out of the familial setting most of the time and when he was present he stood out as the only person dressed in a suit. Nigel performed the role of eldest brother whom all the others 'looked up to' accepting his authority over them. The company was exclusively male with all five technicians (including the supervisor) sharing a demographic group of technically-minded white men in their late 20's and 30's, dressed casually, typically in jeans and t-shirts. The technicians' desks were arranged all facing in the same direction either side of a central aisle and separated from each other by high dividing screens, which Craig told me had been requested by the technicians. The room enjoyed no natural light and these screens added to an air of claustrophobia within the room. The three clocks on the wall showed the time in the UK, Hong Kong and Houston. All the technicians had three monitors on their desks, all connected to the same networked computer, and they used all of these most of the time, seamlessly moving from one screen to the other.

The furniture was functional and little thought had been given to décor with the walls covered with whiteboards, which were not routinely wiped after use. In the spaces between these boards were erratically positioned documents containing contextual technical knowledge such as important IP addresses and network design diagrams. One of the technicians kept his desk impeccably tidy, but for other workers, a tidy desk did not appear to be important to them, and by extension to the company. In the corner of the room was a spare desk and on this desk sat one tired uncared for pot-plant surrounded by various ICT hardware and paraphernalia, discarded packaging, a folder labelled QA and a telephone. Propped up against the desk were three sheets of plasterboard, 1 sheet of chipboard, 2 planks of wood and a trolley for moving hardware around. The room was heated by a free-standing oil-filled radiator that had been positioned at an angle in the middle of the room, with its electrical flex trailed across the room and inelegantly stuck with tape around the door frame and along the wall to the socket.

The office layout encouraged quiet working within the open plan desk arrangement (see diagram). To get to their desks and to exit the room the four technicians without any management responsibilities had to pass between the desks of the MD and the supervisor. All the desks faced in the same direction, thus ensuring that making eye contact with others as a precursor to conversation required the physical effort of turning around. High screens around each desk isolated the technicians further and the studious environment was actively



encouraged through the advocacy of instant messaging for intra-room communication. Workers seated two metres apart, where necessary, communicated via technology rather than by speaking to each other. The resultant environment was reminiscent of a University library, with workers engaging in individualised knowledge work surrounded by others doing the same. The normal noise in the room was that of an orchestra of computer keyboards being tapped at. On one occasion, the MD arrived with the Sales Manager and the atmosphere became more energised with conversations springing up involving all the workers. However, generally, there was very little social conversation in the office, such that, as researcher, I learnt very little about these workers' lives outside of their work.

All the staff were very hospitable and unfailingly polite. At no time did any of the workers become irate or use bad language. Standard behaviour included maintaining a reserved and conscientious demeanour. As a rule they worked through their lunchtimes and it was notable when Darren asked Nigel: '*Have I got time to pop into town?*' that the reply '*Sure*' was succinct but confirming of the need to ask permission to take a lunch break. At no time did any of the workers have anything on their 3 monitors that was not work-related. The Internet was accessed strictly for work related purposes to assist in the resolution of incidents.

The Service Support team were a single point of contact for the reporting of incidents and service requests. All were handled through to completion within the team. Although, there was a facility for the team to refer incidents to a support team in Hong Kong this was seen as being a last resort and rarely used[11]. As such the work of this team was regarded for the research as Type 3 work: single line work where there is no organisational structure for functional escalation.

Type 3: Poyet Systems IT Service Desk

Poyet Systems was a UK based SME technology company. Its core business was providing secure IT systems and services for the electronic communication of sensitive information such as military and homeland security intelligence. On its website it lists NATO, the US and Canadian military and intelligence agencies, and European defence departments including the UK Ministry of Defence amongst its high profile clients. The company had been targeted by campaigners against the arms trade and access to the building and rooms within the building was electronically controlled. On my arrival on the first visit I was told by management that there was a constant expectation of facing some sort of protest at the workplace.

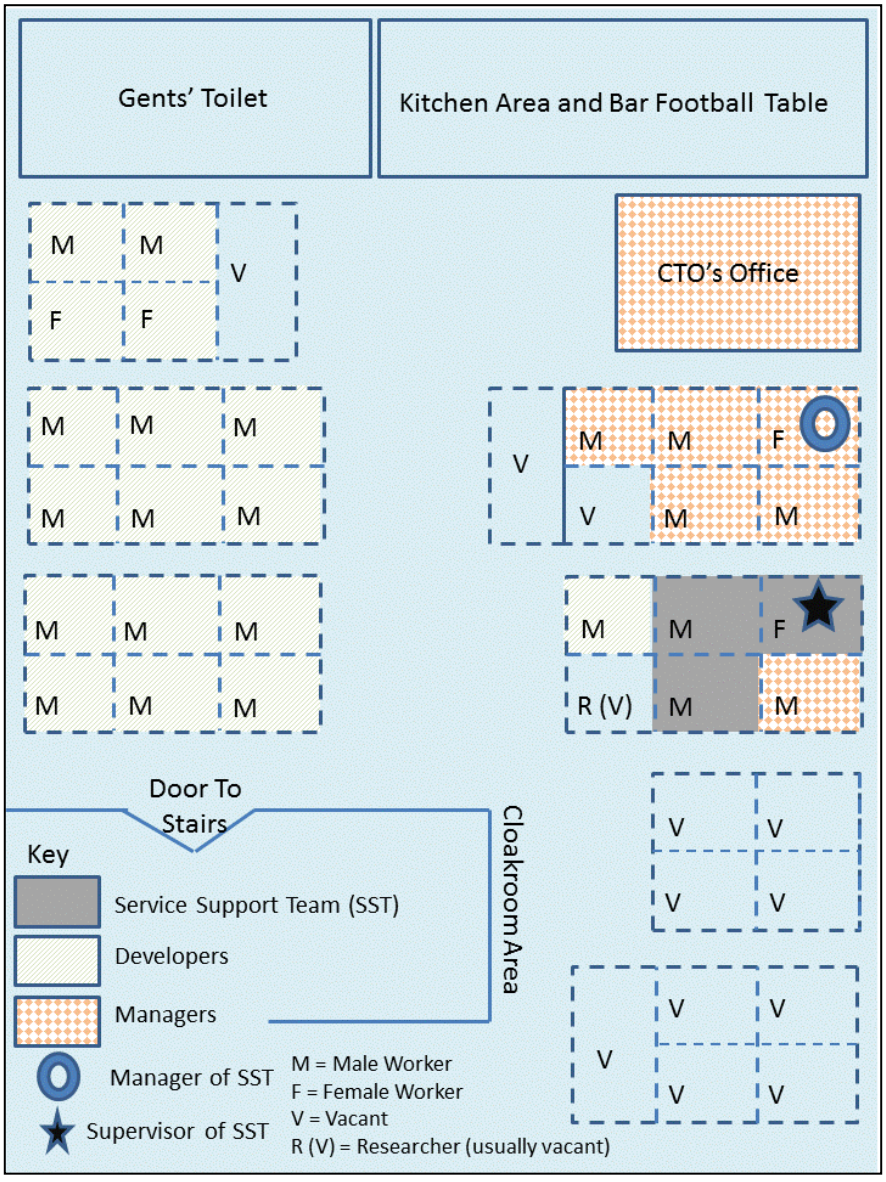
Acknowledging the central role of IT, the Chief Technology Officer (CTO) was a key strategic decision maker and reported directly to the Chief Executive Officer. In a company brochure Poyet defined its management philosophy as '*to recognise and build on each individual's talents so they find enjoyment and satisfaction in their work.'* Poyet had shown great enthusiasm for process methodologies, adopting 'the philosophy that its processes and procedures will be fit-for-purpose and 'Lean'' (company published document). They had subscribed to several

[11] reference: notes of meeting with Nigel and Craig; interview with Lionel

process-oriented standards, proudly displaying in their reception area many certificates as evidence of their commitment to following 'best practice' guidelines. These included ISO9001 certification for Quality Management Systems, ISO27000 certification for Information Security Management Systems and Investors in People. Its enthusiasm for being seen to be associated with best practice was also indicated by its corporate membership of ten different industry associations including the ITSMF, and its status as a Microsoft Certified Partner.

The workforce of approximately fifty were all located in one 1990's-built two-storey red-brick office on a gated business park in the suburbs of a mid-sized UK city. Approximately half of the staff were IT professionals, predominantly programmers developing and enhancing software. These IT workers all worked in one first-floor office of 40 separate workspaces of which 13 were vacant and 6 allocated to managers who did not participate in any of the technical workload. The CTO had a walled office in the corner of the main open-plan office with a large glass window from which he could oversee the activity in the main room. The vacant desks reflected a recent downsizing programme (see diagram).

The office space was functional, with workstations that were inconsistent in terms of the furniture and computer equipment. On day 3 of my visit I recorded in my diary '*there is an air of untidiness and clutter*', noting specifically that Mike left a partially-empty bowl of cereal on his desk throughout the day.



Similarly, I recorded a description of another desk which reflected the general lack of concern for spatial order within the workplace:

> *The worker has on his desk a large bulky CRT monitor, on a stand which has underneath it various pieces of paper; and an additional flat screen monitor. Both monitors are in constant use as the worker alternates between the two. Also on the desk is a personal desk library of several technical books, obscured by a multipack of crisps, a bulky electric fan which is perched on the edge of the desk (and unlikely to be useful during January!), a personal landline telephone that never rings, a carrier bag (presumably holding the worker's lunch), a stationery desk tidy, a tower of plastic trays that seems to be straining under the weight of many documents. The worker has not used the cloakroom, choosing instead to hang his bulky winter coat over the back of his chair. The worker wears a set of DJ headphones as he sits at his desk with his feet tucked up behind him for lack of room under his desk which is cluttered by a haphazardly positioned computer and a large bag.*

This lack of concern for eliminating clutter extended to communal space and shared furniture. For example, I noted that one set of shelves housed various folders and manuals (randomly organised and positioned), a partially-inflated globe, three sporting trophies and a precariously balanced box on top of a one foot high stack of card. This untidiness was at odds with the organisational espousal of lean working (and TQM) principles associated with process improvement, notably the emphasis on neatness and 'clearing out' (Bateman, 2005, Dennis, 2010). And the question arises as to whether there was a relationship between this chaotic physical working environment and the apparent somewhat chaotic approach to incident management that was observed. In this regard it is not without significance that when John joined the IT Service Desk nine weeks previously he decided his first task needed to be one of tidying up the store of spare hardware items, media and cabling and labelling up hardware assets (journal notes).

Seventeen of the IT workers were allocated to development projects. Only three were allocated to service support: Paula (the supervisor), Mike and John. Together they supported external customers and internal colleagues who used over 80 servers and subsidiary hardware (including printers) and applications.

Whilst my focus was on the work of the Service Support Technicians, the culture of the office seemed to be dominated by the developers and this was especially apparent when managers were out of the office which was frequently the case. A significant number of staff wore headphones and listened to music as they worked, shutting themselves off from their colleagues and appearing to fully engage with the computer screens in front of them. Telephones were rarely used within the office, though there was one on most desks. The IT Service Desk rarely took phone calls but did occasionally call customers to discuss their requirements or the incidents they were working on. Crude language was fairly common in the room and appeared to be tolerated along with other disruptive passionate outbursts. One developer had a habit of sharing his technical frustrations, e.g. *'Come on, you slow useless piece of junk.'* This developer also regularly swore

loudly and made several comments that might cause offence to others, e.g. *'I like all fat birds!*' There was an awareness of the brashness of the office culture that had evolved. At one point a conversation was had between three developers about swearing in the office, with one of them admitting: '*If my wife ever heard what I was like in the office I'd be in right fucking trouble.*' Swearing was particularly apparent when the few women based in the room were absent. However, it was implicitly tolerated as part of the office culture. On another occasion, whilst I was observing a technician at work, a loud shout was heard from the kitchen area, where a table football game had been installed: '*FUCKING HELL!*' Interestingly this was acknowledged with widespread laughter across the office and various comments being made, none of which were condemnatory.

The IT Service Desk did not however engage with this bad-language banter. Indeed on another occasion when the air was blue with swearing and perhaps concerned with my status as a visitor with a remit to observe, Mike commented that *'we don't normally swear this much*' and John concurred saying '*On this side of the room we tend to be more professional. All the 'effing 'n' jeffing' comes from that side of the room*'.

The IT Service Desk was both the first and last port of call for the reporting of incidents and the requesting of service changes. Any incidents that were not resolved were either left unresolved or escalated hierarchically (rather than functionally) to management to decide on any further action to be taken; e.g. to allocate a developer to work on a solution. As such the work of this team is regarded for the research as Type 3 work.

Appendix G: IS Worker Salary Information

This Appendix shows analysis of data relating to IS Workers who have in their job title respectively:

Part 1) “Support”

Part 2) “Developer”

Part 3) “Specialist”

Part 4) “Manager”

Part 5) “Help Desk” or “Service Desk” or “1st Line” (Operational Jobs)

Part 6) “Help Desk” or “Service Desk” or “1st Line” (Manager, Supervisor or Team Leader Jobs)

To better understand the salary levels of IT Service Support workers, the extensive data collected by the web service IT JOBS WATCH was accessed at http://www.itjobswatch.co.uk/ . IT Jobs Watch provides a web-based IT jobs tracking service, claiming to provide “a unique perspective on today's information technology job market” (http://www.itjobswatch.co.uk/about.aspx) by providing salary information based on job title. They source data from IT recruitment websites and continuously survey to ensure currency of the information they provide. The average salaries they quote are based on the median or 50th percentile, thus negating the effect of outliers (i.e. very high or low salaries compared to the rest of the market).

The website offers a search facility. The data in results from separate search requests on the strings: “Support”, “Developer”, “Specialist”, “Manager”, “Help Desk”, “Service Desk” and “1st Line”.

The results from such searches reflect the data collected by IT JOBS WATCH during the previous 3 months from the search. All searches were carried out within a week of each other in May and June, 2011.

Part 1) IS "Support" Workers

IS Worker Jobs with 'Support' in the Job Title, differentiated by salary bands. Following the search on IT JOBS WATCH, the resulting list of job titles was then manually scanned and any jobs that additionally included the word "Manager" were removed from the list. However the few job titles that included the words "Supervisor" or "Team Leader" were included as these were perceived to be more likely to include an IT-technical element to the work.

Table below provides an overview of the collected data.

Salary Band	Salary Range	Number of Jobs Advertised	Midway point of salary range (m)	%'age of "Support" jobs in Salary Band (rounded to 2 decimal points) (j)	Typical Types of Jobs in Band
A	£12,501 to £17,500	48	£15,000	0.20%	Front-line Support Roles
B	£17,501 to £22,500	1259	£20,000	5.30%	
C	£22,501 to £27,500	4004	£25,000	16.85%	Back Office Support Roles without significant IT specialism
D	£27,501 to £32,500	8780	£30,000	36.94%	
E	£32,501 to £37,500	4548	£35,000	19.13%	Back Office Support Roles with more significant IT specialism
F	£37,501 to £42,500	4338	£40,000	18.25%	
G	£42,501 to £47,500	661	£45,000	2.78%	Senior roles and Scarce Skills Specialists
H	£47,501 to £52,500	44	£50,000	0.19%	
I	£52,501 to £57,500	6	£55,000	0.03%	
J	£57,501 to £62,500	10	£60,000	0.04%	
K	£62,501 to £67,500	34	£65,000	0.14%	
L	£67,501 to £72,500	37	£70,000	0.16%	

An approximate typical salary for a "Support" IS worker was calculated using the formula:

(mA X jA) + (mB X jB) + (mC X jC) + (mD X jD) + (mE X jE) + (mF X jF) + (mG X jG) + (mH X jH) + (mI X jI) + (mJ X jJ) + (mK X jK) + (mL X jL)

where:

- m = the midway point within salary band
- j = percentage of jobs advertised within salary band
- A,B,C,D etc. = the Salary Band

This produced a figure of £31,960 from a sample size of 23,769 advertised jobs.

Part 2) IS "Developer" Workers

IS Worker Jobs with 'Developer' in the Job Title, differentiated by salary bands.

Table below provides an overview of the collected data.

