Knowledge Management In The Introduction of CRM Systems:
Tacit Knowledge Transfer, Subcultures and Impacts

Track: Management of Information Technology & Systems:
- Knowledge Management
- Customer Relationship Management
- Implementation Issues

Abstract:
This exploratory case study research applies a processual analysis (Pettigrew, 1997) to the implementation of a Customer Relationship Management (CRM) system from a knowledge management perspective to a contemporary (2003-4) situation within IBM. A specific focus is given to areas neglected in previous CRM studies - sub-cultures, psychological contracts, how tacit knowledge is surfaced and transferred, and with what effects on implementation. It investigates how the system stakeholders and the system itself evolved through encountering barriers, sharing knowledge, finding new uses, inventing work-arounds. A rich picture emerges of sub-cultural silos of knowledge linked with psychological contracts and power-based relationships influencing and inhibiting adoption and acceptance of the CRM system.
Introduction
CRM is emerging as a key element in system integration. It has attracted a lot of attention but also, according to such as Tafti (2002), experienced up to a 70% failure rate-all making it an interesting object for research. CRM systems remain understudied academically. Linkages between knowledge transfer and psychological contracts remain understudied in the implementation of a CRM, or any other, system. Exploratory intensive case research is a highly useful device for providing insights into these issues. We use Pettigrew’s processual framework for analytical purposes. After a critique of the relevant literature, we detail the research methodology, then describe and analyze the case.

Literature Review
We draw upon four extensive literatures relating to: implementation studies, sub-cultures, knowledge transfer, and CRM systems. For reasons of space, Figure 1 on page 3 is used to codify the main literatures reviewed. On implementation, there is still much opportunity for the Information Systems (IS) field to move beyond relatively simple black-boxed views of technology towards more powerful conceptualizations of the organizational roles of IT artifacts (Markus and Robey, 1988). Furthermore, Orlikowski and Iacono (2001) argue the need to put technology back into the study of information systems. This research treats technologies and organizations as mutually dependent and dynamically emergent.

On culture, Waterhouse (1991, 1992) found that 47 percent of IT directors state that their main problem was a culture gap existing between IT and business professionals. Furthermore, 56 percent believed that the culture gap was losing or seriously delaying IT opportunities for their company to gain competitive advantage. Before, and subsequently, there have been various attempts to improve the communication and participation between subcultures to enable successful implementation. These include the Systems Development Life Cycle in which well defined phases of development provide bases for management control (Davis and Olson, 1985); Mumford et al. (1978) with their concept of user participation; Social Technical Systems approach (Bostrom and Heinen,1977); Soft System Methodology (Checkland, 1981); and IBM’s Joint Application Design (1977). However, these many efforts have not been geared to investigate and examine the factors that enable and inhibit communication across subcultures from a knowledge management perspective.

Different scholars talk about ‘knowing of what others know’ (Lawrence and Lorsch, 1967), ‘mutual perspective taking’ (Boland and Tenkasi, 1996), ‘shared mental space’ (Newell et al. (2002), and ‘T shaped skills’ (Iansiti, 1993) as aids to tacit knowledge transfer. However they fail to address the micro processes that lead to the above. This research aims to fill this knowledge gap by investigating the micro elements leading to shared mental space and for tacit knowledge transfer to take an explicit form across key subcultures with resulting effects on the adoption of CRM systems and their acceptance.

Strong hierarchical enterprises prevent smooth cross-functional communication and consequently inhibit cross-functional cooperation or knowledge sharing. Breaking down hierarchies can facilitate knowledge transfer (Nonaka, 1994). Knowledge in hierarchies frequently becomes ‘sticky’ - that is, residing in one area or silo and not easily moved to the other parts of the organization (Bartlett and Ghoshal, 1998). Non-codified techniques play an important role in industrial production and in technical and technological innovation (Perrin 1990). Some scholars (Anderson and Schalk, 1998; Makin et al, 1996; Rousseau, 1995; Thibaut & Kelley, 1959) argue that psychological contracts play an important role in the outcome of interaction between individuals. To date few links have been established between knowledge transfer and psychological contracts.

Though often presented as a recent phenomenon, CRM systems have evolved gradually over the last decade. A survey of more than 1,500 companies found that 41 percent of the organizations with CRM projects were either experiencing difficulties or close to failure (TDWI Industry Study, 2000). Furthermore, 91 percent of organizations either had, or planned to deploy, a CRM solution in the near future. Failure rates of CRM projects may be as high as 70 % (Tafti 2002); therefore implementing CRM is challenging. As Ciborra bluntly states, "CRM seems to have no built-in mechanisms by which it acquires its own momentum and (by which) the diffusion becomes a self-feeding process" (Ciborra 2000). CRM studies so far have looked only at the macro level, while here
we investigate micro level interactions. For an overview of literature review, see Figure1 on page 4. The literature review generates the following research question: ‘How is tacit knowledge surfaced and transferred across key subcultures and with what effect on the adoption and acceptance of a CRM system?’

