VIRTUAL ORGANISATIONS, ORGANISATIONAL KNOWLEDGE AND THE CUSTOMER: HOW 'VIRTUAL ORGANISATIONS' DEAL WITH 'REAL' CUSTOMERS.

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This paper reflects on the results of a long-standing ethnography of customer-facing work within a large retail Bank. Features of the contingent and skilful nature of that work, in an institution undergoing large scale organisational change, are documented and used to comment on aspects of working with 'virtual customers' within an organisation that might be seen as moving towards the model of the 'virtual organisation'.

Keywords: Virtual Organisation, Organisational Knowledge, Customers, Ethnography

INTRODUCTION: 'VIRTUAL ORGANISATIONS' AND THE CUSTOMER

This paper is concerned with detailing a range of fieldwork observations undertaken over a period of years in various organisational units of a large retail bank. The descriptions we provide are intended to provide some analytic light on aspects of responsiveness to the customer and 'customer-facing' work in highly distributed, or what some have termed 'virtual' organisations. The notion of the 'virtual' has been used, of course, to describe rapid information flows across geographically dispersed organisational units, and by implication to describe the efficiencies that accrue from electronic technology through the new work arrangements associated with it. In this respect the 'virtual' relates to debates which have been expressed in terms such as 'the learning organisation', 'organisational memory' and organisational knowledge', and co-ordinative team-based work organisation. What is at stake in all such concepts, we suggest, is the degree to which information structures and flows are equivalent to what is known, remembered and understood by workers, individually and jointly, about the organisation and its customers. Underpinning such concepts, to some degree at least, is an 'information theoretic' stance about which we entertain some scepticism. What is known, remembered and understood in the context of changes in work and technology, in our view, is social through and through. Knowledge, in this sense, can only be understood through its relevance to the practical matter of how, in the here and now, to best do the job that needs doing. In order that relevant knowledge can be brought to bear on a particular work task, the knowledge must be *construed* in a particular way.

Construed knowledge, moreover, is a difficult and obdurate problem for organisational practice by virtue of its elusiveness. It is difficult to see and understand without deliberate methodological commitments oriented specifically to its elaboration. In addition, this poses a problem in understanding how new technology relates to new work arrangements. There is a general presumption that new technology enables forms of organizational knowledge that can be co-ordinated and dispersed through the organisation so as to obviate the kinds of contextual competence and skill we have alluded to. We aim here to make an initial evaluation of this presumed shift through an analysis of customer- facing work in organizations where changes in technology and work arrangement are being implemented.

The concept of the 'virtual organisation' is intended to denote an organisational form that addresses major transformations in the social, economic and technological environment in which organisations now operate. In financial services, for example, Channon (1998) charts the developing impact of the IT facilitated reorganisation of retail banking services (see also Kuljis et al 1998) and the introduction of ICT driven delivery systems such as ATMs, telephone and Internet banking suggesting that:

> *After half a century of relative stability information technology was a major contributor to transforming and forcing convergence of what were previously a series of segregated industry segments... organisations that wish to survive and prosper in a rapidly changing environment must look further than the narrow confines of their traditional operations and open their eyes to a broader horizon in which information technology is a key driver of corporate strategy.*

Whilst subject to considerable academic dispute (see Sieber and Griese 1998) 'virtual' organisational arrangements can be said to consist of networks of workers and organisational units, linked by information and communication technologies (ICT), which will flexibly co-ordinate their activities, combine their skills and resources in order to achieve common goals.

> *VO's (virtual organizations), refers to a new organizational form characterized by a temporary or permanent collection of geographically dispersed individuals, groups or organization departments not belonging to the same organization – or entire organizations, that are dependent on electronic communication for carrying out their production process. (Travica, 1997)*

One common organisational goal concerns an increasing focus upon customers. Holland et al (1998), for example, suggest that the competitive forces unleashed by IT, globalisation and deregulation in the financial services markets are leading to massive and irrevocable changes in customer awareness and customer expectancies of financial services products (see also Knights et al 1997; O'Reilly 1994). These so-called 'post-Fordist' relations are instantiated in Burton's (1994) perceived shift in financial services from a 'telling' to a 'selling' culture:

> *There has evidently been a shift from organisational cultures which were conservative, reactive and cautious, and where the main element of the job was*

administration. Contemporary financial service personnel are required to be proactive, entrepreneurial and possess a high level of interpersonal skills and marketing expertise. (Burton 1994:5)

Our interest in this paper is with describing such relational issues and considering how they can be handled in the 'virtual organisation'.

