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# Examining the Linkage Between Technology Use, Emotional Expression and Service Quality Perceptions: The Data Collection Pool

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# EXAMINING THE LINKAGE BETWEEN TECHNOLOGY USE, EMOTIONAL EXPRESSION AND SERVICE QUALITY PERCEPTIONS:
# THE DATA COLLECTION PROTOCOL
# (RESEARCH-IN-PROGRESS)

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## Abstract

*Research-in-progress concerned with an investigation of the impact of service technologies on boundary-spanning personnel (BSP) and the implications for the interaction with the end customer is presented in this paper, with specific attention given to the development of the data collection protocol. The associated research project seeks to investigate the interplay between technology use, emotional expression and service quality perceptions in the context of a technology-mediated relationship. Specifically, the research investigates this linkage within a business to consumer (B2C) context where employees are using customer relationship management (CRM) technologies at the point of interaction with the customer in a voice-to-voice situation. The resulting data collection builds on previous studies with adaptations enabling a close investigation of the social forces at play in dyadic interactions centered on voice-to-voice interactions.*

*Keywords: technology-use, emotion, service quality, data collection*

# 1    INTRODUCTION

The research-in-progress outlined here relates to a study concerned with an investigation of the impact of service technologies primarily on boundary-spanning personnel (BSPs). Specifically, the study investigates the interplay between technology use, emotional expression and service quality perceptions. What kinds of opportunities and challenges do the use of service technologies present for? What is the resulting impact on the behaviours and emotions expressed in service interactions? Further, what are the possible implications for the customer's resulting experience of the service provided? The focus of this paper is on detailing the data collection protocol associated with this programme of work. Initially, the research context is outlined along with the associated research questions. The methodological trajectories that underpin previous research are briefly outlined with key examples given from theory concerning how similar constructs have been approached in previous field studies. Building on this foundation, the data collection protocol for an Interpretive study is detailed. It is intended that such a reflection will encourage a debate concerning the practicalities involved in the operationalisation and implementation of constructs in a multi-disciplinary, Interpretivist field study context.

# 2    RESEARCH CONTEXT & QUESTIONS

The use of technologies within organisations is having a profound impact (both positive and negative) on service provisioning and the service experience (Bitner & Brown & Meuter 2000, Bitner 2001). Considering the role of a BSP, the 'boundary-spanning' concept recognises that such personnel operate on the periphery of an organisation and therefore, any technology they may use to support them in their job tasks consequently supports interactions beyond the organisational boundary. Consequently, any positive or negative experiences of technology use by BSPs may ripple beyond the organisational boundary, resulting in both positive and negative impacts on the customer's experience of service (Heskett and Sasser and Schlesinger 1997). In the service marketing literature there has been a relatively recent call for further research into technology's impact on service (Parasuraman and Grewal 2000). This call extends further with the organisational behaviour literature recognising that technology heightens both the intensity levels and emotional experiences prevalent in dyadic interactions and as a consequence arguing that this phenomena warrants further investigation (Kasper-Fuehrer and Ashkanasy 2001). Also, the popular management literature promotes a change agenda in this area with the acknowledgement that business and technology strategies that permeate organisational boundaries often require an internal change at the behavioural level in order to have positive behavioural implications externally (Shaw and Ivens 2002).

It seems that a significant body of research is emerging that successfully investigates the linkage between behaviours and/or emotional expression and service provision in dyadic contexts (Price and Arnould and Diebler 1995, Pugh 2001, Mattila and Enz 2002). Further, field research, which investigates the impact of technology use on service provision, is also now burgeoning. However the consideration of the emotional implications *alongside* technology use implications in dyadic service contexts has to date not received attention in the literature.

