

# Computer Mediated Banking: A Cross-Cultural Analysis of SMEs

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**Abstract.** This paper presents a view of banking as undertaken by SMEs (Small and Medium Enterprise) in Australia. It presents a user perspective to give insight into how people talk about banking, how they are using traditional bank services, and what it means to them to bank with new technologies. This paper builds on previous analysis and interpretation of the perceptions of these issues in the banking project. In this paper we apply Burke's [5] dramatic analysis. The paper analyses 15 SMEs to elaborate the mediation of money between banks and individual SMEs. We found that when talking about banking, individuals refer to location (scene) and processes using cheques, cash and the online interface (acts and agency) Thus an elaboration of the elements indicates that the scene-act-agency interaction is perhaps a significant nexus through which individuals negotiate this activity.

**Keywords:** SME, banking, Internet.

## 1 Introduction

The activity of banking is complex. With new technologies come new ways of transacting that have a huge impact on small business. The complex nature of banking requires a variety of approaches to understand this complexity. Previous analyses have been presented on our data; from an actor network theory perspective [2] to a grounded theory approach [16]. These perspectives have provided great value in understanding banking activities, but have also added some complexity through allocating the computer the status of agent. The alternative but complementary view presented in this paper places the computer as a part of the process of enacting banking. Hence here we present a new perspective of banking using Burke's [5] Pentad as the method of analysis, and this view of banking as a communicative act helps to identify issues relevant to cross-cultural design.

Small and medium enterprises (SMEs) in the global environment provide the context for this paper. The literature suggests that SMEs need to be considered differently to larger organisations in terms of technology development, adoption and usage. Indeed most major international banks are developing internet banking specifically for SMEs although cash may still be the dominant form of payment for SMEs worldwide in the foreseeable future [12]. The reason for this is that technology can have a huge sociological and economical impact, as well an important cultural impact [10]. This paper concludes that SMEs are a distinctive cultural group. We

build on our previous findings of user-centred security where we have found that in order to enhance banking security we need to not only focus on the technical aspects, but also the social aspects of design. It is important to enhance trust; and this can be done by increasing ease of use, people's control and personalisation of information, and showing care for the customer [15].

Australian SME's (and many others worldwide) are known to be slow to adopt new technology and to use technology innovatively. Somewhat contrary to this, our study shows that Internet banking is being embraced by SMEs. It is providing flexibility of work practices and the ability to control various aspects of business and personal banking activities (where, when, how); previously this was less possible.

Burke's Pentad provides specific attention to the location in which an activity takes place (where), as well as the individuals (who), the means of mediation of the activities (how), the activities and interactions that occur (what) and the purpose for which the individuals are participating in the activities (why). In this way, it goes beyond many current theories that emphasise situational factors. That is, by including the kinds of interactions which not only occur in actively constituting a banking environment, this framework represents a more encompassing explanation of banking environments than those privileging the physicality or the activities of the particular setting. This holistic approach provides insights that may not be available using other frameworks.

## 2 Theoretical Basis

This paper synthesises data from interviews with individuals and integrates it with the conceptual framework of Burke [5] into a unified and cogent conceptual basis for describing and evaluating a mediated activity such as banking. Burke's [5] dramatic analysis using the Pentad is a valuable methodological tool for investigating communicative acts [13, 14]. Ågerfalk and Eriksson [1] previously approached the interaction between an individual and an ATM as a communicative act using Weber [19] and Habermas [8]. While their analysis focused on usability, particularly effectiveness, efficiency and satisfaction, they argue that usability must be approached with consideration of both the instrumental and the communicative goals of a system. Like Ågerfalk and Errickson, we are concerned about how an individual interacts with a bank within a social system even if 'the user is potentially unaware of or uninterested in this larger social context' [1: 10].

### 2.1 Description of the Pentad

Burke [5] proposes five terms or pentadic elements (act, scene, agent, agency and purpose) that assist in understanding a narrative, in this case banking. Using this framework allows focus to be placed successively and simultaneously on elements within the pentad. This ensures that any discussion of banking (what is done – an act) will proceed from focusing attention on the scene, where people are banking, in tension with one or more other elements, who they are, how they are doing it or why. These elements contribute to our understanding of the interactions banking customers engage in and how we can design our banking systems to make the most of these

interactions in terms of security, privacy, identity and trust. Burke [5] states that any analysis of the motives of participants will give "*some kind of answer* to these five questions: what was done (act), when or where it was done (scene), who did it (agent), how he did it (agency) and why (purpose)". (p xv italics in original).