METHOD: 'DATA DRIVEN SOCIOLOGY' - ETHNOMETHODOLOGICALLY INFORMED ETHNOGRAPHY.

The method employed in this study, ethnomethodologically informed ethnography (Hughes et al 1994) places methodological emphasis on the rigorous description of the situated practices through which a setting's activities are produced and accomplished. Its aim is to observe and describe the phenomena of 'everyday life' independently of the preconceptions of received sociological, or for that matter organisational, theories and methods (see Bittner 1965). The advantage of such an approach in this case is that it is non-presumptive in its stance regarding the phenomena and concepts supposedly associated with virtual work but is rather focused on explicating the actual, visible outcomes of new work configurations. It involves a renewed and unprejudiced look at phenomena frequently obscured beneath layers of theoretical abstraction and speculation and therefore seems ideally suited to the study of the virtual organisation. The approach sets out:

'To treat practical activities, practical circumstances, and practical… reasoning as topics of empirical study, and by paying to the most commonplace activities of daily life the attention usually accorded extraordinary events, seeks to learn about them as phenomena in their own right' (Garfinkel 1967)

Thus, attention is focused upon the study of *doing the work.* Our aim is to describe in detail how customer-facing work in financial services has been, and is, being done. To do this we draw on examples taken from some eight years research within financial services to try and understand how customer-facing interaction is organised, and what features of these interactions may prove consequential in virtual organisations. The research reported on encompasses observations in two institutions, a medium sized building society and a large clearing bank.

THE ORGANIZATION OF CUSTOMER-FACING WORK

While space precludes discussion of all relevant strategies, below we examine two of the salient features of customer facing work as they are represented in the 'traditional' milieu of the retail financial organisation - that of the local branch. They relate to the unpredictability of customers and the concomitant need to maintain customer confidence; and to 'local' knowledge as a resource for dealing with customers. Of

course, the change implicated in notions of the 'virtual organisation' is precisely the reduction of face-to-face interaction, both as it directly impinges on the customer and in relation to co-operation and co-ordination between operatives. Nevertheless, it should not be presumed that these characteristics of 'customer facing' work relate only to face-to-face encounters . Work, to a degree, has been technology mediated for a very long time already, certainly since the invention of the telephone. In much the same way computer technologies have been a feature of branch work for some time, and even relatively 'state of the art' technologies such as video conferencing can be utilised in the context of some quite traditional interactional arrangements, as in the example we give. One question, therefore, has to do with how interaction is conducted, not simply as a result of new technological constraints and affordances, but how it is organised in response to new and inseparable constellations of technology *and* work practice. We begin, then, by characterising 'typical' problems of interaction in the branch, and by suggesting equally typical ways of dealing with them. That is, the mere presence of a technology does not obviate the need for demeanour work, as we shall see.

The problem of customer unpredictability and customer confidence

It is a commonly observed feature of branch work in these institutions that cashiers have to deal with each customer without knowing in advance what their requirement will be, not only in terms of the *nature* of a request, but also in the way in which requests are *structured*. Customers structure their requirements in a variety of ways, including making a series of requests at the beginning of their encounter with the cashier, inserting 'oh, by the way' questions into the course of their interaction, or alternatively waiting for the completion of the processes associated with an initial request before making a second. Customers simply cannot be relied on to produce their questions in a fashion that is predictable or consistent with the institution's order of things, nor can they be relied on to furnish all relevant information. Interactions with customers can, then, be hugely unpredictable. This simple fact has a relevance not only to face-to-face interaction but also to telephone enquiry and by extension to other forms of computer mediated communication, whereby trying to keep the customer satisfied is a matter of juggling a quite complex and potentially conflicting series of demands (see Randall and Hughes, 1994). Nevertheless, and *pace* customer complaints about bad service, branch operatives are skilled and practised at dealing with customer problems, whatever their complexity.

Demeanour work

Customer confidence comes from the seamless and apparently unproblematic way in which bank staff are *manifestly*, demonstrably, able to do the work necessitated by customer demands and thereby to produce an orderly flow of transactions. For cashiers to be seen as competent requires them to engage in a significant amount of demeanour work - routinely explaining as they go along the steps they are taking, what enquiries

they are making of the screen, to whom they are telephoning, and so on. Competence is evident in this sense in the way the flow of interaction is maintained, without palpable gaps, in routine and minute by minute interactions.