Salary Band	Salary Range	Number of Jobs Advertised	Midway point of salary range (m)	%'age of "Developer" jobs in Salary Band (rounded to 2 decimal points) (j)
A	£12,501 to £17,500	0	£15,000	0.00%
B	£17,501 to £22,500	1271	£20,000	1.39%
C	£22,501 to £27,500	2967	£25,000	3.25%
D	£27,501 to £32,500	1854	£30,000	2.03%
E	£32,501 to £37,500	29773	£35,000	32.59%
F	£37,501 to £42,500	22221	£40,000	24.32%
G	£42,501 to £47,500	16049	£45,000	17.57%
H	£47,501 to £52,500	11667	£50,000	12.77%
I	£52,501 to £57,500	881	£55,000	0.96%
J	£57,501 to £62,500	2423	£60,000	2.65%
K	£62,501 to £67,500	1065	£65,000	1.17%
L	£67,501 to £72,500	466	£70,000	0.51%
M	£72,501 to £77,500	538	£75,000	0.59%
N	£77,501 to £82,500	138	£80,000	0.15%
O	£82,501 to £87,500	12	£85,000	0.01%
P	£87,501 to £92,500	3	£90,000	0.00%
Q	£92,501 to £97,500	25	£95,000	0.03%

An approximate typical salary for a "Developer" IS worker was calculated using the formula:

(mA X jA) + (mB X jB) + (mC X jC) + (mD X jD) + (mE X jE) + (mF X jF) + (mG X jG) + (mH X jH) + (mI X jI) + (mJ X jJ) + (mK X jK) + (mL X jL) + (mM X jM) + (mN X jN) + (mO X jO) + (mP X jP) + (mQ X jQ)

where:

- m = the midway point within salary band
- j = percentage of jobs advertised within salary band
- A,B,C,D etc. = the Salary Band

This produced a figure of £40,970 from a sample size of 91,353 advertised jobs.

Part 3) IS "Specialist" Workers

IS Worker Jobs with 'Specialist' in the Job Title, differentiated by salary bands.

Table below provides an overview of the collected data.

Salary Band	Salary Range	Number of Jobs Advertised	Midway point of salary range (m)	%'age of "Specialist" jobs in Salary Band (rounded to 2 decimal points) (j)
A	£12,501 to £17,500	0	£15,000	0.00%
B	£17,501 to £22,500	7	£20,000	0.16%
C	£22,501 to £27,500	10	£25,000	0.24%
D	£27,501 to £32,500	364	£30,000	8.57%
E	£32,501 to £37,500	494	£35,000	11.63%
F	£37,501 to £42,500	2143	£40,000	50.47%
G	£42,501 to £47,500	507	£45,000	11.94%
H	£47,501 to £52,500	367	£50,000	8.64%
I	£52,501 to £57,500	223	£55,000	5.25%
J	£57,501 to £62,500	67	£60,000	1.58%
K	£62,501 to £67,500	21	£65,000	0.49%
L	£67,501 to £72,500	13	£70,000	0.31%
M	£72,501 to £77,500	12	£75,000	0.28%
N	£77,501 to £82,500	18	£80,000	0.42%

An approximate typical salary for a "Specialist" IS worker was calculated using the formula:

(mA X jA) + (mB X jB) + (mC X jC) + (mD X jD) + (mE X jE) + (mF X jF) + (mG X jG) + (mH X jH) + (mI X jI) + (mJ X jJ) + (mK X jK) + (mL X jL) + (mM X jM) + (mN X jN)

where:

- m = the midway point within salary band
- j = percentage of jobs advertised within salary band
- A,B,C,D etc. = the Salary Band

This produced a figure of £41,540 from a sample size of 4,246 advertised jobs.

Part 4) IS "Manager" Workers

IS Worker Jobs with 'Manager' in the Job Title, differentiated by salary bands.

Table below provides an overview of the collected data.

Salary Band	Salary Range	Number of Jobs Advertised	Midway point of salary range (m)	%'age of "Manager" jobs in Salary Band (rounded to 2 decimal points) (j)
A	£12,501 to £17,500	0	£15,000	0.00%
B	£17,501 to £22,500	0	£20,000	0.00%
C	£22,501 to £27,500	22	£25,000	0.06%
D	£27,501 to £32,500	367	£30,000	0.97%
E	£32,501 to £37,500	822	£35,000	2.18%
F	£37,501 to £42,500	2336	£40,000	6.20%
G	£42,501 to £47,500	3300	£45,000	8.76%
H	£47,501 to £52,500	8850	£50,000	23.50%
I	£52,501 to £57,500	12911	£55,000	34.29%
J	£57,501 to £62,500	2875	£60,000	7.64%
K	£62,501 to £67,500	3007	£65,000	7.99%
L	£67,501 to £72,500	1106	£70,000	2.94%
M	£72,501 to £77,500	1770	£75,000	4.70%
N	£77,501 to £82,500	148	£80,000	0.39%
O	£82,501 to £87,500	82	£85,000	0.22%
P	£87,501 to £92,500	25	£90,000	0.07%
Q	£92,501 to £97,500	12	£95,000	0.03%
R	£97,501 to £102,500	6	£100,000	0.02%
S	£102,501 to £107,500	0	£105,000	0.00%
T	£107,501 to £112,500	0	£110,000	0.00%
U	£112,501 to £117,500	0	£115,000	0.00%
V	£117,501 to £122,500	14	£120,000	0.04%

An approximate typical salary for a "Specialist" IS worker was calculated using the formula:

(mA X jA) + (mB X jB) + (mC X jC) + (mD X jD) + (mE X jE) + (mF X jF) + (mG X jG) + (mH X jH) + (mI X jI) + (mJ X jJ) + (mK X jK) + (mL X jL) + (mM X jM) + (mN X jN) + (mO X jO) + (mP X jP) + (mQ X jQ) + (mR X jR) + (mS X jS) + (mT X jT) + (mU X jU) + (mV X jV))

where:

- m = the midway point within salary band

- j = percentage of jobs advertised within salary band
- A,B,C,D etc. = the Salary Band

This produced a figure of £54,740 from a sample size of 37,653 advertised jobs.

Part 5) IS "Help Desk" and "Service Desk" "1st Line" Operational Workers

For the analysis within parts 5 and 6 of this appendix three searches were carried out: firstly on "Help Desk", secondly on "Service Desk" and thirdly on "1st Line".

The results were filtered to separate out those roles that had a leadership element to them (i.e. supervisor, team leader and manager). Thus Part 5 shows data relating to jobs that did not have a management angle to them and Part 6 shows data relating to jobs that did.

Table below provides an overview of the collected data for operational workers.

Salary Band	Salary Range	Number of Jobs Advertised	Midway point of salary range (m)	%'age of "Support" jobs in Salary Band (rounded to 2 decimal points) (j)
A	£12,501 to £17,500	14	£15,000	0.11
B	£17,501 to £22,500	1343	£20,000	13.97
C	£22,501 to £27,500	550	£25,000	7.15
D	£27,501 to £32,500	16	£30,000	0.25

An approximate typical salary for a "Help Desk" or "Service Desk" or "1st Line" IS worker was calculated using the formula:

(mA X jA) + (mB X jB) + (mC X jC) + (mD X jD)

where:

- m = the midway point within salary band
- j = percentage of jobs advertised within salary band
- A,B,C,D etc. = the Salary Band

This produced a figure of £21,480 from a sample size of 1,923 advertised jobs.

Part 6) IS "Help Desk" or "Service Desk" or "1st Line" Managers, Supervisors and Team Leaders

Table below provides an overview of the collected data for those jobs where the job title has either ("Help Desk" or "Service Desk" or "1st Line") and ("Supervisor", "Manager" or "Team Leader").

Salary Band	Salary Range	Number of Jobs Advertised	Midway point of salary range (m)	%'age of "Support" jobs in Salary Band (rounded to 2 decimal points) (j)
A	£12,501 to £17,500	0	£15,000	0.00%
B	£17,501 to £22,500	0	£20,000	0.00%
C	£22,501 to £27,500	0	£25,000	0.00%
D	£27,501 to £32,500	85	£30,000	32.95%
E	£32,501 to £37,500	68	£35,000	26.36%
F	£37,501 to £42,500	105	£40,000	40.70%

An approximate typical salary for a "Help Desk" or "Service Desk" or '1st Line' IS worker was calculated using the formula:

(mA X jA) + (mB X jB) + (mC X jC) + (mD X jD) + (mE X jE) + (mF X jF)

where:

- m = the midway point within salary band
- j = percentage of jobs advertised within salary band
- A,B,C,D etc. = the Salary Band

This produced a figure of £ 35,390 from a sample size of 258 advertised jobs.

Appendix H: Extract from Skills Framework for the Information Age

Reference: http://scripts.bcs.org/sfiaplus/levels/usup.htm#1
Accessed: 15th June, 2011

SFIAplus4 SFIA FOUNDATION MEMBER BCS The Chartered Institute for IT Enabling the information society

Category/SubCategory	Skill
Service management	
Service operation	**Service desk and incident management (USUP)** The processing and coordination of appropriate and timely responses to incident reports, including channelling requests for help to appropriate functions for resolution, monitoring resolution activity, and keeping clients appraised of progress. **Level 1** Receives and handles requests for support following agreed procedures. Promptly allocates calls as appropriate. Maintains relevant records. **Level 2** Receives and handles requests for support following agreed procedures. Responds to common requests for support by providing information to enable problem resolution and promptly allocates unresolved calls as appropriate. Maintains records and advises relevant persons of actions taken. **Level 3** Receives and handles requests for support following agreed procedures. Responds to requests for support by providing information to enable problem resolution and promptly allocates unresolved calls as appropriate. Maintains records and advises relevant persons of actions taken. **Level 4** Ensures that incidents and requests are handled according to agreed procedures. Ensures that documentation of the supported components is available and in an appropriate form for those providing support. Creates and maintains support documentation. **Level 5** Ensures that the inventory of components to be supported is complete and current. Drafts and maintains policy, standards and procedures for the service desk. Schedules the work of service desk staff to meet agreed service levels.

Appendix I: Record of Incidents Observed

Type 1 Incidents

	Incident Details	Incident	Service Request	Technician	Team
1	SIMS Record cannot be edited as required	✓		Tina	SCES(1)
2	Pupil's data not showing in full within application	✓		Tina	SCES(1)
3	Request for email address permissions		✓	Tina	SCES(1)
4	Request for educational information		✓	Tina	SCES(1)
5	Error message received when user tries to whitelist website	✓		Adam	SCES(1)
6	Assessment Manager Application issue	✓		Adam	SCES(1)
7	Customer still waiting for specification	✓		Tina	SCES(1)
8	Request for guidance on how application works		✓	Tina	SCES(1)
9	Request for update on progress		✓	Sandra	SCES(1)
10	Logins required for pupils and teachers		✓	Sandra	SCES(1)
11	Cannot open Word Document	✓		Sandra	SCES(1)
12	Cannot book training course	✓		Sandra	SCES(1)
13	Governor needs access to EMBC application		✓	Sandra	SCES(1)
14	ICT Services website link on corporate intranet broken	✓		Adam	SCES(1)
15	Password notification request		✓	Jonathan	UKHS
16	Customer account extension request		✓	Jonathan	UKHS
17	Password request (customer had been overlooked)	✓		Jonathan	UKHS
18	CD Serial Number request (had not been provided with CD)	✓		Jonathan	UKHS
19	Re-routing of email with no subject line	✓		Navinda	UKHS
20	Customer account extension request with paperwork outstanding		✓	Navinda	UKHS
21	Account not working following internal transfer	✓		Navinda	UKHS
22	Customer cannot access required application	✓		Navinda	UKHS
23	Access request following change of team		✓	Roger	SCCS(1)
24	Application Server Crash	✓		Roger	SCCS(1)
25	Scan functionality not working	✓		Roger	SCCS(1)
26	Customer unable to access time recording application	✓		Roger	SCCS(1)
27	Print Request Stuck in Queue	✓		Asghar	STOS
28	Request for Information on how an application worked		✓	Asghar	STOS
29	Customer could not log in to required application/ Request for Password Reset		✓	Asghar	STOS
30	Customer locked out of account	✓		Asghar	STOS
31	Customer could not access required application	✓	✓	Asghar	STOS
32	Request to store diary data before deleting application		✓	Asghar	STOS
33	Scanner option on laptop not working	✓		Asghar	STOS
34	Application unavailable to User via Internet	✓		Asghar	STOS
35	Email Attachment not viewable	✓	✓	Asghar	STOS
36	Invoice inaccessible within Application	✓		Asghar	STOS

For Team Codes see Chapter 2 Table 2.6; (1) indicates first tier work within this team.

Type 2 Incidents

	Incident Details	Incident	Service Request	Technician	Team
1	Reinstall operating system and application to laptop before reallocating		✓	Charles	STOD
2	Monitor not displaying correctly	✓		Charles	STOD
3	Request to restore earlier version of file		✓	Charles	STOD
4	Request to upgrade version of application		✓	Charles	STOD
5	MS Office needs repairing	✓		Mohamed	STOD
6	HP Printer not working	✓		Mohamed	STOD
7	Faulty Blackberry	✓		Mohamed	STOD
8	Ricoh printer not working	✓		Mohamed	STOD
9	VIP Access Rights Request 1		✓	Roger	SCCS(2)
10	VIP Access Rights Request 2		✓	Roger	SCCS(2)
11	MS Word Running Slowly	✓		Roger	SCCS(2)
12	Printer not Working	✓		Roger	SCCS(2)
13	Windows functionality unavailable on Server	✓		Roger	SCCS(2)
14	Escalated Security Access Request		✓	Roger	SCCS(2)
15	Printer with intermittent problems	✓		Roger	SCCS(2)
16	Print Queue needs Clearing	✓		Gareth	SCES(2)
17	School Back up failed	✓		Gareth	SCES(2)
18	Info. Request about calendar sharing		✓	Gareth	SCES(2)
19	School unable to connect to exchange server	✓		Gareth	SCES(2)
20	Whiteboard software to be installed on all school machines		✓	Gareth	SCES(2)
21	Out of Remit Incident (Transfer of Incident to Other Team)	✓		Dick	SCCD
22	Known Error (No action to take)	✓		Dick	SCCD
23	Set up Blackberry Device		✓	Graham	SCCD
24	Transfer of Mobile Device Service Provider		✓	Stephen	SCCD
25	Customer Installation: Prepare Sign-off Sheet		✓	Stephen	SCCD
26	Install Label Printer and Applications		✓	Stephen	SCCD
27	Prepare new Blackberry Device		✓	Stephen	SCCD
28	Blackberry receiving multiple messages	✓		Stephen	SCCD
29	Contacts not transferred from one phone to another	✓		Stephen	SCCD
30	Request to change default printer		✓	Lauren	STOB
31	Customer has not been invoiced for order	✓		Lauren	STOB
32	Email service within business application not working	✓		Lauren	STOB
33	Invoice does not calculate cost correctly	✓		Lauren	STOB

For Team Codes see Chapter 2 Table 2.7; (2) indicates second tier work within this team.