**Research Method**

We employ the Pettigrew framework (1985, 1991) to analyze the internal and external contexts, linking these with history, content and process of change. This framework has been widely used in analyzing organizational and IT-enabled change and is here used to develop deeper insight into the phenomena under study. Time and history are central to processual analysis and act as building blocks, enhancing the understanding of the contemporary situation (Pettigrew, 1997). The research aims to reveal patterns embedded in these building blocks. These patterns emerge in the form of themes during the analysis of empirical data. The themes also relate to theories regarding IT implementation, culture, knowledge and CRM already discussed.

The methods of gathering data included historical analysis, twenty face-to-face semi-structured in-depth interviews, five telephone interviews and on-going observation. The recurring themes in the gathered data raised many ‘how’ and ‘why’ types of questions (Hyde, 2000). These were used as constructs in analyzing the implementation process. Interviews focused on questions about aspects of organizational processes such as a specific decision making (King, 1994) and helped to probe stakeholders in gathering differing perceptions. The face-to-face method exposed the characteristics of the interviewees during the interviews. An interview guide kept the focus on the key aspects of the literature review. It focused on: the role of the respondent, implementation process, key events with dates, stakeholder perceptions regarding the key events, knowledge creation, retention and its exploitation. Interviews were audio taped and notes were taken by the interviewer. The note-taking gathered information on what happened during the interview and clarified the researcher’s understanding of what was being said. Having transcribed the recorded interviews, manual color coding was done and data was organized under recurring themes. This facilitated searching, marking up, linking and reorganizing of data in a short period of time (Denzin and Lincoln, 2000). The recurring themes were used as constructs in the analysis. The use of observation in data collection is well documented (Bell 1992). This was achieved through attending 12 staff meetings. Furthermore, workshops were carried out to involve key stakeholders of the CRM systems. The variety of methods chosen created a useful form of triangulation (Yin, 1994). Good relationships at different hierarchical levels at IBM helped to gain further insights. For reasons of space, in what follows we describe and analyze the case together, with a summary chart provided in Figure 2 on page 17.
The literature review gives a special focus to subcultures, and how tacit knowledge is surfaced and transferred, and with what effect on the adoption and acceptance of a CRM system.
Case Study: IBM and CRM Siebel Implementation – 1999-2004

Background: History and Context
IBM finished 2002 with revenues of US$81 billion. IBM ranked number one on Fortune magazine’s 2002 “Ten Most Admired Companies” list (IT category). IBM also received the most U.S. patents – a record 22,257 in 2002 – for the tenth consecutive year. The company makes a broad range of computers, including PCs, notebooks, mainframes and network servers. It also develops software and peripherals. In addition, IBM owns Lotus® Development (maker of the Lotus Notes® messaging system), and Tivoli® Systems (which develops tools that manage corporate computer networks). About 60 percent of IBM’s sales are to customers outside the United States. In 2001 here was a change of chief executive officer with Sam Parnizarno replacing Lou Gerstner.

The decision to take on board CRM Siebel was made at the top level in December 1999 by three executives. According to Vince Ostrosky, Vice President, Customer Relationship Management (CRM) at IBM, IBM’s internal implementation of Siebel eBusiness Applications is a story about change on the smallest, most personal scale. It is about changing the way IBM serves its customers, one by one. It is also about changing the way IBM employees access timely customer information, individual by individual. Looked at from another angle, however, it concerns IBM employees and Business Partners around the world moving to a single view of the customer and accessing that customer information anywhere, in real-time. It is about enabling fast, convenient service for customers worldwide, and improving the way major, global IBM divisions collaborate with each other and their business partners. In short, it is about one company’s determination to become a more globally integrated, customer-focused company, with unprecedented speed and scale, responding to whatever means the customer chooses to do business with IBM:

“Our goal is to be viewed as one IBM by our customers and to work as one IBM internally. We’re aiming to make IBM best of class in its industry for sales, marketing and customer service excellence. We believe we can achieve this goal by using Siebel applications to leverage our existing strengths as a market-intelligent enterprise.” (Vince Ostrosky, Vice President, Customer Relationship Management IBM)