While each element can be used to describe in detail one aspect of what we refer to as the 'banking environment', Burke elaborates this through the ratios that are manifest between the elements. These dyads, for instance, the scene-agent ratio, provide greater insights into what motivates people to undertake an activity, because it is through the elaboration of the tensions between the act and the scene, for instance, that the meaning of the act is further illuminated. Each element, even when discussed individually, that is, through attention to each term as a single element, still requires other elements to assist in its definition. In this way, the understanding of motivations is illuminated, because the purpose for engagement, for instance, is highlighted by how individuals engage with the scene (agency).

In terms of a banking environment, some acts have no form or possibility outside the environment. For instance, depositing money requires a bank to accept the money for holding in an account; else it becomes a gift or a purchase. Thus, a customer may engage in the act of banking within a bank, at an automatic teller machine or online, each act constituting banking, but each constrained by the kinds of act available through the 'interface', that is, the 'teller', the ATM or the computer. A customer in a bank, interacting with a 'teller' has access to more information and more forms of interaction than a customer at an ATM. Similarly, a customer using internet banking has access to more information than that available at an ATM, but may be constrained by the location of the computer in a 'public space' (e.g. an internet café). A customer interacting with Internet banking within a more private location will be less constrained than one interacting in an Internet café (a more 'public' private space yet functionally equivalent in terms of the internet banking interface).

### 3 Research Methods

Presented here are results of a qualitative study on banking, personal communications and financial decision-making. This research is part of a wider project focusing on Security, Trust, Identity and Privacy in the Smart Internet Technology Cooperative Research Centre. We approach these issues from the users' perspective making them central to the design of financial services and bank strategy.

We conducted a qualitative study between April 2005 and March 2005, with fifteen participants from SMEs across two capital cities in Australia: Melbourne and Brisbane (see Table 1 for details of the characteristics of participants, (all names are pseudonyms)). The people were accessed through personal and professional networks. In choosing our sample for the qualitative interviews, we were careful to include bank customers who do engage in online banking as well as those who don't. We adopt a user-centered design perspective which places users' activities within their social and cultural context [18, 3, 17]. It is a 'grounded' study in that there was a fit between data and emerging theory, rather than a testing of hypotheses [7].

**Table 1.** Participants' characteristics

<i>Name</i>	<i>AGE</i>	<i>Household income</i>	<i>Uses internet</i>	<i>Ethnicity</i>	<i>Type of SME</i>	<i>location</i>
Brenda	35-44	75-99	Yes	Australian	Farmer	Rural
Claire	45-54	25-49	No	Australian	Farmer	Rural
Fran	35-44	75-99	Yes	Australian	Graphic Design	Other Urban
Fred	45-54	\$100k+	No	UK	IT services	Urban
Gay	25-34	100+	No	Australian	Medical	Urban
Greg	18-24	Under 25	Yes	Greece	IT Services	Urban
Hester	55-64	\$100k+	Yes	NW Europe	Biotechnology	Urban
David	45-54	100+	Yes	Australian	Consultant	Urban
Laura	25-34	N/A	Yes	Australia	Medical	Urban
Mark	35-44	\$100k+	Yes	Australian	Consultant	Urban
Nancy	35-44	\$75 - 99	Yes	Australia	IT Services	Urban
Peter	25-34	\$100k+	Yes	Australia	IT Services	Urban
Rita	35-44	\$100k+	Yes	SEAsian	Unknown	Urban
Samuel	35-44	100+	Yes	Australian	Hospitality	Urban
Shane	25-34	N/A	Yes	Australian	IT Services	Urban

Each face-to-face interview lasted between one and two hours, being tape recorded with permission from the participant. The interviews were then transcribed. The project team used QSR's N6, a computer program to assist with qualitative analysis. The use of this software helped to keep all project data in one location and accessible, as well capturing themes, thoughts and general ideas arising from the data during analysis. Each team member was involved in the coding of interviews. We approached this by first broadly coding the data, then organizing the data into matrices to check emerging themes in a transparent manner. We also used the N6 software to identify negative cases so that the study was rigorous.