Type 3 Incidents

	Incident Details	Incident	Service Request	Technician	Team
1	Removal of unlicensed application from Unix based services		✓	Mike	POY
2	Removal of unlicensed application from Windows based servers (incorporating update anti-virus software)		✓	John	POY
3	Anti-virus out of date	✓		John	POY
4	Server needs restarting	✓		John	POY
5	Low disk error on server	✓		John	POY
6	Unable to log on remotely to server	✓		John	POY
7	Low Disk Space on Server (incorporating unavailability of server's monitor)	✓		John	POY
8	Unavailability of Template via Intranet	✓		John	POY
9	Website is not streaming	✓		Lionel	SER
10	Request for Access to Specific Servers		✓	Lionel	SER
11	Request for outgoing emails to exclude a disclaimer notice		✓	Lionel	SER
12	Request to add IP Address to Parameter Settings		✓	Anthony	SER
13	Server is showing high temperature	✓		Anthony	SER
14	Server marked 'red' on monitoring report	✓		Anthony	SER
15	Request to 'white-list' a website for a specific user		✓	Anthony	SER
16	Request for IP Addresses to have rights removed		✓	Serge	SER
17	Request for details of IP Address rights		✓	Serge	SER
18	Customer locked out following changes made	✓		Anthony	SER
19	Customer emails returned unsent	✓		Serge	SER
20	Request for Access through firewall		✓	Serge	SER
21	Request to 'white-list' a website for a specific user		✓	Lionel	SER
22	Reseller and end user unable to access Internet	✓		Serge	SER

For Team Codes see Chapter 2 Table 2.8

Appendix J: Sample Incidents

Sample of Type 1 Incident

SCC – Education Services IT Service Desk, First Level, First Tier: Incident 5 as experienced by IT Service Support Worker (Adam) and interpreted from a shared life-world perspective (Schutz and Luckmann, 1974) by the researcher:

Step	Chronological Occurrence. IT Service Support Worker…	Type of Knowledge Form	Actual Knowledge Form	Theory: Context Bias of Actual Knowledge Form as Interpreted
1	Heard his phone ringing	Auditory Event	Phone ringing noise	Theoretical
2	Listened to caller as he provided details of the nature of the incident (error message when trying to access a catalogue on a webpage)	Auditory Event	Details of Incident from Customer's voice	Contextual
		Useful (low training requirement)	How to use hands free telephone equipment	Theoretical
3	Accessed Customer Record	Visual Virtual Object	Customer Record from ITSM tool's database	Contextual
		Useful (medium training requirement)	How to use ITSM tool	Balanced
4	Accessed School Record	Visual Virtual Object	School Record from ITSM tool's database	Contextual
5	Created Incident Record typing in details of incident (Netsweeper Issue – trying to get a catalogue from a website)	Visual Virtual Object	Incident Record on ITSM tool's database	Contextual
		Recipe (low judgement requirement)	How and when to create a new incident record	Contextual
6	Asked customer a question (Is it saying it is banned as a redirect?) and listened to reply	Recipe (medium judgement requirement)	What diagnostic question to ask	Balanced
		Auditory Event	Answer to specific question	Contextual
7	Accessed website that was being blocked via Internet explorer and located specific web page	Visual Auditory Event	Details of Web page (by phone from customer whilst looking at the screen)	Contextual
		Visual Virtual Object	Specific Web page	Theoretical
		Useful (low training requirement)	How to use Internet Explorer	Theoretical
8	Gave advice to customer on how to whitelist the specific page	Recipe (medium judgement requirement)	How to whitelist a specific website	Balanced
		Recipe (medium judgement requirement)	How to stop an error message being presented to a customer	Balanced

This sample incident was recorded onto a data analysis sheet to show its deconstruction into the Schutz-inspired knowledge forms.

(N.B. T=Theoretical-bias; B=Balanced; C=Contextual-bias.)

Organization	Team	Reference (or All)	Incident/Service Request: Description
Shire County Council	Education Service Desk (Type 1)	CCEDSD05	Incident: Error message received when user tries to whitelist website

Cerebral (Habitual)								Sensory							
Useful				Recipe				Events				Objects			
High Training Reqt.	T	B	C	High Judgment Reqt.	T	B	C	Auditory [A]	T	B	C	Visual (Virtual) [VV]	T	B	C
								Phone ringing	✓			Specific web pages	✓		
								Details of nature of incident (by phone from customer)			✓	Customer Record			✓
								Answer to specific question asked of customer (by phone from customer)			✓	School Record			✓
												Incident Record			✓

Useful				Recipe				Events				Objects			
Medium Training Reqt.	T	B	C	Medium Judgment Reqt.	T	B	C	Visual-Auditory [VA]	T	B	C	Visual-Tactile [VT]	T	B	C
How to use ITSM tool		✓		How to whitelist a specific website		✓		Details of web page relating to incident (by phone from customer whilst looking at screen)			✓				
				How to stop customer getting specific error messages		✓									
				What diagnostic question to ask		✓									

Useful				Recipe				Events				Objects			
Low Training Reqt.	T	B	C	Low Judgment Reqt.	T	B	C	Visual (Virtual) [VV]	T	B	C	Visual (Physical) [VP]	T	B	C
How to use hands free telephone equipment	✓			How and when to create new incident			✓	Error message		✓					
How to use Internet Explorer	✓														

Sample of Type 2 Incident

SCC – Corporate Services IT Service Desk, First Level, Second Tier: Incidents 4 and 5 as experienced by IT Service Support Worker (Roger) and interpreted from a shared life-world perspective (Schutz and Luckmann, 1974) by the researcher.

Step	Chronological Occurrence. IT Service Support Worker…	Type of Knowledge Form	Actual Knowledge Form	Theory: Context Bias of Actual Knowledge Form as Interpreted
1	Selected and reviewed an incident record from the ITSM tool	Visual virtual object	Incident record	Contextual
		Useful (medium training requirements)	How to use ITSM tool	Balanced
2	Read the description that the printer was not working and commented (to the researcher) 'I'm not sure there is anything I can do about that'	Recipe (medium judgement requirement)	What might cause a printer failure	Theoretical
3	Used remote access application to log in	Useful (low training requirement)	How to use remote access application	Balanced

	directly to a specific server	Recipe (low training requirement)	What server printer will be assigned to	Contextual
4	Noted that there were problems related to the Windows functionality available (see step 12)	Visual virtual event	Non-availability of standard Windows functionality	Theoretical
		Visual virtual object	Windows screen showing specific functionality	theoretical
5	Identified specific printer from a list of printers and noted that it had not been working for a few months	Visual virtual object	List of printers	Contextual
		Recipe (medium judgement requirement)	How to work around non-availability of standard Windows functionality	Theoretical
6	Deleted the outstanding print requests from the queue	Visual virtual event	Print requests deleted notification	Theoretical
		Visual virtual object	Printer queue	Contextual
		Recipe (low judgement requirement)	How to delete print request	Theoretical
7	Access the printer properties within Windows and went to the ports tab	Visual virtual object	properties of specific printer	Contextual
		Recipe (low judgement requirement)	When and how to view printer properties	Theoretical
8	Used a Windows run command: cmd.exe ping 10.34.125.4	Visual virtual object	Windows run command window and subsequent	Theoretical
		Recipe (medium judgement requirement)	How to test a printer's connectivity	Theoretical
9	Noted the request timed out (event) and commented to me that this suggests that the network card in the printer was faulty.	Visual virtual event	Connectivity request timeout failure message	theoretical
		Recipe (medium judgement requirement)	why a printer connectivity test might fail	theoretical
10	Added an action taken note to the incident record: 'passing to support and installation to take a look'	Recipe (low judgement requirement)	When to update an instant record and what information to provide	Contextual
11	Reassigned the incident to the third line support team	Recipe (low judgement requirement)	When and how to escalate an incident	Contextual
12	Raised a new incident having noticed some issues with the server, given the description thus: 'FD01-0707 missing functionality: I log onto this server, no run, no right click.	Recipe (low judgement requirement)	When and how to raise a new incident record	Contextual
13	Compared server on one screen with the Windows display on the other screen	Useful (high training requirement)*	How to administer computer systems using Windows operating systems	Theoretical
		Recipe (low judgement requirement)	What specific machine and server name to access	Contextual

14	Logged off of server and attempted to log back on the server as administrator using remote access and username and password, taking control of users machine	Visual virtual event	User acceptance of remote control request	Balanced
		Recipe (medium judgement requirement)	how to diagnose the extent of fault relating to non-availability of standard Windows functionality	Theoretical
		Recipe (low judgement requirement)	when to take remote control of users machine	Balanced
		Recipe (low judgement requirement)	When and how to logon as administrator	Theoretical
		Recipe (low judgement requirement)	What the admin username/password were	Theoretical
15	Computer beeped to indicate failed logon along with nonappearance of logon screen	Visual auditory	'Beep' sound at normal appearance of expected logon screen indicating incorrect password or username	Theoretical
16	Amended incident record to show category, subcategory and product type	Recipe (low judgement requirement)	When and how to update an incident record	Contextual
		Recipe (low judgement requirement)	What category and product type to allocate to incident	Contextual
17	Used Dameware HT utilities to see who was logged onto the server in question	Visual virtual object	List of users logged on to server	Contextual
		Useful (low training requirement)	how to use utility to see the users current access	Balanced
		Recipe (low judgement requirement)	What access rights will be typical for a specific user type of a specific server	Contextual
18	Successfully logged onto the server using remote access entering machine name/server name, username and password	visual virtual object	Windows screens confirming logon	Theoretical
		Recipe (low judgement requirement)	What's the username and password are	Contextual
19	Commented that 'it logs on a lot quicker as administrator'	Recipe (medium judgement requirement)	What approximate speed the server should log on at	Balanced
20	Tested the missing functionality	Visual virtual object	Windows screen showing specific functionality	Theoretical
21	Added a note to the incident record 'Everything works okay if I log on as administrator'	Recipe (low judgement requirement)	When and how to update an incident record	Contextual
22	Checked via Windows who had been given administrator rights to the server and noted that users had been relegated to power users with restricted access.	Visual virtual object	List of specific server's users and access rights	Contextual
		Recipe (low judgement requirement)	what access rights will be typical for a specific user type of a specific server	Contextual

This sample incident was recorded onto a data analysis sheet showing the Schutz-inspired knowledge forms as deconstructed

Organization	Team	Reference (or All)	Incident: Description
Shire County Council	Corporate Service Desk: 2nd Line Support	CCCSD04 and 05	04) Printer not working 05) Windows functionality unavailable on server

Cerebral (Habitual)									Sensory								
Useful				Recipe					Events				Objects				
High Training Reqt.	T	B	C	High Judgment Reqt.	T	B	C		Auditory [A]	T	B	C	Visual (Virtual) [VV]	T	B	C	
How to administer computer systems using Windows operating System	✓												Windows screen showing specific functionality (X3)	✓			
													Windows run command window and subsequents	✓			
													Remote access icon and subsequent		✓		
													Incident Record (X3)			✓	
													Properties of Specific Printer (X2)			✓	
													List of Printers			✓	
													Specific Printer Print Queue			✓	
													List of users logged on to Server			✓	
													List of Server users and their access rights			✓	
Useful				Recipe					Events				Objects				
Medium Training Reqt.	T	B	C	Medium Judgment Reqt.	T	B	C		Visual-Auditory [VA]	T	B	C	Visual-Tactile [VT]	T	B	C	
How to use ITSM tool		✓		What might cause a printer failure	✓				'Beep' sound and non-appearance of expected logging on screen – indicating incorrect username/password	✓							
				How to workaround non-availability of standard windows functionality	✓													
				How to test a printer's connectivity	✓												
				Why a printer connectivity test might fail	✓												
				How to diagnose the extent of fault relating to non-availability of standard windows functionality	✓												
				What speed a server should log on at		✓											
Useful				Recipe					Events				Objects				
Low Training Reqt.	T	B	C	Low Judgment Reqt.	T	B	C		Visual (Virtual) [VV]	T	B	C	Visual (Physical) [VP]	T	B	C	
How to use remote access application		✓		When and how to view properties of a printer	✓				Non-availability of standard windows functionality	✓							
How to use utility to see user's current access		✓		How to delete print requests from a printer queue	✓				Print requests deleted notification message	✓							
				When and how to log on to Windows as an administrator	✓				Connectivity request time out failure message	✓							
				When to take remote control of user's machine		✓			User acceptance of remote control request (watched without control)		✓						
				When to update an incident record and what information to provide			✓										
				What specific machine and server name to access given specific circumstances			✓										
				What server a printer will be assigned to			✓										
				When and how to escalate an incident			✓										
				When and how to raise a new incident record			✓										
				What the administrator username/ password are			✓										
				What category and product type to allocate to raised incident			✓										
				What access rights would be typical for specific user-type of a specific server			✓										

Sample Type 3 Incident

Poyet Systems: Incident 6 as experienced by IT Service Support Worker (John) and interpreted from a shared life-world perspective (Schutz and Luckmann, 1974) by the researcher.

Step	Chronological Occurrence. IT Service Support Worker…	Type of Knowledge Form	Actual Knowledge Form	Theory: Context Bias of Actual Knowledge Form
1	Accessed the server room	Visual Tactile Object	Security Key pad	Theoretical

	using the punchpad on the outside of the room.	Recipe (low judgement requirement)	What the PIN code for server room is	Contextual
2	Checked the server location map that was bluetacked to the wall on the inside for the location of the specific server (Shannon).	Visual Physical Object	Server location map	Theoretical
3	Walked to a specific server cabinet and unlocked it front and back.	Visual Tactile Object	Metal Key	Contextual
		Recipe (low judgement requirement)	Which key to use to unlock specific server cabinet	Contextual
4	Pulled out the monitor and keyboard and selected the Shannon server by pressing the button labelled Shannon.	Visual Tactile Object	Server Selection button (labelled)	Contextual
		Visual Tactile Object	Mechanism within server cabinet	Theoretical
		Recipe (low judgement requirement)	How to work server cabinet mechanism	Theoretical
5	Discovered he could not connect to the Server (nothing showed on the screen at all). He explained he expected this because he had not resolved a problem he had found yesterday.	Visual Virtual Event	Blank screen indicating non-connection of server	Theoretical
6	Walked to the back of the cabinet to examine the cabling.	Visual Tactile Object	Cabling	Theoretical
		Recipe (medium judgement requirement)	How to examine and connect cabling within server cabinet	Contextual
7	Left the server room and went to a specific set of drawers containing cabling in the room outside the server room.	Recipe (low judgement requirement)	Where to locate store of spare cabling	Contextual
8	Identified a specific cable that he considered suitable for the purpose.	Visual Tactile Object	Cabling	Theoretical
		Recipe (low judgement requirement)	What cabling to select for the task	Theoretical
9	Returned to the server room with the cable and connected the cable at the back of the cabinet.	Visual Tactile Object	Cabling	Theoretical
		Recipe (medium judgement requirement)	How to examine and connect cabling within server cabinet	Contextual
10	Walked to the front of the cabinet and noted that there was still nothing showing on the screen.	Visual Virtual Event	Blank screen indicating non-connection of server	Theoretical
11	Returned to back of the cabinet and moved a cable to a different location.	Recipe (medium judgement requirement)	What might cause non-connection to server	Theoretical
		Visual Tactile Object	Cabling	Theoretical
12	Went to the front of the	Visual Virtual Event	Non-blank screen indicating connection	Theoretical

	cabinet and noted that there was now a screen showing.		to server	
		Recipe (medium judgement requirement)	How to connect directly to server	Theoretical
13	Using Windows commands checked the total and available storage space of the servers.	Recipe (medium judgement requirement)	When and how to check storage space on server	Theoretical
		Useful (high training requirement)	How to administer servers running Windows	Theoretical
		Visual Virtual Object	Storage space of server	Contextual
14	Using Windows selected disk clean and watched as it freed up space on 1st drive.	Recipe (medium judgement requirement)	When and how to clean disk on server	Theoretical
		Visual Virtual Object	Disk clean application windows	Theoretical
		Visual Virtual Event	Disk clean completion indicator window	Theoretical
15	Using Windows selected disk clean and watched as it freed up space on 2nd drives.	Recipe (medium judgement requirement)	When and how to clean disk on server	Theoretical
		Visual Virtual Object	Disk clean application windows	Theoretical
		Visual Virtual Event	Disk clean completion indicator window	Theoretical

This sample incident was recorded onto a data analysis sheet showing the Schutz-inspired knowledge forms as deconstructed.

Organization	Team	Reference (or All)	Incident/Service Request: Description
Poyet	Service Support	PYSS06	Incident: Low Disk Space on Server

Cerebral (Habitual)								Sensory							
Useful				Recipe				Events				Objects			
High Training Reqt.	T	B	C	High Judgment Reqt.	T	B	C	Auditory [A]	T	B	C	Visual (Virtual) [VV]	T	B	C
How to administer Server within Windows Environment	✓											Disk clean application and subsequent (X2)	✓		
												Storage space of server			✓

Useful				Recipe				Events				Objects			
Medium Training Reqt.	T	B	C	Medium Judgment Reqt.	T	B	C	Visual-Auditory [VA]	T	B	C	Visual-Tactile [VT]	T	B	C
				How to examine and connect cabling within server cabinet (X2)	✓							Cabling (x3)	✓		
				When and how to clean disk on server (X2)	✓							Security Key pad	✓		
				What might cause non-connection to server	✓							Mechanism within server cabinet	✓		
				When and how to check and free up storage space of server	✓							Server selection button (labelled)			✓
				How to connect directly to server	✓							Metal (Physical) Key			✓

Useful				Recipe				Events				Objects			
Low Training Reqt.	T	B	C	Low Judgment Reqt.	T	B	C	Visual (Virtual) [VV]	T	B	C	Visual (Physical) [VP]	T	B	C
				How to work server cabinet mechanism	✓			Blank screen indicating non-connection to server (X2)	✓			Server location map (on wall)			✓
				What cabling to select for job		✓		Disk clean completion indicator window (X2)	✓						
				Which key to use to unlock specific server cabinet			✓	Non-blank screen indicating connection to server	✓						
				Where to locate store of spare cabling			✓								
				What the PIN code for server room is			✓								

Appendix K: Knowledge Deconstruction Patterns

1 – Sample Teams

To assist in analysis the deconstructed knowledge data, patterns of the knowledge forms used were created, bringing to the fore the quantitative dimension to this fundamentally qualitative/interpreted data. By way of example, the patterns for teams performing each of the three types of work are shown below.