IBM Internal Context
Focusing on subcultures, these were observed at three levels: senior management level, Pre-Deployment Team (PDT) level and within the PDTs. CRM legacy data was in a poor state. However, this was not discovered until the data migration began. Hence stakeholders from the senior management may have had a different perception regarding the contemporary situations in the various business units. The differing perceptions of stakeholders were influenced by their differential interests, expectations and power (Long and Fahey, 2000). Senior management under-estimated the amount of post-implementation training needed for end-users. Consequently after the initial user experience, they had to set up workshops to assist with user queries regarding the new system. The learning-on-the-job method did not seem to work particularly well:

“We needed a better transition plan - 30 to 45 days out - as to ‘what do I do now’ as opposed to just assume that they would have everything - that they would learn ‘kind of’ on the job.” (Steve Wright, Vice Chairman, World CRM Deployment)

There were also team hierarchies at different levels:

“There was one team but it had lots of different dimensions, so we had one team at the world wide level and then we had three individual geography based teams, one for the Americas, one for Europe and one for Asia Pacific.” (Peter Cross, CRM Operations Manager)

Content and Process of Implementation
This section covers proposed changes, including their substance, and how things were done and issues perceived (Pettigrew, 1985, 1991). This is discussed in terms of the rationale for CRM Siebel, the type of approach employed to implement the CRM Siebel (big bang or phased). It will also discuss how the project was managed and what support was made available during the
implementation process of CRM Siebel. Furthermore, we also discuss issues regarding user training and user commitment.

IBM had already implemented over 1000 customer-focused applications internally. However, each was dedicated to a separate business division.

“Hundreds of tools that were independently created with different data sets, different management systems, different support staff and different operational environments.” (Steve Wright, Vice Chairman, CRM World Deployment)

Previous initiatives were unable to provide a customer overview globally. According to Steve Wright, the need for an integrative approach was recognized and the company started to investigate different options available in the market for system integration. At the same time the market in general was getting more competitive and turbulent.

Enterprise-wide CRM technologies like Siebel eBusiness Applications had, in 1998, just arrived on the market. These packages were geared to help companies like IBM achieve a higher level of consistency and responsiveness, and eliminate building CRM functionality internally from scratch, thus enabling rapid execution. They are also designed to eliminate the headaches of inconsistency across multiple divisions or business units. IBM wanted the business to have a consolidated view each time it interacted with its customers. For a company as big and as complex as IBM, this was no easy feat. They decided to replace most existing CRM applications with a single system called CRM Siebel. This posed a great challenge regarding the implementation of CRM Siebel in 160 countries with 11 lines of business.

The initial rollout was to 26 IBM.COM call centers. The CRM-driven change included everything from acclimatizing call centre agents to a new user interface to shifting voluminous, disparate customer data onto a common database, re-engineering sales processes and, eventually, creating a global help desk:

“This deployment demonstrates again that we can do it all from design, implementation and processes to hardware, software and middleware. The only other way to accomplish this would be to form partnerships, but that would require integration since components would be less likely to work together.” (Cher de Rossiter, IBM CRM Project Executive)

The contract with Siebel was signed in January 2000 and negotiated during that period. According to Steve Wright, IBM had agreed to a plan of phased deployment both geographic and potentially functional in its design in the second quarter of year 2000. Implementation started with additional functionality to the IBM.com call centre community in North America, firstly in Smyrna Georgia. Then it expanded horizontally, meaning into other call centre organizations in North America and then into EMEA (Europe, Middle East and Africa) and to Asia Pacific through 2001. Additional functions rolled out to North America and subsequently in the European geographies, East Africa and Asia Pacific. The second set of functionality (launched January 2002) was agreed to originally, in its basic form, as activity management where the users of the Siebel environment of CRM system could make requests to others on their team within and across their organizations. After that second wave of function, IBM started to add functions simultaneously across all three geographies (the Americas, EMEA and Asia Pacific) because they knew now that they could do that based on the success of the first two waves.

During May 2002, the third release included the ability to share customer leads with IBM’s external channels, their business partners. They simultaneously deployed ‘lead management’ across all three geographies. This was done within a three week span over all the geographies, excluding Japan, Korea, Taiwan and China. The fourth release IBM delivered was field sales support. This concluded the three major elements of the sales process, including opportunity management, activity management and account management. Opportunity management is critical to IBM’s sales process, activity management is a function deployed as their second functional wave, while contact and account management represents the new area of managing customer contact information.