One surprising feature of this interactional expertise (at least to us), is the way in which computer technology can, on occasion, both obstruct and support this visible flow, and, consequently how the demonstration of competence involves learning both how to 'display' and to 'hide' the technology within a single interaction. Maintaining interaction with customers whilst at the same time using information screens, that is, involves rendering the technology invisible by seamlessly weaving its use into the interactional flow. It is, so to speak, *there* but not obtruding. However, navigating through the screens and reading the information they contain can be time consuming and can lead to considerable difficulty in conducting smoothly flowing conversations with clients. Difficulties in interrogating the database and deciphering information can be a major factor in the erosion of customer confidence. Closely related to this, the fundamental problem of information screens is that the information they convey is typically structured according to the flow of transactions, not to the flow of enquiries. The orientation brought to a given enquiry by the customer, however, will be driven by a particular context. It is the absence of context sensitivity that creates the difficulties in interrogation which in turn disrupt the flow of visibly competent work. Whilst customer satisfaction remains an issue, operatives, whether on the telephone, or using video conferencing systems, will still have to contend with various sources of unpredictability. Hence, efficient use of the technology and interaction with customers has to be successfully managed simultaneously. In the act of processing transactions, the competent operative must routinely 'weave' use of the technology into the flow of interaction with customers such that the relevant expertise and skill is made visible.

An example of this issue comes from a consideration of the teleconferencing kit - a commercial, ISDN-based, desktop video conference system, with dedicated database and communication software - which had been installed in the 'Telehelp' section of the Insurance division of the Bank. The role of the Telehelp team was to give insurance advice to customers. One, highly visible, feature of the work with the videolink, was the extent to which the staff were required to 'talk through the technology' - both to alert the customer to what was going to happen next; that 'the screen will go fuzzy'; that 'it will take a couple of seconds for this information to be transferred to you' and so on; and to explain the everyday meaning of technical insurance terms. This process is illustrated in the following abbreviated fieldwork extract of the videolink in use:

1. Preparing PC1 for use. - in response to call from branch
2. Call through on link - talking about problems of call (?) - 'what can I do for you?'
3. Branch intros customer
4. Takes customer details - using screen - filling in form on screen - surname, initials, postcode, house number
5. Transferring info - explains about picture 'going fuzzy'
6. Buildings insurance - asking questions - rebuilding costs etc

7. Transferring info - explains about screen 'going fuzzy' again - talks about 'features and benefits' - additional insurance. freezer food; 2 million owner liability etc - makes postman and slate 'joke'.

Apart from preparing the customer for the screen 'going fuzzy' the operator also deploys one of the standard 'jokes' for explaining the importance of a £2 million owner liability feature in the policy in order to mediate between the technical insurance and legal language of 'owner liability' and the everyday world. This is done through the device of *what would happen if one of your slates fell on the postman's head when he was delivering?*. Of course this issue of 'translation' and of coping simultaneously with both the technology and the customer happens with other technologies and in other contexts but the difficulties that ensue should not be underestimated. Observations document the sheer *frequency* and *regularity* of this kind of 'demeanour' work . Accomplished use of the technology requires that much of an operator's time is actually occupied with reassuring the customer and navigating them through the work.

Knowledge of the customer.

The unpredictabilities of customer facing work are demonstrably manageable, and are handled in ways which indicate the sometimes hidden skills of ordinary operatives. One such way is through the use of 'local knowledge' - that is, a particular knowledge of the circumstances of the customer, their business and their account that often represents a short-cut to processing. The following fieldwork extract indicates how some of this 'local knowledge' is deployed in a lending interview. In this particular case, the Lending Officer is considering an approach to borrow money to purchase a hairdressers:

LO: What can I do for you?

C: ... been hairdressing for 10 years... we've seen premises … we were enquiring about money…

LO: Where is it?

C: Its on ...

LO: What figures are we talking?

C: … 68K ... the Building Society say its worth 65... we think it'll come down…

LO: … first question - what have you got to put into it?

C: .my own home... that's all ... we haven't really got any ideas…

LO: For a commercial proposition to get off the ground we're looking at a third... the Banks have had their fingers burnt in the past... (explains) ... its 20K ... or something like that...