Each diagram is divided up horizontally, such that knowledge that was interpreted as primarily theoretical (i.e. more generically technological in nature) is shown in the top third. Knowledge that was interpreted as primarily contextual (i.e. more specific to the organisation) is shown in the bottom third, and knowledge that is interpreted as being not particularly biased one way or the other is shown in the middle third.

The diagram is also divided up vertically. The central section of the diagram shows the cerebral forms of knowledge. 'Useful' knowledge is shown in the inner rectangle and is differentiated by a judgment as to the extent to which the worker will have needed training in order to acquire that knowledge. This judgement was made from a shared lifeworld perspective. For example, how to administer a Windows environment might require 'useful' knowledge learnt through extensive training and/or exposure to such problem-solving over time. This might be interpreted as useful knowledge with a high training requirement. How to use an ITSM tool might be interpreted as useful knowledge with a medium training requirement and how to use the 'hands-free telephone equipment' might be interpreted as useful knowledge with a low training requirement. Lower level 'recipe' knowledge which typically depends upon higher level 'useful' knowledge is shown outside of the inner rectangle and is differentiated by a similar interpretation as to the extent to which the worker will have needed to exact judgement in using that knowledge. For example, the identifiable piece of knowledge '*what might cause a machine to run slowly*' might be accorded a higher judgement rating than the piece of knowledge '*what servers relate to what customer'* which is more factual. Where the same knowledge is used on several occasions, this is indicated by the number in the shape. Otherwise each shape represents a single use of the knowledge form across all incidents observed.

The left hand section of the diagram shows the sensorially-experienced 'events' (as previously defined with reference to Schutz's definition). The right hand section of the diagram shows the sensorially-experience 'objects' (as previously defined with reference to Schutz's definition). The arrows indicate that the sensing of these events and objects trigger or interact with the cerebral experience (i.e. the use of 'habitual' knowledge) represented within the central section.

The following key is provided to assist in interpreting the diagrams.

Key:

Sensory Experience (Events and Objects)

- A — Auditory
- VA — Visual-Auditory
- VV — Visual (Virtual)
- VP — Visual (Physical)
- VT — Visual-Tactile

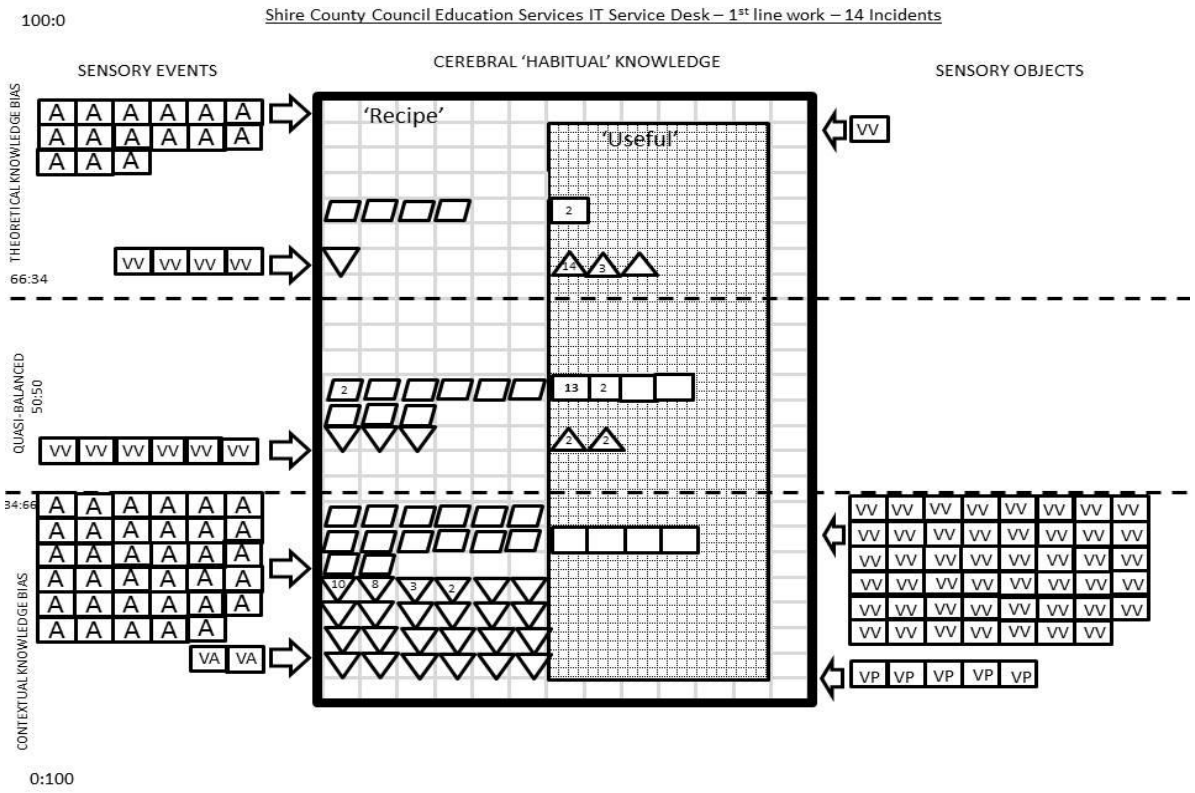
Each block represents **an** observed 'events' or 'objects'.

Cerebral 'Habitual' Knowledge

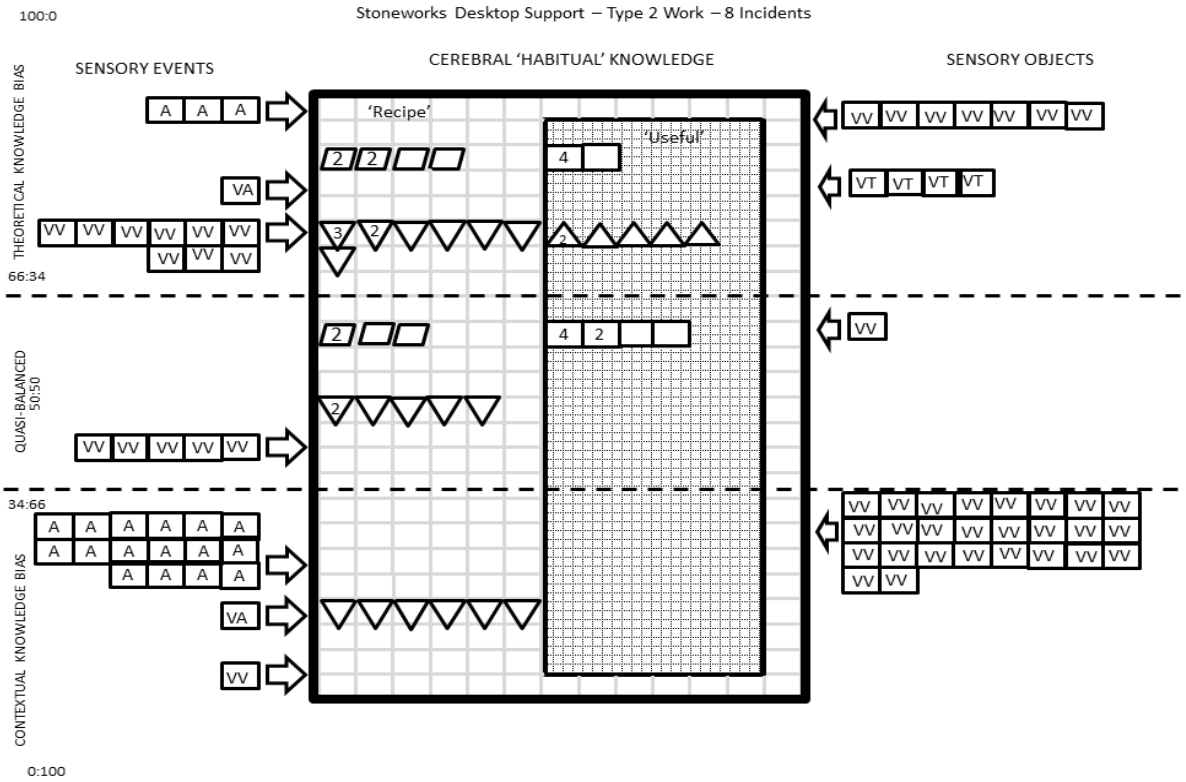
- 'Useful' Knowledge – High Training Requirement
- 'Useful' Knowledge – Medium Training Requirement
- 'Useful' Knowledge – Low Training Requirement
- 'Recipe' Knowledge – High Judgement Requirement
- 'Recipe' Knowledge – Medium Judgement Requirement
- 'Recipe' Knowledge – Low Judgement Requirement

Each shape represents **a** definable pieces of knowledge. Where a number is shown in the shape this indicates the number of occasions that the definable piece of knowledge was exercised during the periods of observation. For example, the workers were observed demonstrating the possession of the high-level 'useful' knowledge of 'how to use the ITSM tool' on 4 occasions and the low-level 'recipe' knowledge of 'how and where to locate printer drivers' on 3 occasions.

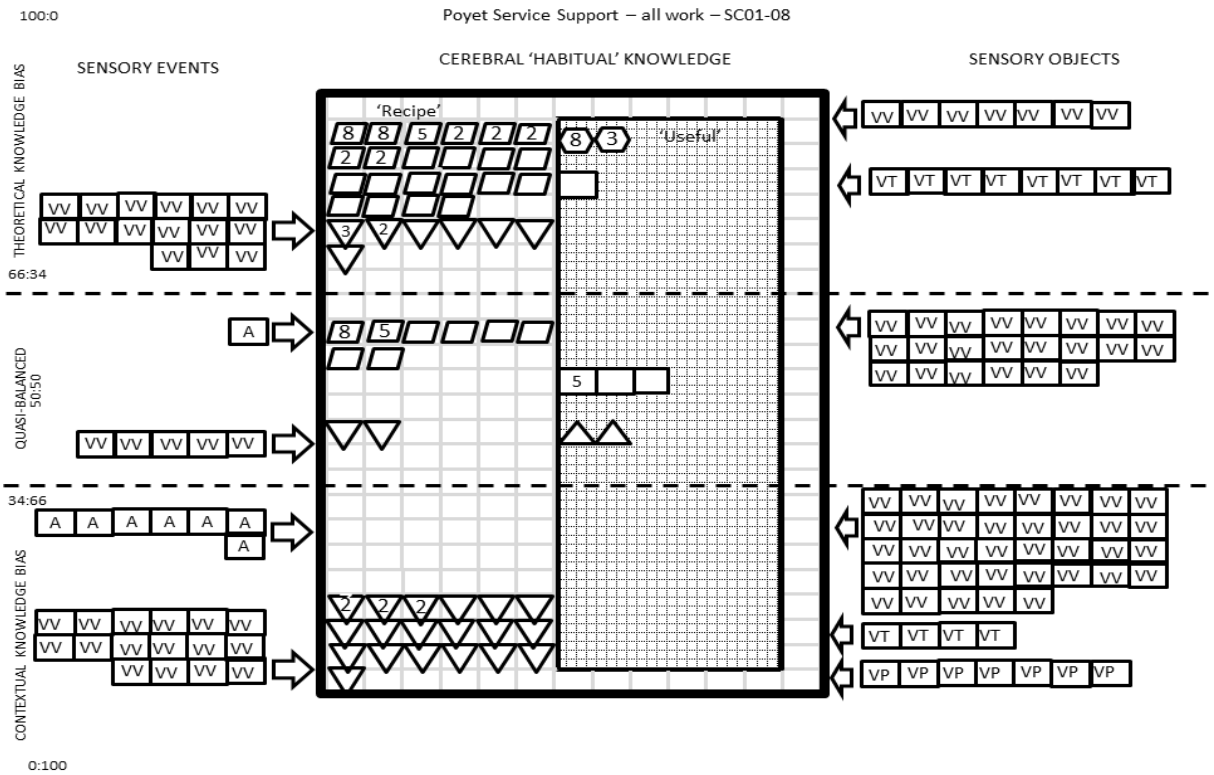
Type 1 Work: Team Example: SCC Education Services IT Service Desk – 1st line work



Type 2 Work: Team Example: Stoneworks Desktop Services Team



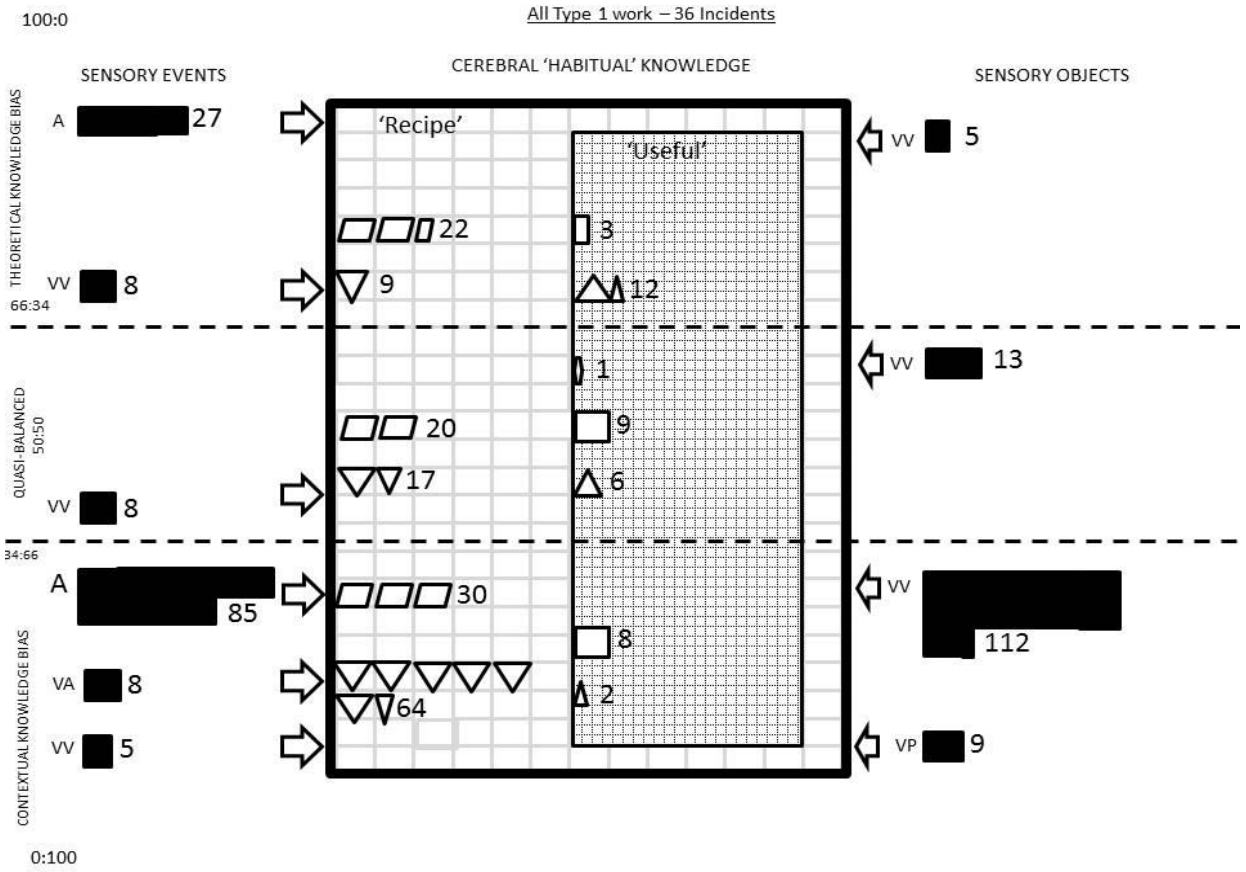
Type 3 Work: Team Example: Poyet Service Support