SMEs from a range of industries were interviewed for this study. All participant SMEs contributed well to the diversity of the overall project by giving useful and relevant information about personal banking activities as well as those that are business-oriented. The separation between personal and business banking was often difficult for those running an SME.

Our analysis reveals how a particular group of banking customers (SMEs in Australia) constitutes a distinctive cultural group. Comparisons among banking environments and individuals participating therein are facilitated by a Pentadic Analysis, because each example may be viewed through the same lens. These lenses can be applied to different situations and different cultural groups providing clearer evidence of which form best supports banking for a particular group of customers.

This research constitutes the first of a series of analyses of banking environments which all differ in their implementation and delivery. However, the speed with which technology evolves means an increasing need to establish those aspects that do facilitate secure banking in these different situations, and incorporate them into the design of banking systems designed for particular cultural and business groups.

## 4 Usability of Banking Interfaces

Ågerfalk and Eriksson [1] found that within a communicative orientation, mutual understanding and trust were key interpretations of usability criteria. These concepts relate to security, privacy, identity and trust as the mutual understanding requires that the user and the banking system require security to ensure the identity of the individual is correct and that privacy is maintained to prevent the erroneous allocation of an identity to another individual. Thus, using Ågerfalk and Eriksson's framework with Burke's framework allows the use of Burke's Pentad to elaborate these key concepts of mutual understanding and trust.

### 4.1 The Elements

Each of the five elements interacts with other elements in many ways resulting in many interrelationships between elements. These interconnections depict the dyadic relationships that arise from the analysis. Each of these elements requires viewing from multiple perspectives to understand their contribution to a banking environment. The interplay of the dyads illuminates how each element contributes to the definition of banking and associated activities.

*Agent* The agent in this context is the account holder or a designated person who can act on their behalf. In this research, it is the SME and this is generally made up of an individual person or a partnership (often husband and wife).

*Purpose* The purpose of banking is embedded in daily life and business keeping tabs on finances, paying bills. Other purposes come into play particularly with business for managing the business finances and the business in toto. One of the main purposes of banking relates to security of finances and money.

*Act* The act is a composite process of depositing, withdrawing, investigating balances, paying bills, monitoring credit. Any interaction with a banking institution may be classed as an act, from gathering information to borrowing money and setting up retirement schemes.

*Agency* Agency has a number of levels. From one perspective, the Bank is the agency through which agents act with their money. The Bank essentially enables agents to act. At a lower level, the branching system of banks in Australia affects the possible acts, and whether an individual agent can access the same information via different branches. Note that some Banks create Agencies (branches) for customers. Individual agency is often limited through these Bank Agencies. In effect, such Bank Agencies deny certain levels of individual agency, that is, how individual agents interact with the bank is curtailed by the Bank Agency. Again at a more confined level, agency is enacted through the forms and processes which the bank uses for exchange of information (deposit forms, withdrawal forms, loan applications etc) as well as the passbook and the magnetic strip card (key cards, credit cards, debit cards).

*Scene* The scene is another area which has multiple definitions and one which is becoming more complex with the changes in options for individual agents. Initially, the scene is the Bank Office/Premises during office hours (the scene also has a temporal aspect – when particular acts may be undertaken). Prior to the advent of information technologies, individual agents could often only act within their defined Bank Branch. Systems enabled certain actions to be undertaken in the non-primary

branch, but often access to information was limited. Information technologies, including electronic data transfers and the Internet have enabled more fluid interactions with Banks, such that individuals could gain access to all their information at all Branches (notwithstanding that some Bank Agencies still had limited access to information). In this way, the scene was expanded - individuals had multiple options for gaining access to their information.

However, given the mobility of much technology, particular laptop computers, personal digital assistants (PDAs) and mobile phones, the broader definition of the scene needs to include the locality of the device through which the individual agent accesses their information. For instance, there are differing requirements accessing banking information in an office environment than there are accessing the same information in an Internet cafe. The types of interactions can be limited particularly if the screen can be easily viewed by a passerby. Similarly, the operating system of the host computer is often not as secure as an individual's own computer, depending on the nature of the access. These factors increase risks to maintaining security and privacy of information and potentially open up new risks to an agent's identity.