In designing a research approach to tackle this gap in the literature, it has been necessary to adopt a multi-disciplinary approach (drawing on the literature in organisational behaviour, services marketing and information management) to both 'evidence' emotion in the interaction and develop an approach for linking this to technology use in order to develop a plausible interpretation of technology's impact on emotional expression. The approach is Interpretivist in nature and emphasises the importance of the context of the individual, the interaction and the organisation in developing a valid interpretation of the link between technology use, emotional expression and service quality perceptions. It is intended that a successful study in this area will contribute to closing the prevailing literature gap and

enable both academics and practitioners to gain a better understanding of technology's impact on this particular aspect of the e-society. This seems to be crucial as technology is becoming more pervasive in service contexts and the impacts of technology on emotions seem to have a potential impact beyond the organizational boundary with customer's perceptions (Pugh 2001).

The research phenomena will be investigated in a call centre context, where BSPs are interacting with customers largely on the telephone and where the use of the service technologies on the desktop are mandatory to BSPs' role. BSPs log and retrieve information to assist them in both developing customer profiling capabilities and delivering good customer service simultaneously. The organisation is a leading competitor in the Telecommunications industry and by nature both a high technology and high touch organisation.

A detailed outline of the theoretical justification and framework for the research has been documented previously (McCalla and Ezingeard and Money 2004). However, to establish the context for the discussion of the data collection protocol in this paper, the research questions are given below:

The high-level research question is concerned with understanding 'what is the interplay between technology-use, emotional expression and service quality perceptions?' Further,

- Does the use of mandatory CRM IS contribute to emotional labour pressures and if so how?
- Do aspects of mandatory CRM IS use give rise to both positive and negative emotions in BSPs and if so how?
- Is emotional contagion in the service encounter related to aspects of the mandatory CRM IS use and if so how?
- How do customers consider and perceive technology use by BSPs when assessing good and bad service experiences?

# 3    PREVIOUS METHODOLOGICAL TRAJECTORIES

In designing the data collection protocol for the investigation, previous research in the areas of technology use, emotions (labour, expression and contagion) and service quality was reviewed in order to ascertain the methods used in key studies. *Table 1* summarises the outcome of this review.

| Constructs | Method | Reference Examples |
|---|---|---|
| Technology use | - Survey – perception based scales<br>- Observation<br>- Interviews | (Davis 1986, Venkatesh and Morris 2003)<br>(Walsham 1993, Orlikowski 2000)<br>(Walsham 1993, Orlikowski 2000) |
| Emotional labour/expression/ contagion | - Structured Observation | (Hothschild 1983, Rafaeli and Sutton. 1987, Pugh 2001) |
| Service quality | - Survey – perception based scales | (Parasuraman and Zeithaml and Berry 1988, Parasuraman and Berry and Zeithaml 1991) |

*Table 1: Summary of constructs and previous methods used*

Whilst the **technology use** construct shows the use of survey, observation and interview methods, there has been a dominance of the survey method with the use of the technology acceptance model (TAM) (Davis 1986) and the more recent unified theory of technology acceptance (UTAM) (Venkatesh et al. 2003). The same is true of the **service quality** construct, where the SERVQUAL and derived scales have been deployed to the perceptions of customers. In both of these examples, the respective disciplines in these areas draw heavily on psychological factors important to individuals and the dominance of cognitive testing of perceptions is prevalent. This having been said, in the technology use theory, in recent years academics have recognised the value in taking a broader social view of the

end user (Lamb and Kling 2003) and have deployed more qualitative methods in analysing technology use (Walsham 1993, Orlikowski 2000).

The methods used to examine **emotional labour, emotional expression and emotional contagion** are somewhat contrasting to the previous discussion of the two research constructs. The emotional family of constructs whilst also heavily dominated by methods deployed in psychological research, also draws heavily on sociological theories of emotion. This is particular true of a consideration of emotion in service contexts, where there are social norms of behaviour at play which extend beyond the individual often being analysed. As a result, structured observation methods are often deployed alongside interviewing methods. A constraining issue is that the service contexts under investigation have to date been dominated by face-to-face interactions (Rafaeli and Sutton 1989; Pugh 2001; Mattila et al. 2002) and hence draw on sociological theories applicable to face to face situations (Goffman 1959).