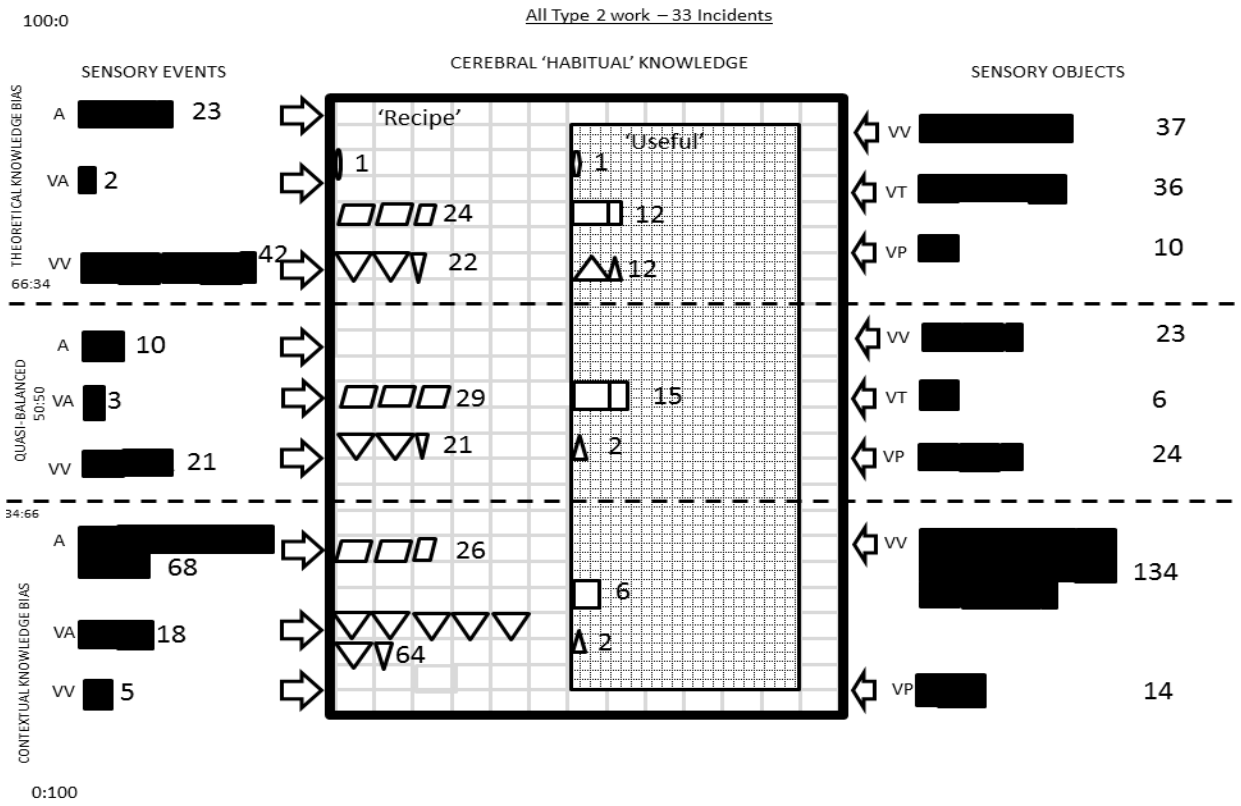
2 - Worker Type

Similar diagrams to those for each team were constructed that aggregated all the work carried out by each type of worker. To display this data it was necessary to recalibrate so that each full size shape represented 10 observed incidences.

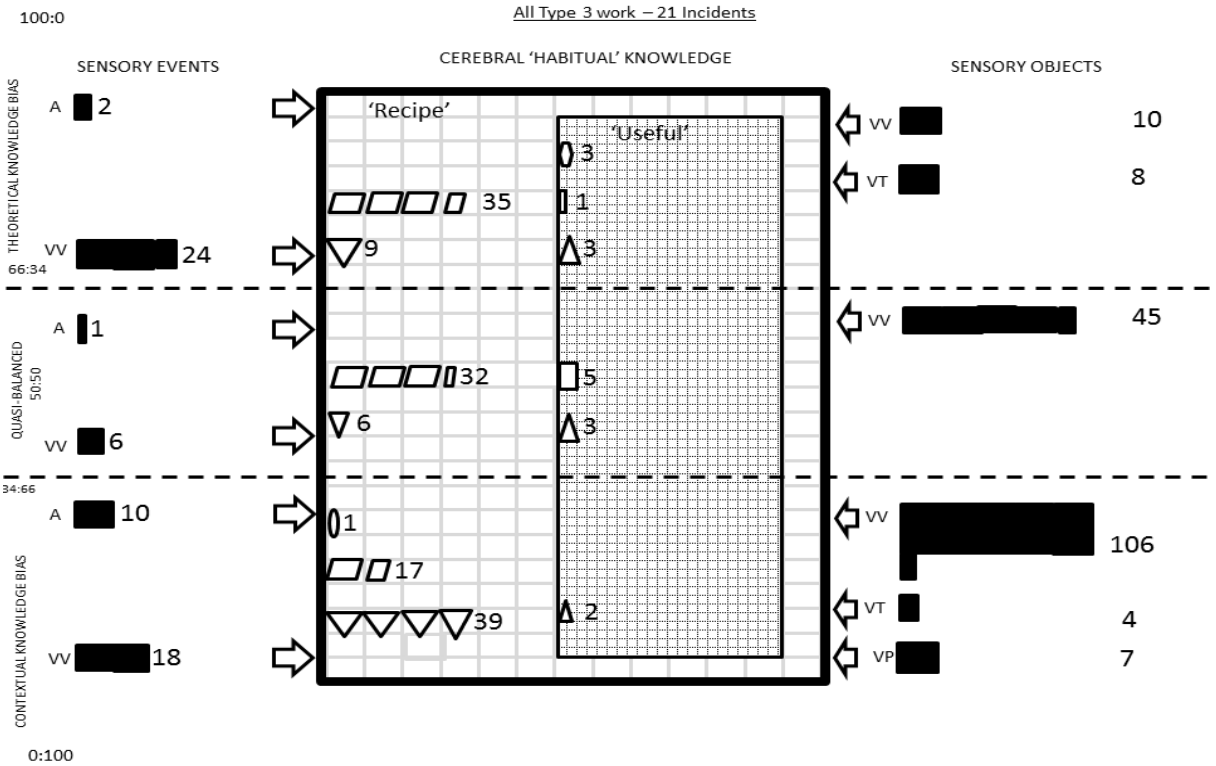
Type 1 Workers



Type 2 Workers



Type 3 Workers

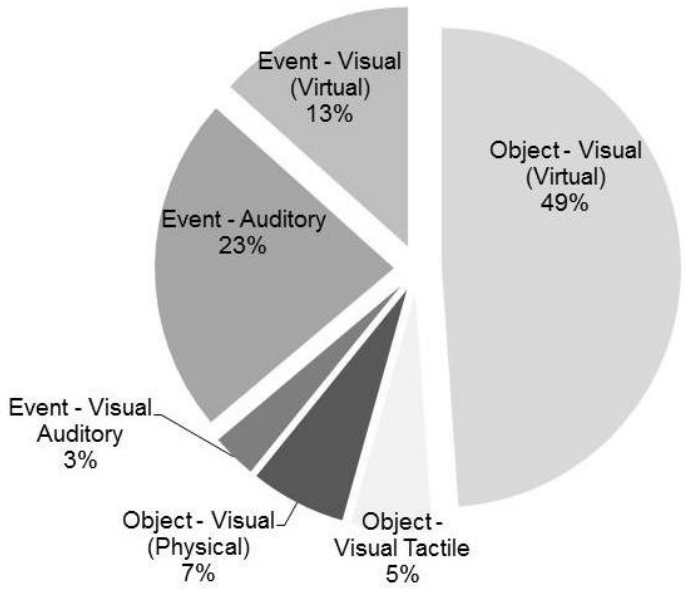


Appendix L: Sensory Use of IT Service Support Workers when Engaging with 'Events' and 'Objects'

The data in this appendix reveals a shared-life interpretation of the use of the primary human senses of hearing, sight and touch by workers encountering 'events' and 'objects' whilst carrying out their formal duties within the Incident Management process. Firstly, a table is presented, backed up by a pie chart, to show sensory use across all the incidents observed by all three types of IT service support worker. Secondly, tables are presented, backed up by pie charts, for each of the three types of IT service support worker.

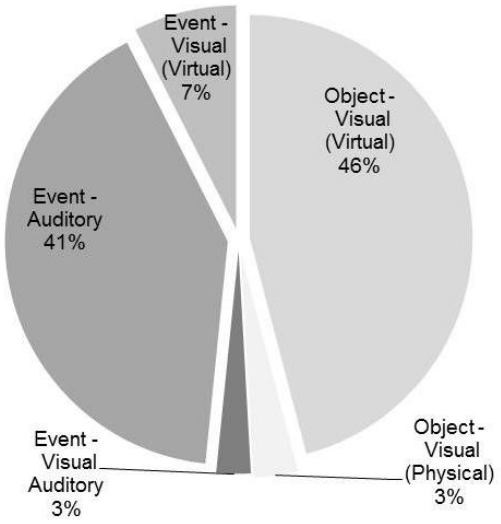
All IT Service Support Work:

Sensory Use	All Type 1		All Type 2		All Type 3		All Work	
	Occ*	%	Occ*	%	Occ*	%	Occ*	%
Object - Visual (Virtual)	129	46	193	41	161	68	483	49
Object - Visual Tactile	0	0	42	9	12	5	54	5
Object - Visual (Physical)	9	3	48	10	7	3	64	7
Event - Visual Auditory	7	3	23	5	0	0	30	3
Event - Auditory	115	41	97	21	13	6	225	23
Event - Visual (Virtual)	21	7	68	14	43	18	132	13
								Occ* = Occurrences



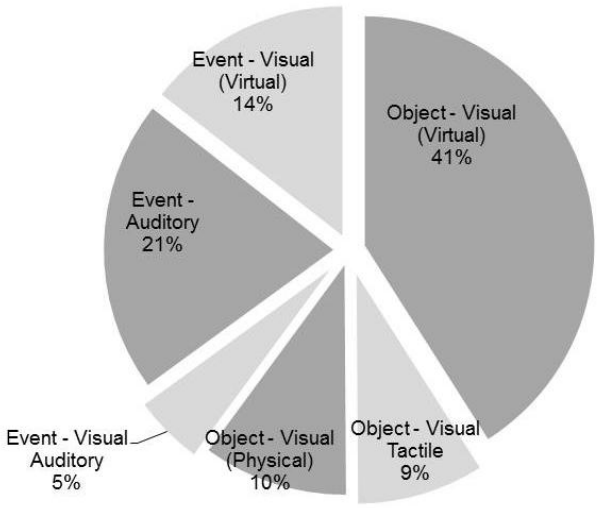
Type 1 Workers:

Sensory Use	SCC Education Service Desk		SCC Corporate Service Desk		UKHEE Service Desk		Stoneworks Service Desk		All Type 1 work	
	Occ*	%	Occ*	%	Occ*	%	Occ*	%	Occ*	%
Object - Visual (Virtual)	48	42	31	49	26	67	24	37	129	46
Object - Visual Tactile	0	0	0	0	0	0	0	0	0	0
Object - Visual (Physical)	5	4	1	2	2	5	1	2	9	3
Event - Visual Auditory	2	2	5	8	0	0	0	0	7	3
Event - Auditory	50	43	22	35	10	26	33	52	115	41
Event - Visual (Virtual)	10	9	4	6	1	2	6	9	21	7
Occ* = Occurrences										



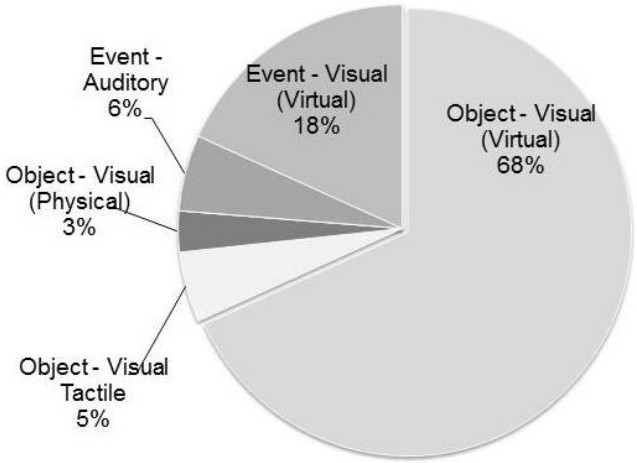
Type 2 Workers:

Sensory Use	SCC Education Service Desk (2nd Tier)		SCC Corporate Service Desk (2nd Tier)		SCC Corporate Services – Desktop Services		Stoneworks Desktop Support		Stoneworks Business Services		All Type 2 Work	
	Occ*	%	Occ*	%	Occ*	%	Occ*	%	Occ*	%	Occ	%
Object - Visual	32	37	57	70	55	28	33	45	16	46	193	41
Object - Visual Tactile	0	0	0	0	38	19	4	5	0	0	42	9
Object - Visual	7	8	1	1	40	21	0	0	0	0	48	10
Event - Visual Auditory	8	9	2	2	7	4	2	3	4	11	23	5
Event - Auditory	18	21	11	14	34	17	19	26	15	43	97	21
Event - Visual (Virtual)	22	25	10	12	21	11	15	21	0	0	68	14
Occ* = Occurrences												



Type 3 Workers:

Sensory Use	Poyet Systems IT Support Desk		Server Control Service Support		All Type 3 Work	
	Occ*	%	Occ*	%	Occ*	%
Object - Visual (Virtual)	67	54	94	85	161	68
Object - Visual Tactile	12	10	0	0	12	5
Object - Visual (Physical)	7	6	0	0	7	3
Event - Visual Auditory	0	0	0	0	0	0
Event - Auditory	8	6	5	5	13	6
Event - Visual (Virtual)	31	25	12	11	43	18
						Occ* = Occurrences



Appendix M: Theoretical Knowledge: Contextual Knowledge Balance: Use by IT Service Support Workers.

The extent to which IT service support workers engage with theoretical knowledge forms (i.e. those where similar knowledge might be encountered or used in a number of different organisations whilst doing similar work) and contextual knowledge forms (i.e. those that are predominantly organisationally-specific) was analysed using the collected data. The assignment of bias towards one form or the other is interpretative in that all knowledge forms might be considered to comprise of both a contextual and theoretical element. Where the knowledge form is considered to comprise of both contextual and theoretical elements in similar 'dosages' (i.e. by interpretation neither of the elements is interpreted as having at least a two thirds (66%) weighting), these are considered to not have a bias (i.e. balanced).

The workers' bias towards theoretical or contextual knowledge forms is considered using the Schutzian framework outlined in Chapter 2, separating 'events and objects' from 'useful knowledge' and 'recipe knowledge'. Given the interpretation of 'recipe' knowledge within this study as denoting fine-grained (and often creative) judgements made in the application of skills it is this knowledge form that is deemed to be of most interest when considering the IT service support worker as 'knowledge worker'. Given the connection made between, on the one hand, the synthesis of theory and context, and on the other, creativity (Frenkel *et al*, 1999 – see Chapter 2), the theoretical and contextual nature of this knowledge is considered to be of particular interest.

For the purposes of analysis, identified 'habitual-useful knowledge' entities were categorised into those that were interpreted as requiring a high degree of training (e.g. how to administer Windows environments to a highly competent level), those that required a medium level of training (e.g. how to use the ITSM tool for recording and retrieving data relating to incidents) and those that required a low level of training (e.g. how to use the hands-free telephone equipment). By way of acknowledging that these entities should not be equated, a weighting was applied to high and medium 'useful' knowledge. High level 'useful' knowledge was accorded a multiple of three and medium level 'useful' knowledge a multiple of two. Low level 'useful' knowledge was not multiplied. Whilst it is acknowledged that that this rather arbitrary weighting represents a weakness in data analysis, it does go some way to allay a possible criticism of inappropriate quantitative equating of data, and the consistent use of the weighting across the worker types does allow for a fair comparison to be made. Where the same cerebral 'useful' knowledge was used by a worker repeatedly (e.g. how to use the ITSM tool when working each incident) the multiple uses of this knowledge were not considered. This is so that the analysis reflected the cerebral knowledge held by the worker, thus enabling the interpretation to in some way reflect the extent to which workers use a variety of 'useful' knowledge in their work as opposed to repeatedly using the same 'useful' knowledge.