## 4.2 Communicative Acts

Having defined the pentadic elements in brief within the banking environment, the remainder of this paper will focus on the nexus of banking; that is the interaction of the scene, act, and agency and the dyads arising within this interaction. It should be noted from the above descriptions of the elements, that the agent is defined in terms of SMEs, and the purpose is banking related. Thus two of the five elements remain constant for this discussion. Scene, act and agency vary considerably between forms of banking, the particular activities undertaken and where the activities are occurring. Thus the following elaboration is focused on three elements – the nexus of banking.

## 5 Patterns of Usage Within SMEs

To contextualize the interactions of the 15 individuals within the SMEs and their relationship to Internet Banking (IB), table 2 demonstrates the comfort with which individuals interact with online finance. While the majority appear to be comfortable with both Internet banking and e-commerce, some prefer not to use IB while one person does not use either. This demonstrates that the scene may be a particular point of conflict for some users.

As highlighted by table 2 (and explained in more detail previously in Section 3), Gay appears to be an anomaly within the SME group under study. She does not use IB or e-commerce. She deposits the cheques for her business in the bank. This demonstrates that her acts (depositing) are undertaken with a particular agency (cheques) in a particular scene. Other forms of agency used by Gay include cash, which she spends or puts away in her cash drawer. Her interaction with the bank (scene) with cash (agency) is confined to depositing cash (act-agency) when she knows that a bill is due (purpose). Gay has two credit cards, but uses them only when she has to pay for something on the phone. Otherwise it is cheques, EFTPOS or Bpay

over the phone, cash for small items. In previous work situations, she received a cheque for her pay, but otherwise it was all direct credit. Now in her business, she receives mostly card payments, some cheques and some cash. Gay doesn't use the ATM (agency); she gets cash from work (scene-act-agency).

**Table 2.** Participants' preferences for IB and e-commerce

		Internet Banking	
		Yes	No
E-commerce	Yes	Peter, Fran, Hester, Mark, Nancy, David, Samuel, Shane, Rita, Laura, Greg	Fred, Claire
	No		Gay

Fred still uses cheques (agency) stating that he is 'still old fashioned enough' to do so; although he goes on to say he is 'using them less and less'. Fred likes to say hello (act) to the people in the bank (scene) and goes once a week to deposit cash (act-agency). Fred feels that in an age of internet transactions, Bpay and direct debits and credits, the notion of the friendliness of the bank and the personal transactions (acts) that he has are important to him and he wants to know that 'there is someone I can go to who knows about me' (agent-agency). Fred's way of interacting with the bank displays an awareness of the locality (scene) of the acts he undertakes and provides a sense of individual security for him so his role in his banking (agency) empowers him and maintains his sense of identity. Fred states that IB is 'not convenient'.

Claire, likewise, did not like IB, feeling it was unsafe. Claire only uses phone (agency) banking for balances. She may eventually use IB (scene) more but is concerned about security. She states 'it's the not knowing' about security that has prevented her from accessing more services.

The remaining individuals show varying levels of individual interactions with their banks. Peter and Hester visit the bank less and less (act-scene), Hester because it is 'convenient' and Peter because his business is now chiefly with governmental departments. However, Peter states

I still receive cheques (agency) from other people particularly from smaller clients (act-co-agents). Small business' (co-agents) that have ..only twenty or thirty people or down to sole trading. And very, very rarely people pay in cash, extraordinarily rarely.

His income from the government work is by direct payment (act-agency). Peter BPays 'just about everything' (act-agency-scene).

Hester's business on the other hand, deals with large sums of money in an international context and uses a specifically designed system (agency-scene). Hester spends much less time at the bank (scene) now he has Internet banking. For any queries and some of his transactions (acts), he visits the branch of his bank in the city (not his local one - scene), which has an International Trade Centre, and he knows a number of people there quite well (agency). He trusts them (act-agency). This trust has extended to online systems as the bank has contacted him when some anomalous activity occurred in his account (act-scene-agency).