In designing a data collection protocol that would enable an understanding of the dynamics between technology use, emotional expression and service quality perceptions in voice-to voice contexts, it became necessary to understand the sensitivities around observing the constructs. Whilst the investigation is concerned with the issues surrounding the use of service technologies, the central observation point is that of the interaction itself. Specifically, the aim is to conduct an assessment of the impact of service technologies on the emotional dynamics at play in the interaction between BSPs and the end customer. Service quality perceptions are considered for the utility of the research – understanding the resulting impact of the service provided. Consequently, the interaction dynamic is the central observational point for the analysis and a useful starting point for defining a mechanism for evidencing emotional expression and contagion is the literature relating to time and its relationship to emotional constructs, specifically a consideration of time in the formation of emotions.

There is a growing consensus that an emotional expression occurs during an emotion episode, which only lasts for a short space in time (up to four seconds) (Oatley and Jenkins 1996). Furthermore, people can evaluate their emotional episodes, and through self reporting processes, describe an emotional response hours and even a few days after an emotional episode has occurred. Therefore, the question of timing in analysing emotional expressions of BSPs is crucial and places the central point of the analysis and the methodological approach in the social context of the employee-customer dyadic interaction. Considering the voice-to-voice context, this involves an examination of 'technology in use' and 'language in use' during the interaction itself and development of plausible interpretations as a result.

As a result of the method review a data collection protocol was devised that builds on the call for a wider, social view of technology use and builds on the contributions made in this research area in terms of observation and interviews (Walsham 1993, Orlikowski 2000). Emotional constructs adapt the structured observation techniques used historically to a voice to voice context by taking a closer look at language in use technique to observe patterns in intonation etc. Service quality constructs will build on survey techniques used historically; adapting SERVQual scales.

# 4        THE DATA COLLECTION PROTOCOL

*Figure 1* outlines the resulting data collection process followed to support the protocol devised. Key data collection activities are highlighted and consist of the collection of organisational context information (e.g. project and operational documentation), attendance at an induction course for BSPs in keeping with the ethnographic tradition, interviews (familiarisation and analysis) and the running of drop-in-clinics. However a central activity is the collection of call and navigational data (which records simultaneously the call (interaction between the BSP and the end customer) and a recording of the screen shots of where the BSP was navigating through the service technologies used during the call. The approach is Interpretivist in nature and emphasises the importance of the context of the

individual, the interaction and the organisation in developing a valid interpretation of the link between technology use, emotional expression and service quality perceptions.
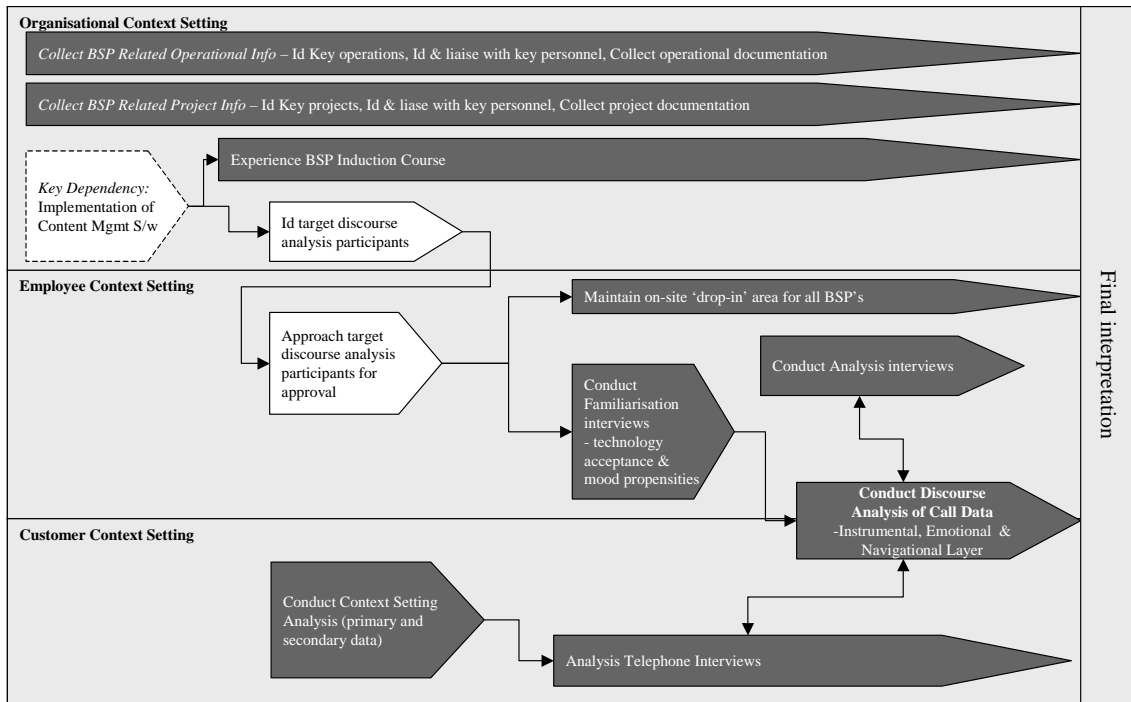