'Recipe' knowledge is that which enables the worker to recognise situations as having typical features and use related typical methods to bring about recognisably typical results (Schutz, 1964). It is conceived as partially overlapping with useful knowledge (Schutz and Luckmann, 1974) but has been interpreted in this research as referring to the fine-grained and sometimes creative application of 'useful knowledge' by a worker addressing specific questions posed within the task taking into consideration the contextuality (e.g. what might cause a specific model

of server to overheat?). Identified forms of recipe knowledge were categorised into those that were interpreted from a shared life-world perspective (Schutz and Luckmann, 1974) as requiring a high, medium or low level of judgment/creativity. As with the 'useful' knowledge forms, by way of acknowledging that these entities should not be equated, a weighting was applied to high and medium 'recipe' knowledge. High level 'recipe' knowledge was accorded a multiple of three and medium level 'recipe' knowledge a multiple of two and low level 'recipe' knowledge was not multiplied. Again this is acknowledged to be a somewhat arbitrary method of weighting, but is exercised consistently and thereby might provide a modicum of qualitative interpretation as input into a mechanism for quantitatively comparing between different worker types. Where the same cerebral 'recipe' knowledge was used by a worker repeatedly (e.g. who to escalate a specific type of incident to) the multiple uses of this knowledge were not considered. This is so that the analysis reflected the cerebral knowledge held by the worker.

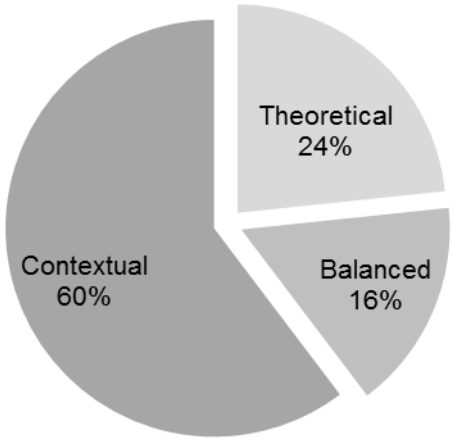
Whilst this method is not purely scientific it is contested that since the same method is used to ascertain something of the nature of all three types of IT service support work, it is considered to provide a fair indicative comparison between the types of IT service support work, and might provide some insight into the nature of IT service support work generally.

All IT Service Support Workers

'Events and Objects'

This data enable analysis of the extent to which workers are experiencing objects and events that are predominantly contextually (e.g. a predominantly contextual object might be a specific incident record, and a predominantly contextual event might be a colleague's auditory intervention with non-technical information that relates to a specific incident) and predominantly theoretical (e.g. a predominantly theoretical object might be a printer manual, and a predominantly theoretical events might be an application error message on a 'window' that necessitates the worker in taking action).

Sensory Use	**All Type 1 Work**		**All Type 2 Work**		**All Type 3 Work**		**All IT Service Support Work**	
	Occ	**%**	**Occ**	**%**	**Occ**	**%**	**Occ**	**%**
Theoretical	43	15	146	30	44	19	233	24
Balanced	21	8	94	20	48	20	163	16
Contextual	217	77	240	50	145	61	602	60
Occ = Occurrences Observed								



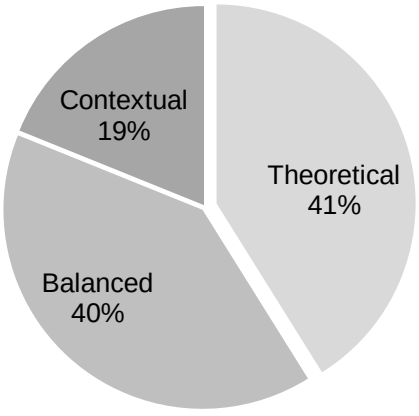
By allocating the percentage of 'balanced' knowledge equally to the contextual and theoretical percentages a ratio is arrived at of:

Contextual 68%: Theoretical 32%

The data therefore suggest that the objects and events encountered by IT service support workers whilst investigating and resolving incidents are a fusion of roughly two thirds contextual information/knowledge to one third theoretical information/knowledge.

'Useful' Knowledge Forms

Sensory Use	All Type 1 Work		All Type 2 Work		All Type 3 Work		All IT Service Support Work	
	WOO	%	WOO	%	WOO	%	WOO	%
Theoretical	19	30	41	47	14	48	74	41
Balanced	27	42	32	37	13	45	72	40
Contextual	18	28	14	16	2	5	34	19
WOO = Weighted Occurrences Observed								



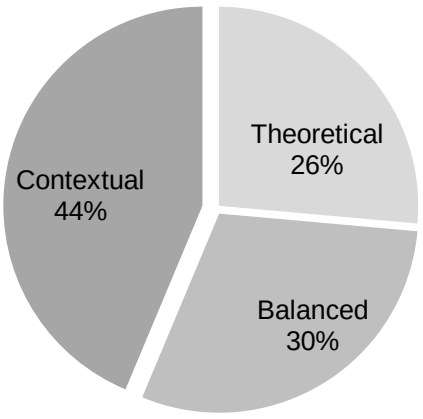
If the percentage of 'balanced' knowledge is allocated equally to the contextual and theoretical percentages this results in a ratio of:

Contextual 39%: Theoretical 61%

The data therefore suggest that the 'Useful' knowledge used by IT service support workers as a larger grouping whilst investigating and resolving incidents is a fusion of roughly three fifths theoretical knowledge to two fifths contextual knowledge.

'Recipe' Knowledge Forms

Sensory Use	All Type 1 Work		All Type 2 Work		All Type 3 Work		All IT Service Support Work	
	WOO	%	WOO	%	WOO	%	WOO	%
Theoretical	33	16	73	27	76	34	182	26
Balanced	57	29	79	30	70	32	206	30
Contextual	109	55	116	43	76	34	301	44
WOO = Weighted Occurrences Observed								



If the percentage of 'balanced' knowledge is allocated equally to the contextual and theoretical percentages this results in a ratio of:

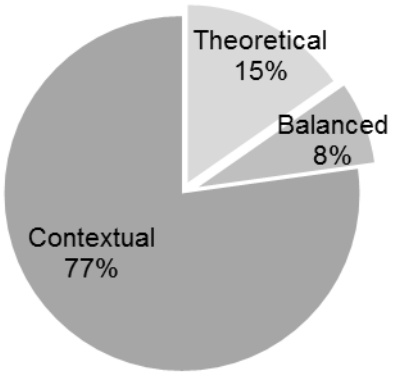
Contextual 59%: Theoretical 41%

The data therefore suggest that the 'Recipe' knowledge used by IT service support workers as a larger grouping whilst investigating and resolving incidents is a fusion or synthesis of roughly three fifths contextual knowledge to two fifths theoretical knowledge.

Type 1 Workers

'Events and Objects'

Knowledge Bias	SCC Education Service Desk		SCC Corporate Service Desk		UKHEE Service Desk		Stoneworks Service Desk		All Type 1 work	
	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%
Theoretical	20	17	7	11	3	8	13	20	43	15
Balanced	6	5	10	16	2	5	3	5	21	8
Contextual	89	78	46	73	34	87	48	75	217	77
										Occ = occurrences observed

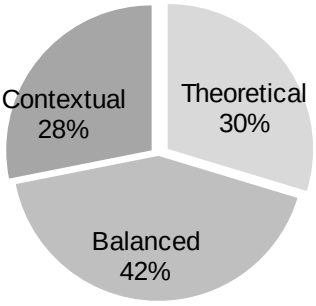


The 'knowledge' 'objects' and 'events' sensorially encountered at a given moment were observed and interpreted to be predominantly contextual, comprising entities such as incident records viewed on screen (objects) and customer responses to questions asked over the telephone (events). This appeared to be the case across all four teams observed. If the percentage of 'balanced' knowledge is equally allocated to the contextual and theoretical percentages, this results in a ratio of:

Contextual 81%: Theoretical 19%.

'Useful' Knowledge Forms

Knowledge Bias	SCC Education Service Desk (First Tier)		SCC Corporate Service Desk (First Tier)		UKHEE Service Desk		Stoneworks Service Desk		All Type 1 work	
	WOO	%	WOO	%	WOO	%	WOO	%	WOO	%
Theoretical	5	22	7	44	5	45	2	14	19	30
Balanced	10	43	4	25	6	55	7	50	27	42
Contextual	8	35	5	31	0	0	5	36	18	28
										WOO=weighted occurrences observed

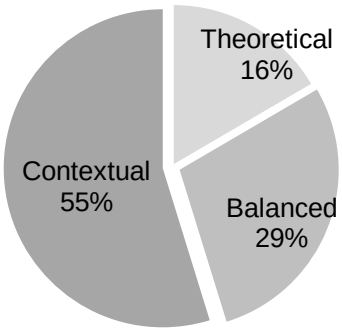


The interpreted data suggest there was an even balance between contextual and theoretical 'useful' knowledge used by the observed Type 1 workers. If the percentage of 'balanced' knowledge is equally allocated to the contextual and theoretical percentages, this results in a ratio of:

Contextual 49%: Theoretical 51%.

'Recipe' Knowledge Forms

Knowledge Bias	SCC Education Service Desk (First Tier)		SCC Corporate Service Desk (First Tier)		UKHEE Service Desk		Stoneworks Service Desk		All Type 1 work	
	WOO	%	WOO	%	WOO	%	WOO	%	WOO	%
Theoretical	9	11	5	15	2	6	17	34	33	16
Balanced	21	26	11	32	6	18	19	38	57	29
Contextual	51	63	18	53	26	76	14	28	109	55
WOO= weighted occurrences observed										



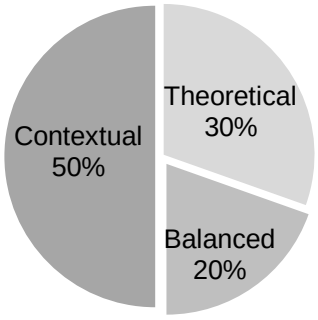
The interpreted data suggest the 'recipe' knowledge used by the observed Type 1 workers was predominantly contextual. If the percentage of 'balanced' knowledge is equally allocated to the contextual and theoretical percentages, this results in a ratio of:

Contextual 70%: Theoretical 30%.

Type 2 Workers

'Events and Objects'

Knowledge Bias	SCC Education Service Desk (2nd Tier)		SCC Corporate Service Desk (2nd Tier)		SCC Corporate Services – Desktop Services		Stoneworks Desktop Support		Stoneworks Business Services		All Type 2 Work	
	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%
Theoretical	25	29	11	14	82	40	24	32	4	11	146	30
Balanced	9	10	7	9	72	35	6	8	0	0	94	20
Contextual	53	61	63	78	49	24	44	59	31	89	240	50
Occ= occurrences observed												



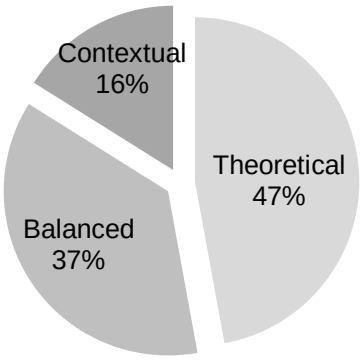
The data suggest that the objects and events encountered by Type 2 workers are likely to comprise a greater proportion of theoretical information/knowledge than those encountered by Type 1 workers. Nonetheless these objects and events tend to be largely contextual.

If the percentage of 'balanced' knowledge is allocated equally to the contextual and theoretical percentages this results in a ratio of:

Contextual 60%: Theoretical 40%

'Useful' Knowledge Forms

Knowledge Bias	SCC Education Service Desk (2nd Tier)		SCC Corporate Service Desk (2nd Tier)		SCC Corporate Services – Desktop Services		Stoneworks Desktop Support		Stoneworks Business Services		All Type 2 Work	
	WOO	%	WOO	%	WOO	%	WOO	%	WOO	%	WOO	%
Theoretical	5	38	5	33	22	73	9	53	0	0	41	47
Balanced	8	62	6	40	6	20	8	47	4	33	32	37
Contextual	0	0	4	27	2	7	0	0	8	67	14	16
WOO = weighted occurrences observed												



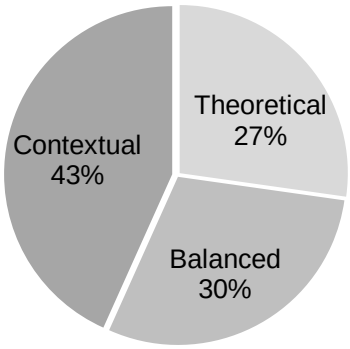
The interpreted data suggest that Type 2 workers use considerably more theoretical 'useful' knowledge, typically the product of extensive training and experiential learning. If the percentage of balanced knowledge is equally allocated to 'contextual' and 'theoretical' the ratio becomes:

Contextual: 35%: Theoretical 65%

Looking more closely at the detail reveals a more fragmented picture. Even though the work considered here that was carried out on the SCC Corporate Service Desk was not front-line work (i.e. type 1), because it was work that had been escalated by the Type 1 workers, the balance of 'useful' knowledge was akin to that of Type 1 workers. The workers on the two desktop support teams (at Stoneworks and SCC) routinely exercised predominantly theoretical knowledge (i.e. generic IT technical knowledge) and had little use of cerebral knowledge that related to how things operated within the business setting. This was in stark contrast to Stoneworks Business Services team with the data suggesting that even though their work was technical (in an IT sense), the cerebral knowledge that underpinned their operating effectively in their role was that that had been developed through deep exposure to the specific business of Stoneworks and the contextualised ERP application used within the business.

'Recipe' Knowledge Forms

Knowledge Bias	**SCC Education Service Desk (2nd Tier)**		**SCC Corporate Service Desk (2nd Tier)**		**SCC Corporate Services – Desktop Services**		**Stoneworks Desktop Support**		**Stoneworks Business Services**		**All Type 2 Work**	
	WOO	%	WOO	%	WOO	%	WOO	%	WOO	%	WOO	%
Theoretical	15	20	17	31	26	41	15	47	0	0	73	27
Balanced	29	39	20	37	17	27	11	34	2	4	79	30
Contextual	30	41	17	31	20	32	6	19	43	96	116	43
WOO = weighted occurrences observed												



The interpreted data show a marginal contextual bias in relation to 'recipe' knowledge. If the percentage of 'balanced' knowledge was equally allocated to 'contextual' and 'theoretical' the result is a ratio of:

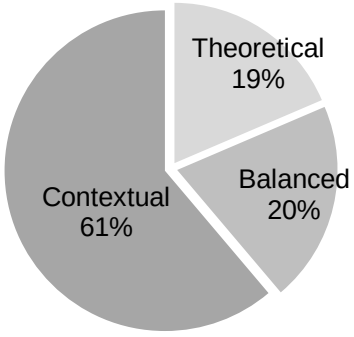
Contextual: 58%: Theoretical: 42%

As with the data relating to 'useful' knowledge the data collected from Stoneworks Business Services team, where the 'recipe' knowledge was interpreted as almost exclusively 'contextual', was in stark contrast to the other Type 2 teams. Indeed if this data were excluded then the ratio becomes Contextual 50%: Theoretical 50%.