C2: do you think if we got a more realistic figure ..., we would stand a chance?

LO: There's nothing wrong with purchasing property... (but) I'd be thinking more on the lines of 30... The first question on my pad is the contribution ... if it was 30 and you were putting in 10 then I'd think of it...

After the interview.

LO: You've go to be cruel to be kind... there's no way I'm going to lend the 68K with no contribution from them ... the risk is all with the Bank... (after looking at the) initial contribution I didn't delve any further ... if they're not putting anything in its not worth going into any other questions. The problem is ... I know her account is crap... there's an enforcement order on... its a waste of time I spend an hour going through them... (the proposition) wasn't really thought through... (its) back of a fag packet stuff...

The issues we have been discussing are visible in this encounter. For the Lending Officer, two kinds of competence are in question here. One, which we term 'organisational competence', has to do with meeting perceived organisational requirements as they pertain to lending strictures. The other, which we term 'interactional competence', has to do with persuading the customer that the decision in question is visibly and accountably the 'right' decision. One point to bear in mind about the (truncated) transcript above is that the decision in question had been contingently made before the interaction takes place, and was made on the basis of knowledge of the way in which the customer's account had been managed. Hence, 'I know her account is crap'. The 'skill' that Lending Officers routinely deploy in their customer interviews, as well as the detailed 'local knowledge' of their customers and the running of their accounts goes some way to developing an understanding that decision-making in the Bank, despite an emphasis on procedure and the range of sophisticated computer support, often comes down to 'gut feeling'. As one CSB Lending Officer put it *a lot of it is just gut feeling... the only other thing you've got is how the account has run historically and income and expenditure breakdowns ...and they cant tell you anything...* Lending on 'gut feeling' clearly benefits from the kind of detailed local knowledge of the customer commonly found in the branches and is a persistent feature of the fieldnotes. The point we are interested in is the extent to which such local knowledge, developed in a branch with a few thousand customers, is likely to be a useful resource in everyday work in a highly centralised and distributed organisation - a 'virtual organisation' - where the customer base is nearer one million, and in a context where the initial organisational presumption was that operating on 'gut feeling' was the very thing that needed to be eradicated. As one manager put it, ...*whether you go into a branch. or apply for a loan … in Manchester or in Southampton ... you should be treated the same way...*

CUSTOMER WORK AND THE 'VIRTUAL ORGANISATION'.

As we have pointed out, the general view of the virtual organisation is that face-to-face encounters will be substantially 'managed out' or at least more rationally managed under new working arrangements. This does not, of course, mean that customers can always be managed in this way, or that they will disappear from the branch entirely. One of the ways in which customer unpredictability has been historically manifest is in the continued insistence on face-to-face encounters by a substantial proportion of the customer population. The development of ATMs has not seen a concomitant reduction in the number of customers using bank branches. Quite the reverse. More prosaically, even attempts to manage interactions by virtue of separating 'routine' transactions from 'customer service' work by use of 'front desks' sometimes results in cashiers having to do customer service work to save customers from queuing twice. Nevertheless, particularly in the context of lending, there has been a serious attempt in the major retail financial institutions to reduce the face-to-face work involved, most significantly on the part of the traditional bank manager.

Co-operating with the 'customer in the machine'.

We shall now shift our attention to 'customer-facing' work in situations which do not involve actual face-to-face communication. Instead we shall attempt to address some of the intriguing issues of co-operating with 'absent' customers - co-operating with the 'customer in the machine' - that are consequent on both the massive organisational changes and the changes in consumer behaviour that Burton (1994) suggests have occurred in financial services in recent years.

Like many other financial institutions in the UK, and elsewhere, the Bank from which the fieldwork observations are drawn has embarked on a transformation of its 'traditional' organisation to enable it to meet the increasing competition in the financial markets. This strategic plan has been implemented in various ways; most obviously through a general and comprehensive restructuring that has involved the centralisation and standardisation of processes and the creation of specialist centres, such as Lending Centres, Service Centres, and Securities Centres, all servicing an increasing number of 'high street' Customer Service Branches.

The 'Virtual Customer': the customer 'in the machine.