Mark hates going into branches (scenes) and went on the Internet (scene) as soon as he could but believes security could be improved (agency). Nancy, likewise, took to IB as it liberated her (act-agency). She now works on her accounts (acts) while her children sleep or on Sunday afternoons (scenes). Her job running a small business became easier with IB (act-agency-purpose). Shane is another avid user of both the Internet and IB (scene-act). He recognizes the risk of IB but says any type of transaction is a risk (agency). Greg also follows his transactions (acts) everyday via IB (scene), although he will not use shared computers to access his account (scene-act). Samuel also conducts much of his business online but believes IB is not user friendly with too many clicks to confirm transactions particularly 'when you have forty of them' (act-agency-scene). Rita, on the other hand, is a reluctant user of Internet banking (act-agency-scene). Rita's husband has an SME but Rita is the one to deal with the bank. She still used an old passbook, which she had to forfeit, "I'm a traditionalist you see, I had to give it up actually" (act-agency).

From the preceding discussion, it becomes apparent that the group of SMEs in this study frequently speaks of the agency (that is, cheques, IB, cash) together with the scene (online, in the bank, at home on a Sunday afternoon). The acts they undertake (maintaining contact – saying 'hello', developing trustful relationships, depositing, keeping up-to-date with transactions) display an awareness of where they are being done (scene).

SMEs in Australia appear to have a love-hate relationship with their banks (agency-scene). Many of them take up IB (scene) but still visit the bank (scene). The scene of their banking thus becomes multiple with many of them maintaining the face-to-face contact despite not needing to. As shown by the variety of ways of interacting, some SMEs take advantage of the extended hours available through IB thus extending their scene (scene being both place and time dependent). The tendency of many to interact within a branch and to maintain their agency through this attendance places emphasis on the need to consider the scene for SMEs.

IB seems to increase the scope of agency allowing multiple forms although some are being denied to the 'traditionalist' (Rita with her passbook) and individuals who still use cash (Fred and Gay). SMEs appear to use IB both reluctantly and with fervour while still maintaining individually preferred forms of agency wherever possible. It is interesting to note that even IT-based businesses (6) in this study use a range of banking 'scenes'. Internet banking was only of the options used to do every day banking in an SME; other options regularly used were cheques and face to face banking.

## 6 Conclusion

Elaborating the pentadic elements with respect to banking allows the analysis to be focused on the multiplicity of parts of the communicative act that is banking. The scene is variously located, with the act taking place within a bank branch, outside a bank branch (ATM), online via a web interface or by phone. The scene in this case refers to the place where SMEs are interacting with their bank. The scene is expanding so that the bank branch is no longer the primary place of transaction for an SME. The agency of the individual within the SME incorporates the technologies: the



computer, the ATM, the telephone or the sociotechnical: the bank teller in face-to-face interactions. The majority of these SMEs are using IB and are feeling 'liberated' with its availability. This demonstrates that, unlike the findings of [6], who found online banking was virtually non-existent; a distinctly different cultural group of SMEs is emerging within the Australian context.

Banking is very personal, as is running an SME. Even though the literature from many countries around SMEs, such as Finland [11], Thailand [9] and South Africa [4] suggests that SMEs are hesitant and thus slow to adopt new technology, Internet banking may be an exception. It is being largely embraced and the reasoning suggested by our data is because of the personal benefits. The major benefits of Internet banking for SMEs seem to draw on time and economies - allowing more flexible banking practices, at any hour of the day.

This study also demonstrates that Burke's [5] Pentad provides a useful framework for discussing and describing a banking environment and for elaborating differences between cultural groups. The pentadic elements aim to ensure that all aspects are viewed. This means that attention is paid to the agent - the individual undertaking the act; the act itself; the method by which the act is undertaken (agency); the purpose for the act; and the location or scene of the act. Using Burke's terms provides a greater definition of who, where, when, why and how and allows the elaboration of interactions between the elements. In this way, it becomes clearer that the act, whether learning or interacting, cannot take place without the location or scene being included. The power of multiple perspectives, such as found in dyads (scene-act, scene-agent) is an explicit statement of the concerns that centre on a consideration of banking mediated by the interface of an online environment. This consideration proceeds from the assumption that no single perspective can provide the kind of analysis required to begin to comprehend the interactions of an individual with an Internet bank. This allows direct investigation of cultural factors.

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