*Figure 1: Data Collection Process*

## 4.1 Individual Level

At the **Individual** level, the protocol deals with the data and technique for identifying in the case of employees, people's propensity to show positive and negative emotion and propensity to accept and reject technology.  For customers the protocol outlines the process for capturing their perception of the interaction and the service experience.

| Data Collection activity | Procedure |
|---|---|
| BSP Induction | Attendance on the in-house BSP induction programme, to introduce the procedures systems and processes of the BSP role.  This is also an opportunity to 'go native' (Goffman 1959) and identify, organisational and occupational norms. |
| Familiarisation Interviews | The purpose of these interviews is to gain their approval to participate in the research and start to build the relationship with research participants.  The research is explained, and queries answered.  Specifically the briefing aspect of this interview covers the objectives of the research, what is required of research participants, what the data collected will be used for and how the analysis will be anonymised and confidentiality maintained. |
| Drop-in Clinic | The purpose of the drop-in-clinics is to provide a physical place for research participants to contact the researcher when based-on-site.  A private working space is established in an area of the building where participants would not be visibly noticed if they 'dropped-in' to discuss any aspects of their work or the research programme they are involved in.  This provides a safe environment for participants and organisational members to make ad-hoc comments or raise queries. |
| Analysis Interviews with BSPs | The purpose of these interviews is to analyse the initial interpretations made from the analysis of the call and navigational data using the discourse analysis.  At the end of the first pass analysis each participant will be invited to a working one on one session with the researcher where extracts of their data will be played back to them (both call and navigational data).  The initial interpretation made by the researcher will not be made available and the |

| Data Collection activity | Procedure |
|---|---|
| | participant will be invited to discuss through a structured interview format their interpretation of what they were feeling and what this might indicate in terms of their interaction with the |
| | technology and resulting impact on the provision of service.  Examples of the questioning is given below:<br>Please list what words come to your mind when you hear/see that replay<br>What is your impression of what you were feeling then?<br>Can you recall any factors that might have influenced your reaction in that incident?<br>What were your feelings about the:<br>–technology you were using?<br>–the customer you were interacting with?<br>–the organisation then? |
| Analysis Interviews with end customers | The purpose of these interviews is to develop an understanding of the customer's perception of service quality.  Telephone interviews using predetermined questions inputted into an internal Customer Care system |

*Table 2: Individual Level - Collection Activity*

4.2    Interactional Level

At the **Interactional** level, the data collection protocol makes a contribution to methodology as it describes the data types and the process of linking and integrating data at three key layers.  Firstly at the *instrumental* layer which is concerned with the 'content' of what is said in the interaction and seeks to evidence when technology is directly referred to as having an impact on the interaction. Secondly, the *emotional* layer which seeks to highlight both emotion words and emotional intonation or indeed notable lack of it during the interaction.  Finally the *navigational* layer links the first two layers with those aspects of functionality that have also been accessed and used during the interaction.