The overall aim of the Bank's strategic plan was to transform the organisational culture from a predominantly 'administrative' one to a 'selling and service' culture. While the rationale of these changes was 'organisational', it was also dependent on the extensive use of IT to 'reconfigure the organisation' through its application in data analysis and processing, communication and decision support. The centralisation process itself required much greater co-ordination. In that case IT support, network systems of accounting, relational databases and 'expert' systems were seen as essential. Financial institutions have long been in the forefront of the use of distributed computer systems and recently have begun to explore, in conjunction with major organisational changes,

the increased use of IT to support decision-making, quality control and customer services. The notion of the 'virtual customer' is one promoted and enabled by this developing use of IT.

'Virtual customers' are representations 'on file' and increasingly 'in the machine' of 'types' of customer endowed with utilisations of bank products, spending and income patterns along with protocols representing the 'rationalities' governing customer behaviour. Information contained in customer files, and increasingly through perusal of computer records (such as the '836' which gave a breakdown of the working of the customer's account over the year and the 'Customer Notes' which contained a record of every contact between the bank and the customer), were used to construct a 'picture' of the customer. This then played a part in the complex interaction between the customer and the various bank mangers. This, increasingly computerised, record was valuable not simply or merely for the attribution of blame but through its procedural implicativeness in informing and guiding the actions of others, constituting an important component in the individual worker's 'sense of organisation' - enabling them to quickly obtain a grasp not only of 'what had happened' but also 'what to do next'.

A dramatic illustration of this is contained in the example that follows when one business manager has had to cover for another's illness and had suddenly received a phone call asking for an increased loan to pay off the Inland Revenue. As he looked through the customer record, the Business Manager had to come to a rapid understanding of 'what's going on', make a quick decision and to offer a reasonable justification, a rationalisation for his actions. The decision in this instance, is being made on the basis of what is contained in the record:

> *Looking at file (Business Manager...- off sick) - emergency (phone call from customer) - doesn't know the file. Customer is heavily borrowed and not generating the income.*
>
> *Discussion of case (tape) - ... Well, its a bit of a problem really because I don't know the file , you know, and its a pretty meaty file I don't know it... so I have to very quickly look and try and sort of acquaint myself with what's going on and what's been arranged in a short space of time because ~. But basically, he's heavily borrowed...(shows figures/folder) forget the money on clients accounts because that's not his money ...but he's got a private loan acc of 38 a business loan acc of 20 and business OD ...umm... of 29 there's a lot of borrowed money there ...on a business and clearly he's having difficulty in servicing it all ...now I don't know what they were all for... I really... I mean I would if it were my own file I would know it having done it and researched it ...I could find out by reading it... but I don't really have too much time to do that...*
>
> *...but you know, isn't it ridiculous ...saddling... saddling themselves with all that level borrowing...its £90000...and they can't deal with the thing...*

Reliance on the record, then, is increasing. Moreover, the records in question, though not in this example, are increasingly computer based. In part, this is a result of the way

in which personal relationships and the concomitant individual decision making, at least for lower value customers, are being replaced by institutional regimes. This move towards a process based regime, however is not unproblematic. As the bank began its reorganisation, there was a recognition of some of the tensions that would develop between a policy of centralisation and a desire to continue to appear as a local 'high street' bank. This tension manifested itself in a number of ways, most notably in the conflict between 'relationship management' (in the sense of managing accounts according to what was 'known' about the customer as the product of a long-standing relationship) and management according to expert risk grading and assessment packages. It was also evident in the tension between responding to the customer and what might be seen as 're-configuring the customer'. This was partly resolved at the level of the account with accounts deemed 'core' or 'mass market' being largely managed 'by the machine'. However, even important business accounts were subjected both to various expert risk grading packages - such as GAPP (Grading and Pricing Policy) - and to a formal process of report. Thus, it became apparent that process driven lending does not entirely eradicate face-to-face work, because even customers in the mass market were liable to make complaints, and from the customer point of view, complaint often demands a personalised, managerial response. That is, customers insist on being taken seriously. A second issue was the maintenance of various records by different centres. That is, rather than a single 'customer file' always being the relevant resource, sometimes several different records exist in different locations. The problem of managing the customer becomes, under these auspices, a problem of understanding 'distributed data'.

Reconfiguring the customer.