Type 3 Workers

'Events and Objects'

Knowledge Bias	Poyet Systems IT Support Desk		Server Control Service Support		All Type 3 Work	
	Occ	%	Occ	%	Occ	%
Theoretical	30	24	14	13	44	19
Balanced	24	19	24	21	48	20
Contextual	71	57	74	66	145	61
						Occ= occurrences observed

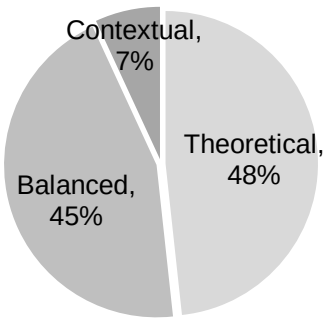


This data suggest that the objects and events encountered by Type 3 workers whilst investigating and resolving incidents are predominantly contextually. If the percentage of 'balanced' knowledge is allocated equally to the contextual and theoretical percentages this results in a ratio of:

Contextual 71%: Theoretical 29%

'Useful' Knowledge Forms

Knowledge Bias	Poyet Systems IT Support Desk		Server Control Service Support		All Type 3 Work	
	WOO	%	WOO	%	WOO	%
Theoretical	8	50	6	46	14	48
Balanced	8	50	5	38	13	45
Contextual	0	0	2	15	2	7
WOO= weighted occurrences observed						

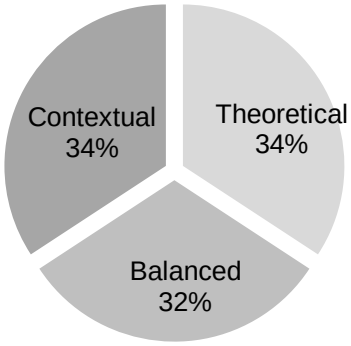


The interpreted data suggest that Type 3 workers' 'useful' knowledge is typically a fusion of the theoretical and the contextual but that it is the theoretical knowledge, typically the product of extensive training and experiential learning, that facilitates them such that they are able to set about tackling an incident. If the percentage of balanced knowledge is equally allocated to 'contextual' and 'theoretical' the ratio becomes:

Contextual: 29%: Theoretical 71%

‘Recipe’ Knowledge Forms

Knowledge Bias	Poyet Systems IT Support Desk		Server Control Service Support		All Type 3 Work	
	WOO	%	WOO	%	WOO	%
Theoretical	48	56	28	20	76	34
Balanced	18	21	52	38	70	32
Contextual	19	22	57	42	76	34
WOO= weighted occurrences observed						



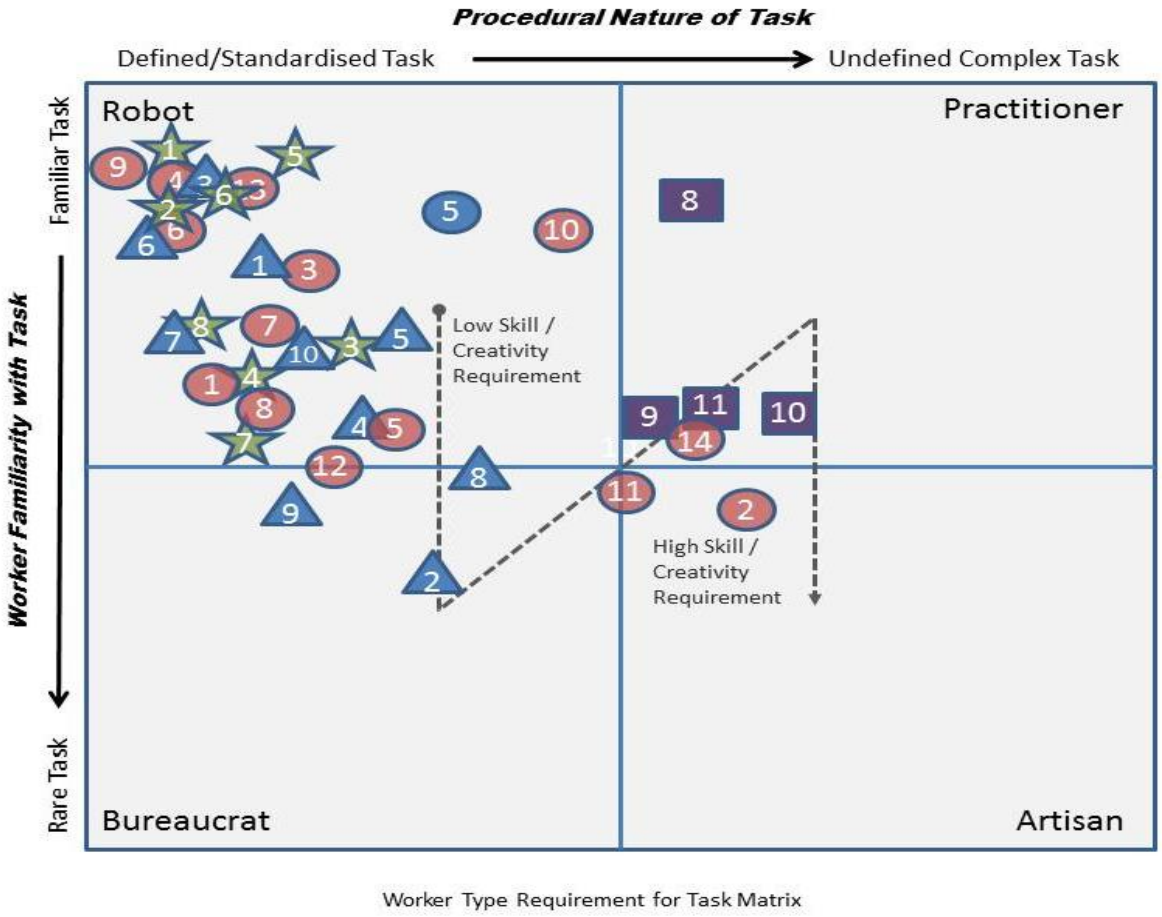
When considered as a whole, the data relating to Type 3 work suggest that contextual and theoretical knowledge are equally weighted within the synthesis of 'recipe' knowledge used. Across both teams, if the percentage of ‘balanced’ knowledge was equally allocated to ‘contextual’ and ‘theoretical’ the result is a ratio of:

Contextual: 50%: Theoretical: 50%

However on closer inspection the interpreted data show a contrast between the two teams observed. At Poyet the lower level knowledge used tended towards the theoretical, whereas at Server Control this ‘recipe’ knowledge tended to be either a fairly even fusion of theoretical and contextual or more heavily weighted towards being contextual, specifically knowledge about customers and their specific systems.

Appendix N: Skills/Creativity Requirements for Working Incidents Assigned to IT Service Support Workers

Type 1 Tasks Interpreted in Terms of Skill/Creativity Requirement:



Worker Type Requirement for Task Matrix

Key

n — Shire County Council Education Services IT Service Desk, First Line, First Tier

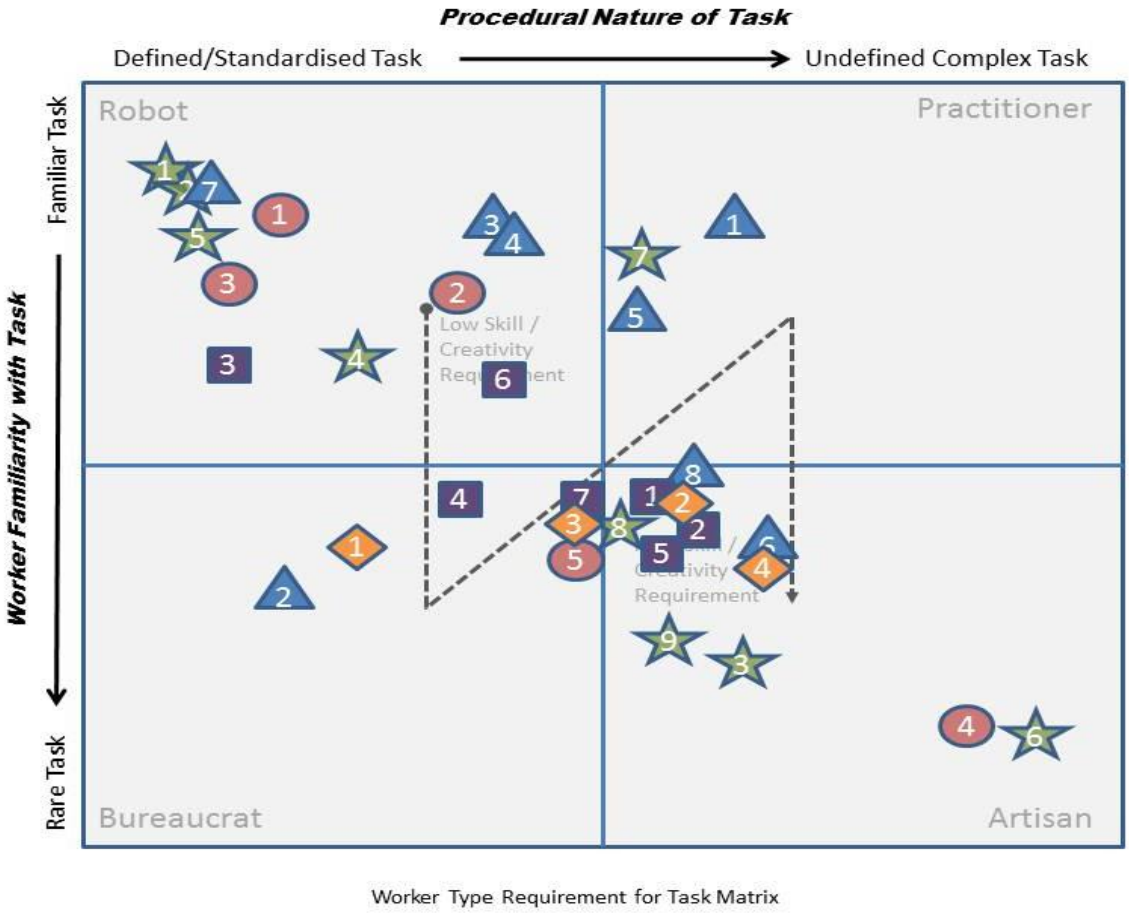
n — Shire County Council Corporate Services IT Service Desk, First Line, First Tier

n — UKHEE IT Service Desk

n — Stoneworks IT Service Desk

NB: n = Number given to the incident for purposes of analysis

Type 2 Tasks Interpreted in Terms of Skill/Creativity Requirement:



Worker Type Requirement for Task Matrix

Key

n Shire County Council Education Services IT Service Desk, First Line, Second Tier

n Shire County Council Corporate Services IT Service Desk, First Line, Second Tier

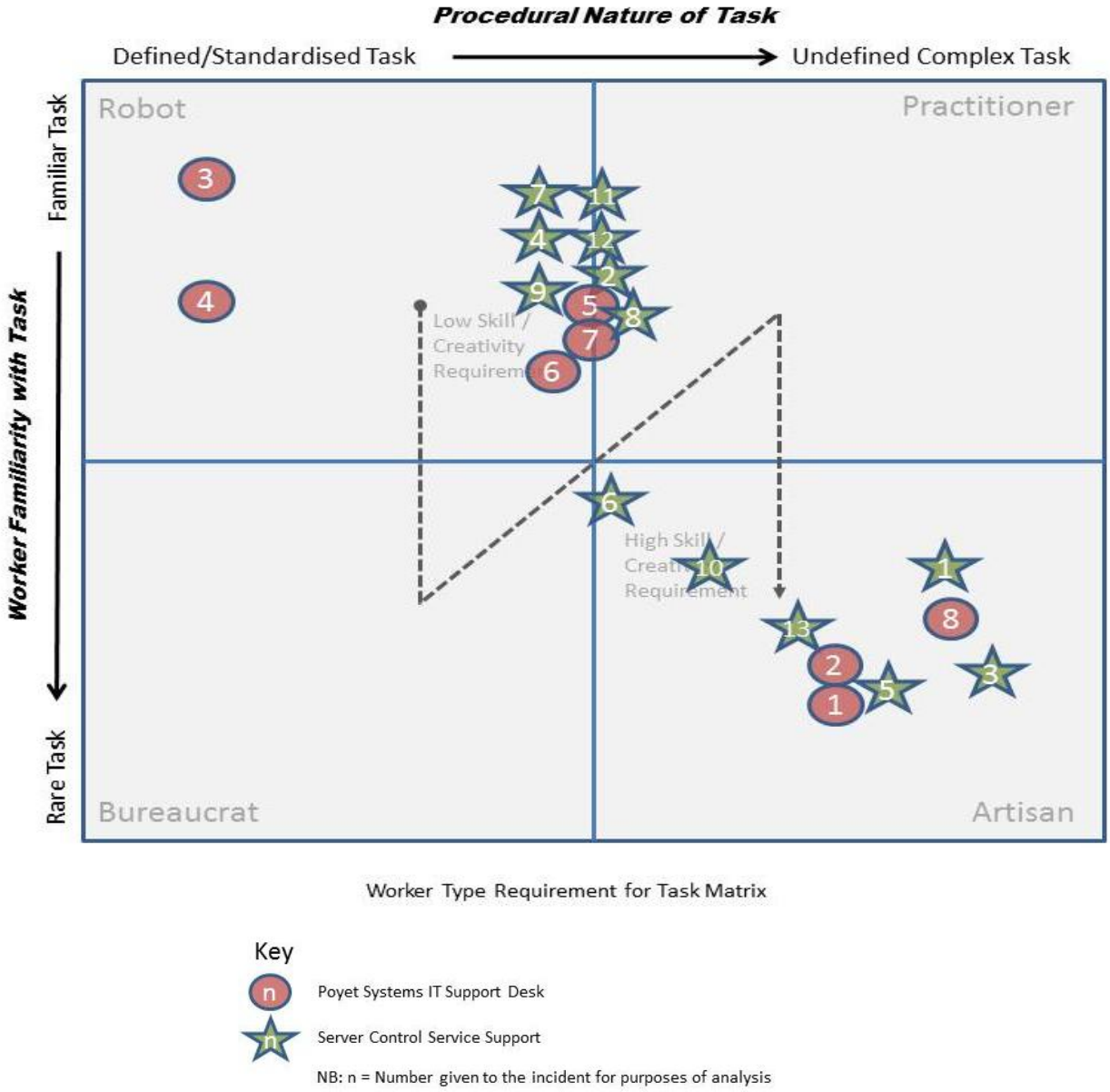
n Shire County Council Corporate Services Desktop Services

n Stoneworks Desktop Support

n Stoneworks Business Services

NB: n = Number given to the incident for purposes of analysis

Type 3 Tasks Interpreted in Terms of Skill/Creativity Requirement.



Appendix O: Count of References to Service Recipient during Interviews using ‘Human’ and ‘Commoditised’ Terms

			Service Recipients referred to using ‘human' terms				Service Recipients referred to using ‘commoditised' terms				
	Minutes of interview	Hours of interview	Number of References to Service Recipients as 'People' or 'Person'	Number of References to Service Recipients as 'Someone' or 'Somebody'	Total Number of References to Service Recipient(s) in 'human' terms	Number of Mentions per hour of service recipient in 'human' terms	Number of References to Service Recipients as 'Customer(s)'	Number of References to Service Recipients as 'Client(s)'	Number of References to Service Recipients as 'User(s)'	Total Number of References to Service Recipient(s) in 'commoditised' terms	No of Mentions per hour of service recipient in 'commoditised' terms
Type 1 Workers	295	4.92	37	16	53	10.8	12	3	13	28	5.7
Type 2 Workers	237	3.95	28	11	39	9.9	28	1	24	53	13.4
Type 3 Workers	222	3.70	24	2	26	7.0	98	3	0	101	27.3
All Workers	754	12.57	89	29	118	9.4	138	7	37	182	14.5

Appendix P: Team Level Analysis of Tensions between Service Provider Needs/Desires and Service Worker Needs/Desires

With reference to the analytical model introduced in Chapter 5, below are the radar diagrams that were prepared for each of the observed teams.

Type 1 Teams

Stoneworks Service Desk

The model representing the situation at Stoneworks (Figure i) reflects the tactics of management, who were particularly keen on implementing ITIL, and had designed the work to be intense (i.e. a highly productive time pressured environment) within a rationalised organisational structure. Thus, on the model, the tension is noticeably stretched towards the organisation orientation. It is suggested that there may be a relationship between this and the high staff turnover within the team.

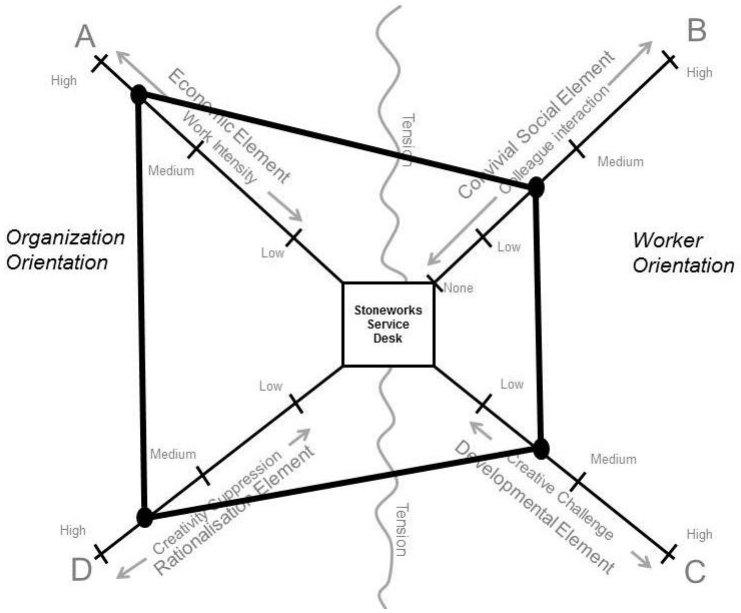


Figure i: Service Provider: Service Worker Tension: Stoneworks Service Desk

SCC Service Desks – Tier 1

The models representing the two service desks at SCC (Figures ii and iii) show a more even balance between the fulfilment of the needs/desires of the workers and organisation. It is suggested that the traditions and unionisation of the work at SCC may account for this greater balance.