| Data Collection activity | Procedure |
|---|---|
| Call and screen shot sample | A minimum of 10 BSPs will be invited into the research group observed at an interactional level. These individuals have been picked randomly across the call centre location and based on a set of criteria (including call type, gender, length of employment, shift pattern). In one month, between 30 and 50 calls are recorded per BSP, resulting in an available sample of between 300 and 500 interactions to form the basis of the interpretations.  The majority of the calls are between 2 and 7 minutes in duration, although it is envisaged that around 20 per cent of these interactions will be dummy or dropped calls with no interactional data to interpret. The procedure for analysis is based on a discourse analysis technique which seeks to identify critical incidents (Flanagan 1954) of emotional expression of BSPs and the potential for customers to catch emotions from BSPs (a process termed emotional contagion - Hatfield and Cacioppo and Rapson 1994).  There is a search for emotional cues within the dialogue between the BSP and the customer and this requires a coding mechanism for logging emotional responses. Others have evidenced emotional colour in the analysis of transcribed texts (Downing 1992).  Specific 'emotion' signalling words will be categorised in one of the four main emotion categories ('happiness', 'sadness', 'fear' and 'anger' emotions Oatley et al. 1996).. Further, the dialogue will also be analysed for tone of voice intonations. Where an emotional word is stressed through tone of voice, a stronger intensity notation will act as a marker, emphasising the criticality of the expression. Critical incidents will then act as a signal, an emotional cue, to prompt an examination of the navigational data and understand if any patterns emerge in relation to criticality of emotional expression and contagion and areas of system functionality within the service technology being used at the time. |

*Table 3: Interactional Level - Collection Activity*

## 4.3    Organisational Level

At the **Organisational** level the data collected deals with the social norms at play and in particular emotional labour constraints reinforced by the organisation through procedures and processes.

| Data Collection activity | Procedure |
|---|---|
| Research Diary | Upholding Klein and Myers (1999) principles of 'contextualisation' and 'interaction between the researcher (s) and the subject' have led to the use of a research diary throughout the data collection process to enable such details to be recorded systematically from the inception of the research design through to the final analysis of the data collected.  Observations and ad-hoc comments are recorded and will assist later in cross-validation of interpretations and the application of the wider principle of suspicion and multiple interpretation. |
| Project and Operational documentation | This documentation will provide valuable contextual information on related projects and the core service operations and the systems that support them e.g. Intranet screen and service technology dumps and reports etc. |

*Table 4: Organisational Level - Collection Activity*

## 4.4    Anticipated Contributions

At the susbstantive theory level, is envisaged that the final analysis and interpretation will lead to the development of a Theory for understanding (Gregor 2002) the in-practice use of technology in the service context and its implications for emotional dynamics and perceptions of service quality.  In line with Gregor's (2002) classification of theory types, the research may also have implications for the theory of design.  At the methodological theory level, the research presents an approach for investigating the link between instrumental, emotional and navigational layers of data; enabling an investigation of the impact of technology on emotion within the service context.  For the first time call and screenshot data is being used in an academic setting for the examination of the relationship between technology use and emotional expression.  This represents a contribution to the forging of a closer link between emotion research and IS research and enables a closer examination of the IT artifact which both information systems and organisational behaviour researchers have called for in recent years (Orlikowski et al. 2001; Rafaeli 2004).

The research also has a number of implications for the practitioner organisation hosting the research.  The analysis may enable the organisation to take a more humanistic approach to their future IS developments.  The organisation is currently interested in reviewing in a strategic planning exercise all of the front-line IS currently deployed and the results will enable a more informed 'rich picture' view of the impact of the current service technologies on both BSPs and the possible implications for the service experience.

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