The centralisation process has been driven by a variety of factors, one of which is the attempt to ensure standardisation and consistency in decision-making and procedure not only through increasing reliance on the technology but through an attempt to re-configure customers and staff. This involved developing a set of expectations as to how accounts should be handled; a set of expectations that emphasised the application of standard procedure as opposed to the more personalised approaches of the past, epitomised by the notion of lending on 'gut feeling'. So, for example, a standard set of templated letters were developed to send to accounts that were 'out of order', accompanied by a 'script' to be used whenever customers complained.

Of course this did not guarantee that customers would respond to what were effectively computer generated letters informing customers of the state of their account in the same impersonal way, for example, one customer responded to a computer generated letter in the following manner:

> *Might I enquire as to what particular charm school gave you your wonderful way with sarcasm and barefaced cheek! You were bloody rude... I demand, by return an apology.*

As one manager pointed out the attempt to ensure consistency and, importantly, the attempt to write in 'plain English' has not always been appreciated by customers, especially long-standing ones. These examples suggest some initial tension in the 'customer care' process in the large, centralised units, but it should not be thought that 'skilful' demeanour work was totally absent. As we have suggested above, demeanour work was observed to be equally prevalent in mediated communications such as telephone work - indeed operatives often refer to this as 'smiling down the telephone'. However, given the much greater customer base of these units such demeanour work was unlikely to be facilitated by 'local knowledge' of the customer. However, what becomes important in such customer facing work is orientation to the customer record - in effect attentiveness to the 'virtual customer' represented in organisational records of various kinds - and attentiveness to unravelling the history of the customer's account and complaint using the available technology. In these circumstances issues of representation and standardisation of the customer record become especially important for organisational actions.

Getting to know the 'customer in the machine': categorisation and standardisation.

In the context of the bank, it is very often the managers who have effectively become the locus of change, balancing and resolving at a practical level the tensions involved in reconciling the centralisation of processes and administration with the decentralisation of customer services and 'selling'. Managers are consequently obliged to reconcile organisational realignments with changes in consumer behaviour the most notable of which is the increase, for example, in telephone banking and the use of ATMs, allied to the changes in their work alluded to above. As one manager commented;*... whereas in the past the branch manager could stand in the banking hall and recognise ten of his customers ... now he might not know any of them...* For the branch manager this creates an interesting problem:

> *If you take out the non-customers and you take out the business customers, and you take out the runners... if you take out that lot, then you take out the customers of other branches, I'm actually seeing very, very few of my own... customers. So then we got to say 'where are the rest of them?' because I can produce a printout that says I've got fourteen thousand customers. And that was the answer to it: 'How well do you know your customers?' 'Not very well. Some of them have credit balances of twenty, thirty thousand pounds. And we never see them. We've never even heard of them...*

This branch manager can see - 'in the machine' - that he has 14,000 customers on a computer printout, but most of them he never sees. Yet the computer tells him that they are his customers so they must be there. The problem then, for the manager, as indeed for wider organisational policy making, becomes one of delivering a 'cross selling' strategy without the personalised knowledge base that could once be unproblematically assumed.

For the bank, one answer to this problem has been a strategy entitled 'Managing Local Markets' (MLM), a sales approach focused within the bank's Customer Service Branches and Business Centres where face-to-face customer contact has been retained. The strategy in effect relies on the institutionalisation of various kinds of 'local knowledge'. Initially all staff underwent an exercise to develop some understanding of what they needed to know about customers. This involved the staff in question finding out what lay 'beyond the walls' of the bank. Employees went out in the streets on walkabouts and drivearounds, collected newspaper cuttings, advertisements of house sales etc, trying to assess the character of their particular area and gain some measure of the competition. Our point is that what is entailed here is the *mapping* of what the traditional bank manager already knew in detail, insofar as the bank manager historically derived much of his or her knowledge from their role in the local community - regarded it as commonplace that their knowledge extended beyond the walls of the bank. Such maps are not a replication of this detailed local knowledge, but an attempt to replace it with something codifiable. For example, 'someone of X age living in Y part of town with Z number of children who already utilises bank products A, B, and C can be expected to be interested in products N'. As opposed to it's worth sending one of those mortgage leaflets to Geoff Smith because I was talking to his dad at the counter only the other day and he was saying he'd just got promoted and was thinking of moving house. In the early months of our research bank managers in branches had remarked on the problems they foresaw with this kind of move toward standardisation. [Some kinds of standardisation they embraced as useful, in particular with regard to regulations and compliance, where they considered it necessary to know exactly where they stood]. One branch manager said at the time, I'll give you an example. I've just had an application for a car loan from a young woman. Now on paper, there's no way she should get the money - she's starting a new job ... not that well paid ... difficult to assess job security. But it happens I know her father ... he's a very good customer of this branch ... I play golf with him ... I know ... I know he's good for It ... Knowledge of generalised local characteristics is hardly the same as this kind of personal connection, but it is nevertheless local knowledge, and moreover knowledge that can be stored and classified on a computer.