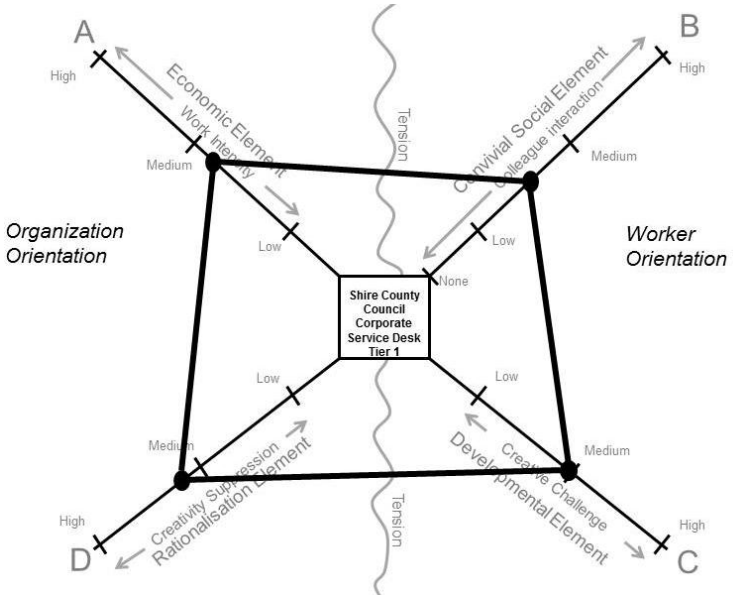


Figure ii: Service Provider: Service Worker Tension: SCC Corporate Service Desk Tier 1

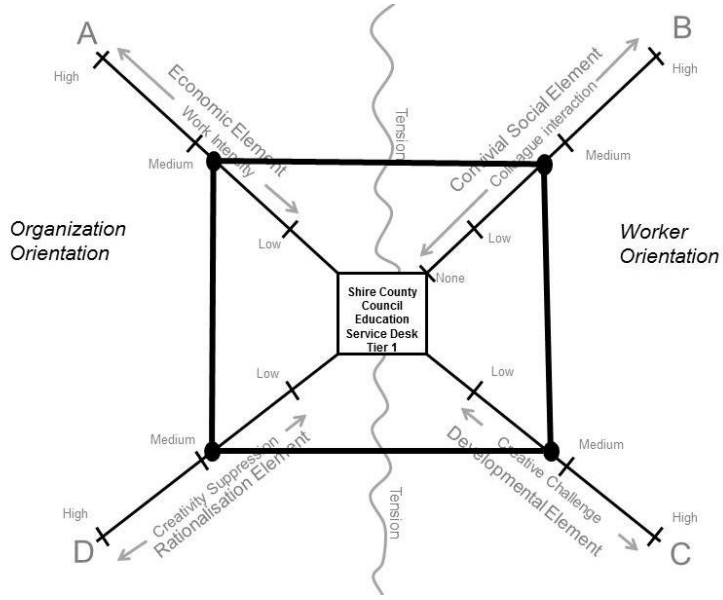


Figure iii: Service Provider: Service Worker Tension: SCC Education Service Desk Tier 1

UKHEE Service Desk

Figure iv illustrates that at UKHEE the hierarchical bureaucracy that had evolved appeared to impact upon the creative challenge of the service desk workers but that a convivial working environment prevailed, perhaps in part due to the lower level of work intensity at the time of observation, which was between academic terms.

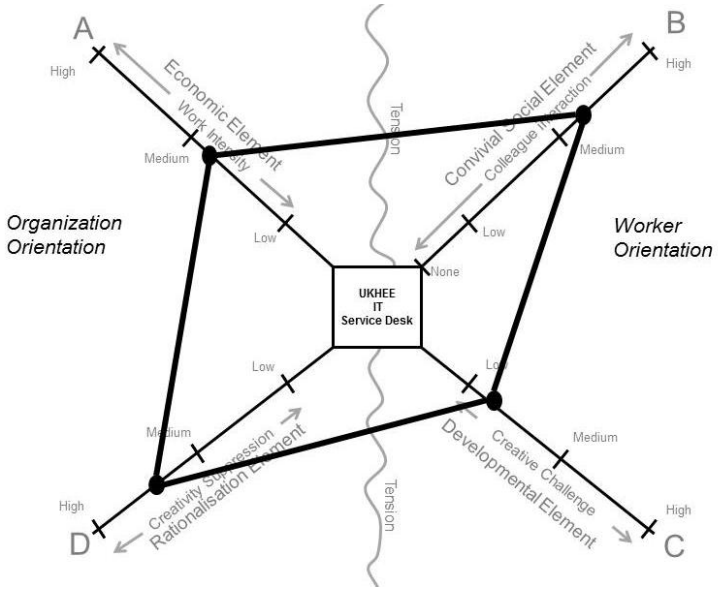


Figure iv: Service Provider: Service Worker Tension: UKHEE Service Desk

Type 2 Teams

SCC Service Desks – Tier/Level 2

The models for the second-tier work within the SCC service desks (Figures v and vi) show the work to be similar to the first-tier work in terms of its intensity and conviviality. However, it also reflects the greater opportunity for and lesser structural restriction placed upon working creatively.

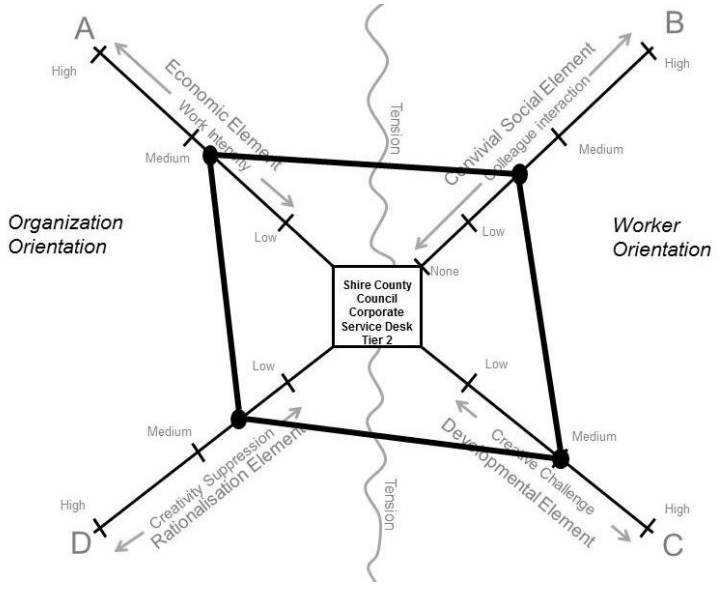


Figure v: Service Provider: Service Worker Tension: SCC Corporate Service Desk Tier 2

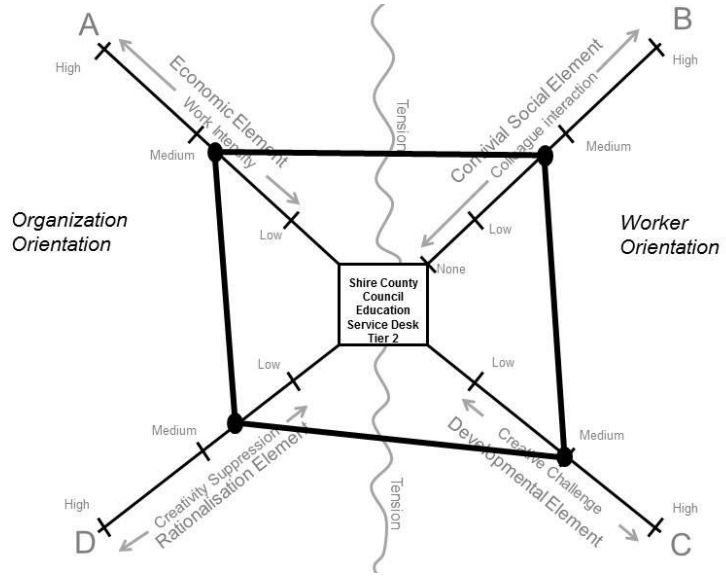


Figure vi: Service Provider: Service Worker Tension: SCC Education Service Desk Tier 2

SCC Corporate Desktop Services

The greater autonomy according to the SCC Corporate Desktop Services team is reflected in the model at vii. On the basis of the observation evidence, which revealed relatively low work intensity and constraints to creativity, this diagram shows the tension directed in favour of meeting the needs of the workers.

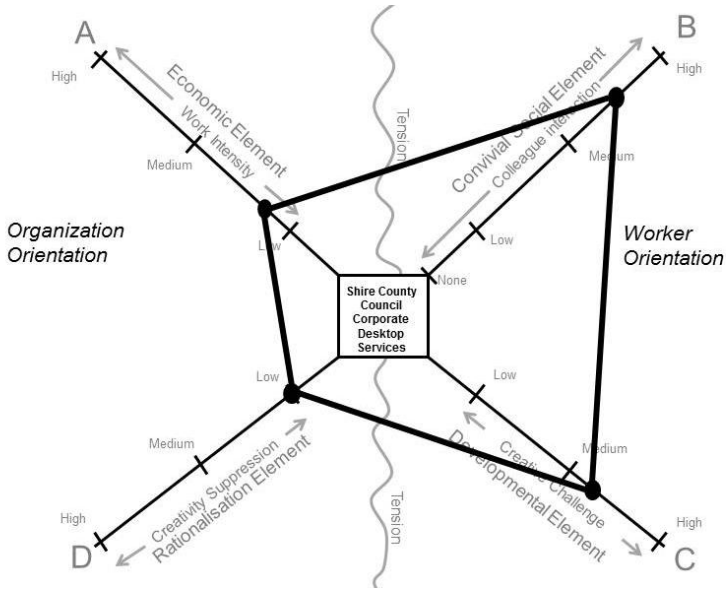


Figure vii: Service Provider: Service Worker Tension: SCC Corporate Desktop Services

Stoneworks Desktop Services

The equivalent team at Stoneworks enjoyed similar relatively high levels of creative challenge but were required to work more intensely by the demands placed upon them. It was observed that they constantly needed to be working on more than one incident at a time. This is reflected in Figure viii.

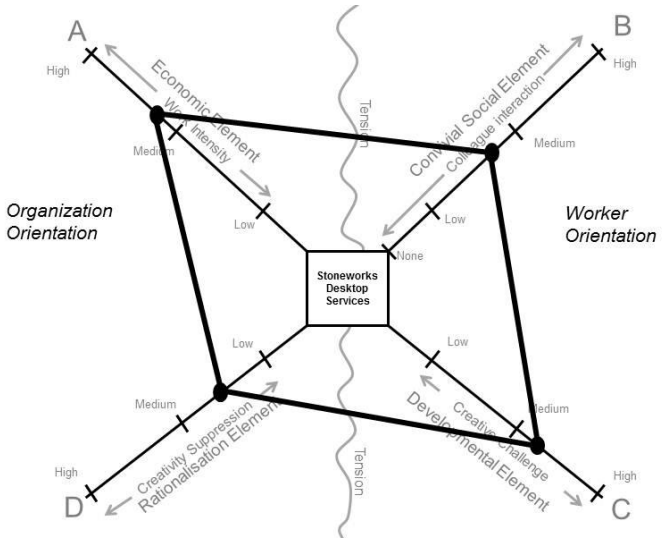


Figure viii: Service Provider: Service Worker Tension: Stoneworks Desktop Services

Stoneworks Business Services

The Stoneworks Business Services team were similarly high pressured in terms of meeting a heavy workload and had a similar opportunity to problem-solve creatively. However they worked more collaboratively than their colleagues on the Desktop Services team, and thus the model (Figure ix) shows the tension pulling more towards fulfilment of the workers' needs/desires whilst not negatively impacting upon the fulfilment of the organisational desire for the team to be highly productive.

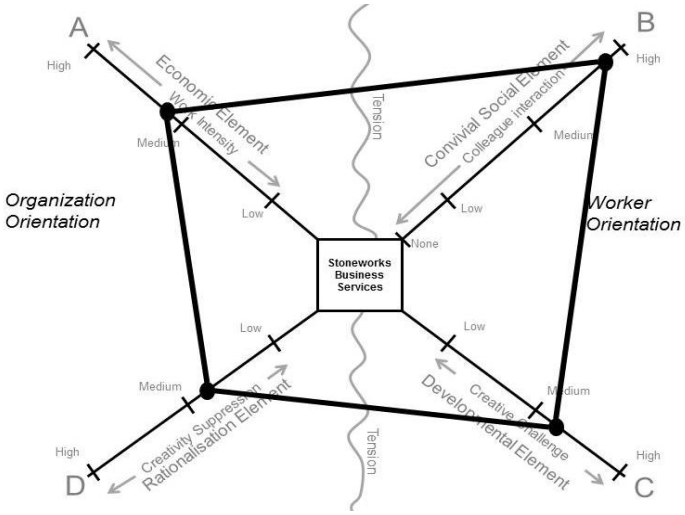


Figure ix: Service Provider: Service Worker Tension: Stoneworks Business Services

Type 3 Teams

Poyet IT Support Desk

Type 3 work at Poyet was characterised by an intensity resulting from a weakly-controlled 'fire-fighting' support service and low staff numbers. This is reflected on the model with the tension pulling towards the organisation along Spoke A. The tension alternatively pulls towards the worker in terms of the creative challenge offered by the broad variety of work that came the way of the workers within this team (Figure x).

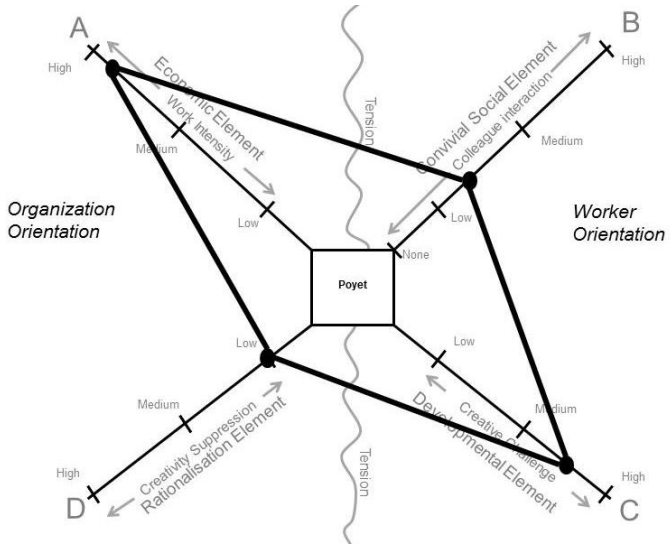


Figure x: Service Provider: Service Worker Tension: Poyet

Server Control Service Support

The model for Server Control (Figure xi) is similar in terms of (i) the busy-ness of the workers in customer-facing roles and (ii) the opportunity to engage in challenging specialist IT security work of some considerable complexity.

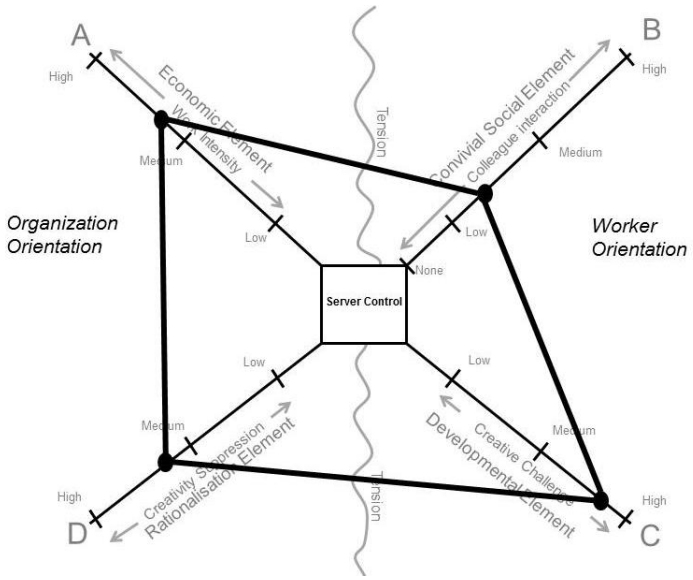


Figure xi: Service Provider: Service Worker Tension: Server Control

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