At the point of application MLM is computer driven. Knowledge maps, howsoever they are derived, and it is clear that they are derived from various kinds of ad hocery, allow for some process of categorisation. It involves in this instance customers being categorised into 5 basic categories - A+, A, B, C and D - with the A+'s being the super accounts and the Ds being the ones that cost money to run. These categories are based upon a thorough knowledge of the customer's dealings with the bank, the nature of their credit balances, the running of their account, credit cards, investments, mortgages, insurance etc. In practice it was found that there were large numbers in the B and C categories, so further classifications are now being applied. Customers are variously listed as being: 'Retireds'; FIYAs (Financially Independent Young Adults); YSs (Young Singles); and Mid-Markets, BOFs (Better Off Financially) and WOEs (Well Off Establisheds) who are all aged 31 to 50 with the classification being based on the

amount of money that passes through their accounts. This process of categorization can be refined even further as the following fieldwork extract, where a manager is talking about MLM details:

> *... and then what we intend to do is to literally look at these very narrow groups so we may actually go to the computer ... where we may actually be able to say 'Right what we want to have a look at, we want to have a look at those customers which are classified as Mid-Market, that are aged between thirty one and thirty three, that's this little group, that have a risk grade of one to five on their account so that we know they're good accounts, and that perhaps live in a particular area ... And that should produce a target group of something in the region of say fifty accounts*

The target products in MLM - insurance, pensions or whatever - tend to be ones that are currently in focus throughout the bank, and a complementary sales drive operates under the banner of 'Business as Usual' where they attempt to sell the same products to the people they do see regularly. To establish the ones they don't see they use the customer database to discover their normal mode of contact with the bank. Beyond this they will engage in other considerations such as what products customers already hold in order to better target their potential customers.

MLM has a number of important implications. Computer-derived models of market segments are being used to devise a whole set of organisational and marketing rationales and these underlie an increasing number of management activities and decisions and the way these are achieved. Additionally there are efforts underway to arrive at ever better depictions of customers within the machine. There are at least two issues worthy of consideration here. One of these is the representational nature of such virtual customers and how it is arrived at and engaged with from day to day. The other is the question of how managers (and others) negotiate some sort of 'fit' between 'virtual customers' and the 'real' customers they see over the counter or talk to on the phone. Clearly on the one hand depictions are arrived at through both a codification of local knowledge and a set of assumptions driven by 'known facts' about customer accounts and imported presumptions regarding life-cycle behaviours. Our observations of actual customer-facing work suggest that arriving at some sort of 'fit' continues to be a matter of contingent drawing upon whatever interactional competencies are required to maintain customer confidence and engage in accountably appropriate conduct, whilst rendering 'virtual' resources relevant here and now. And that is, of course, the point with any body of information or 'knowledge' - be it computer-mediated, a 'virtual customer', or anything else. It is only through its use in a visibly appropriate and relevant ways in particular kinds of activity that it acquires any kind of sense or significance at all. And the lesson to be learnt from customer unpredictability is that the one thing you can never specify is actual circumstances of use.

CONCLUSION

> *'. . .much of what we take for granted as inevitable or technically required or economically determined should be subjected to the most vigorous of critiques: if work is socially constructed then it is contingent and requires perpetual action by agents for its reproduction - it does not just happen but has to be brought off. (Grint 1991:3)*

We have tried in this paper to give some flavour of the balance between on the one hand individual and localised strategies regarding knowledge of customers, and on the other of organisational strategies for evolving processes relevant to customer management, and how this balance is shifting. As we have seen, such local knowledge in branch work forms part of the 'interactional' competency spoken of. Our intention in describing these various and shifting activities associated with customer-facing work is to suggest the problematic way in which 'sensemaking' work on the part of operatives has to be melded with organisational processes and new work arrangements. In showing how 'making sense' of the customer remains a problem, whether or not knowledge is embedded in the machine, we seek to show how the 'local', albeit in a somewhat different form, remains relevant. The point is that 'local knowledge' in whatever form seldom arises as an issue in information or knowledge management. The presumption that relevant knowledge management techniques can be derived from idealised conceptions of knowledge, based largely on the continuing view that expert knowledge can be adequately characterised as being of a procedural kind is not warranted on the evidence we present. To a large degree our argument is a methodological one, in that knowledge elicitation techniques of one kind or another do not for the most part depend on the recognition of the *social* character of knowledge. Ethnographic or observational stances, in contrast, are founded on the search for exactly this form of 'knowing'. The 'invisibility' of much of this interactional and local competency stems, we believe, substantially from the information-theoretic position in knowledge elicitation. In turn, information systems for organisational use tend not to incorporate knowledge of this kind. This, despite the fact that, in the context we describe, new procedures, processes and work arrangements work in part because operatives find ways to make them work. Accomplished and skilful deployment of local knowledge in the 'real world' activity implicated in customer services, whether or not it is computer-mediated, requires appreciable sense-making work on the part of operatives. As organisations seemingly move towards increasingly distributed and 'virtual' forms of working - whether it involves 'virtual teamwork' or orientation to the 'virtual customer' - the recognition of the varied skills involved in customer-facing work seems likely to place particular and increasing burdens not only on the technology of the organisation but also on the knowledge embedded in those technologies.

We can see in the above observations that, regardless of the presence of electronically-mediated artefacts in such work, a great deal of its actual achievement boils down to the skilful adaptation of pre-existing interactional competencies such as those embodied in things like demeanour work, handling the unpredictable, and the

relevant use of local knowledge. Whilst staff will regularly turn to 'virtual' representations of customers in the context of their day-to-day work, these amount to no more or less than sophisticated bodies of information. The real skill, or artfulness, in customer-facing work comes in embedding those bodies of information in experience in such a way as to make them specifically relevant to necessarily situated and contingent circumstances, a contingency recognised in notions such as lending on 'gut feeling'. So, whilst it is possible to wax lyrical about ever more virtual, transient and flexible patterns of co-ordination it is important to recognise that at some point these ideals will need to make contact with situated, manifestly 'real' work where what matters is the interactional competencies through which distributed resources can be brought to bear. Ultimately, then, 'virtual' organisations need to give close attention to providing appropriate technology, and training, for the contingent character of such interactionally-focused work.

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REFERENCES:

1. Bittner E (1965) 'The concept of organisation' *Social Research* 23 pp 239-255
2. Burton D 1994 *Financial Services and the Consumer* London Routledge
3. Channon D (1998) 'The strategic impact of IT on the retail financial services industry' Journal of Strategic Information Systems 7 (1998) 183-197
4. Garfinkel H (1967) *Studies in Ethnomethodology* Polity Press Cambridge
5. Grint P (1991) The Sociology of Work Cambridge Polity Press
6. Holland C P Lockett A G and Blackman I D (1998) 'Global strategies to overcome the spiral of decline in universal bank markets ' Journal of Strategic Information Systems 7 pp 217-232
7. Hughes J A King V Rodden T and Andersen H (1994) Moving out from the control room: Ethnography in system design *In Proceedings of CSCW '94 Chapel Hill North Carolina*
8. Knights D 1997 'Governmentality and Financial Services: Welfare Crises and the Financially Self- Disciplined Subject' in G Morgan and D Knights *Regulation and Deregulation in European Financial Services* Basingstoke Macmillan
9. Kuljis J Macredie R D and Paul R J (1998) 'Information gathering problems in multinational banking' Journal of Strategic Information Systems 7 pp 233-245
10. O'Reilly J 1994 *Banking on Flexibility* Aldershot Avebury
11. Randall D and Hughes J A (1994) Sociology CSCW and Working with Customers in Thomas P (Ed) *Social and Interaction Dimensions of System Design* Cambridge University Press Cambridge

12. Sieber P and Griese J (Eds) (1998) *'Organizational Virtualness'* Proceedings of the VoNet - Workshop April 27-28 1998 http://virtual-organization net/workshop stm
13. Travica B 'The Design of the Virtual Organization: A Research Model ' in: Proceedings of the Americas Conference on Information Systems August 15-17 1997 Indianapolis AIS pp 417-419