During 2003, IBM were in their fifth wave of marketing capability to be deployed in North America and EMEA. During the period of review (2003-4) deployment was on hold in Asia, with a number of issues being worked through. Thus, in summary functional waves with horizontal expansion were implemented, following what Steve Wright called a called “broad not deep” approach.
CRM Siebel implementation at Portsmouth UK (a local example)

For micro-level illustration, we look at implementation at IBM.COM located in Portsmouth, North Harbour, UK. At IBM.COM, five business units came on board. PDT teams to action the implementation process and to train the users were formed. The first to come on board was IBM.COM also called the PDT1.

According to Donna McGeady (CRM deployment leader), IBM in our local example worked to a strict deadline of Jan 29th 2001 to go live, employing the ‘broad but not deep’ approach. The next European country to come on board was linked via parallel meetings. Process definition, mapping and transition across all processes was done. Appropriate team function workshops and documents to be actioned were created. Data migration work at Portsmouth was a critical success factor to meet the project deadline. Data migration was important as the data needed to be moved from the existing legacy systems and over to the new system. A shadow database was created to map the data from the legacy systems before putting it on the new system.

In December 2000, territory assignment activities commenced at Portsmouth to ensure that, on migration, all Tele Coverage agents had the correct accounts and the opportunities they were working on. Helpdesk training was set up, in-house experienced agents utilized and live helpdesk functions set up to go live on cut-over date. During December – January 2000/2001, data testing activities across the transfer from old to new system were carried out. The data stored in the shadow data base was tested prior to moving it to the new system. IBM.COM/PDT1 at Portsmouth UK went live 29th of January 2001.

Project Management of CRM Implementation across IBM- Worldwide

Prior to making the decision to acquire the system, IMB invested in excess of three years in coming to a common set of well defined processes. These processes comprise the inputs, the outputs and the workflows of all of their key sales and support activities. They also include opportunity management, customer satisfaction, relationship management, and offering information.

In 1997 a support group had been developed to focus on five audiences: call centres.com; field sales, face-to-face sales, marketing and business partners: ‘their task was to understand the job that each one of those audience groups did, how it was evolving and how Siebel would be deployed to them and in effect they were the source of the guidance on how we would configure Siebel to meet the needs of those users.” (Peter Cross, CRM Operations Manager)

IBM also formed a Siebel development group. These were the people who actually knew the Siebel product inside out, took the input from the audience leads, and translated that into specific configuration of Siebel to respond to individual user needs. However, according to Jane Walsh a pilot user/end-user at IBM.COM (local example), she would have liked to see more end-user involvement. Relatedly, for Steve Wright, IBM underestimated the quality and the state of the legacy data. This complicated the data migration.

A deployment team was made responsible for taking output from the Development Group and planning and executing deployment of Siebel releases/upgrades to their end users:

“They had the technical preparation, they had the end user communication and education and they had the actual physical cut-over management. That group really had two major sub-groups to it, one was the deployment planners and leaders, and these were the people that really focused on the planning, the development of the education, and development of communication.” (Peter Cross)

This was the stage (during the end of 1999), according to Andrew Nunes and Jane Walsh (end-users at Portsmouth UK -our local example), where end-users got involved in the implementation process in terms of getting a two and half day training.

CRM Executive reported to a group called Investment Review Board world-wide:

“The two key players who remained constant throughout the life of the project was the Senior Executive responsible for sales and distribution in IBM and the Corporation CIO.” (Peter Cross)

Over the three geographies IBM tried to replicate the above. At the geography level, in each one of the three IBM geographies, the America’s, Europe and Asia Pacific, there was a mirror image of two of the three legs. They tried to replicate the audience focus and the deployment focus at the geography level. However, they did not duplicate the Development Group. Development was done
once at a world wide level and the release/upgrade then implemented commonly to all three geographies.

**User/ stakeholder commitment**

There was initial senior management support to spread an integrative culture through using CRM Siebel. Executive leadership was involved in this project full-time starting at a Vice Presidential level:

“This was a team charged with end-to-end responsibility… they were full time people with inclusion of all the geography teams and all the business units, dedicated full time for multi-year commitment to make this happen.” (Steve Wright)

This showed commitment at senior level. However, implementation was done through a relatively imposed approach. According to several respondents, ‘broad but not deep’ did not penetrate enough to expose local discrepancies and issues. Implementation teams did gather information to benchmark good working practice at IBM. Local stakeholder perceptions at senior and middle management level were taken into consideration. However, according to staff at Portsmouth for example, stakeholder involvement at the ground level came at a later stage. Moreover no external customer involvement was considered at any stage, which challenges the ‘broad but not deep’ approach:

“We did not use customers for any validation or walk-throughs or anything like that.” (Steve Wright)

Furthermore, the implementation was somewhat rushed. The issues with data migration were not taken into consideration:

“What we probably would have done in retrospect, if we were given a chance to re-do this, is extend our timetables a little bit. We had very aggressive plans.” (Steve Wright)

Moreover, the quality of data was in a bad shape but this was not realized until the time of data migration. This data misfit created quality issues regarding the legacy data. Stakeholder involvement at the floor level in our local example came at a later stage according to Jane Walsh, a ‘super-user’. Super users at IBM.COM at Portsmouth UK (local example) were selected by IBM.COM managers when Patrick Walsh from IBM USA came down to facilitate the implementation, six months after the signing of the Siebel contract:

“We went to the managers and said we want the people who you know are not afraid to target the system, people who would say why can’t we do this, the people who question and people who will find things out about the system and share it with the rest of the community.” (Donna McGeady)

Mutual perspective taking did not happen fully due to the competitive nature of jobs in our local example (Boland and Tenkasi (1996). Furthermore, the real content of an apparently mutual perspective was not allowed to surface or be challenged. Thus interpretations which could shake the illusion of consensus between stakeholders were avoided (Gee, 1992). The achievement of a new definition of the situation in which all participants can share has still yet to take place at its full capacity (Habermas, 1979).

In summary, user commitment may also have been affected by the lack of involvement in the decision making process in buying the systems. End-users were involved in the implementation process at a later stage. No external customer involvement was taken into consideration.

**User Training and Experience**

According to Jane Walsh, IBM.COM Sales Account Manager at Portsmouth UK (our local example):

“When super-users started they were shown the system, which was totally different from the system they knew. So they had to get their minds set round how people’s attitudes would be toward the system.”

They got involved with the trainer Patrick Walsh from Atlanta, USA and did the pilot by actually using the system towards the end of 1999. The super-users were trained and used to influence the attitudes and perceived usefulness of the end-users of the system (Davis, 1989). They
were to convince people of the benefits of a completely new database and layout. This was a major change to IBM.COM, in our local example at Portsmouth, because it changed the whole of their database. A lot of long-standing employees were in a mind-set resistant to change. According to Jane Walsh super-users needed to understand the benefits of the system themselves first to be able to convince others. They had to get their minds set around what the database could offer them.

Training was given by these super-users to the rest of the floor before the release date. The duration of the training program was three to four weeks, with two and a half days per user effectively. Training duration seems to have been rushed and once more the focus was on the ‘broad but not deep’ methodology. The short training duration led to an illusion of consensus between the parties (Gee, 1992). In our analysis, a false consensus existed between the trainers/super-users at IBM.COM (our local example), in which trainers assumed that end-users were more similar to themselves than actually was the case (Ross et al., 1977). A ‘shared context for knowing’ could not take place due to the lack of shared and mutual psychological contracts (Newell et al., 2002).

Other issues relating to training of end-users arose: “Learning by the PC wasn’t good - because it doesn’t really teach you much - that training was a certified course, and you had to finish it otherwise it would go up the line to management. That wasn’t a good way of learning.” (Andrew Nunes, end-user IBM.COM – Portsmouth, our local example)

Training duration was very short and did not give enough time for users to understand and feel comfortable with the system (Bingi and Sharma, 1999). Patrick Walsh from Atlanta spent too short a time at IBM.COM Portsmouth. Time constraints prevented full transfer of perceived benefits of the system from Patrick Walsh to super-users and from these to end-users (Pliskin et al., 1993). End-users were put on a two and a half day course prior to the system going live. Moreover they had to learn the system to be able to retain their job security (Davenport et al., 1998). Psychological contracts seem to have been imposed rather than mutual (Rousseau, 1995).

As a project folds out, not only does ‘process’ in Pettigrew’s (1985) five-fold framework become important, but so also does user training and experience (Willcocks and Margetts, 1994). In the research case user commitment was highly dependent on imposed psychological contracts rather than shared or mutual ones. As a result tacit knowledge transfer was incomplete (Boland and Tenkasi, 1996). Power-based relationships as a result of imposed psychological contracts led to lack of reciprocity and lack of trust (Krogh et al., 2000). Furthermore, end-user culture was not fully understood and taken into consideration due to the lack of time (Claver et al., 2001). Issues regarding data migration and training discussed above point to the same system having different meanings for different people: for example system analysts and users did have the same points of view concerning the system (Pliskin et al., 1993). Interaction between different levels of hierarchy could have helped to create a better understanding of the state of the legacy system and the training needs. Interaction did take place only to a limited extent, due partly to the implementation process structure itself not allowing the creative abrasion to take place fully thus impeding knowledge transfer (Leonard-Barton, 1995).

Full time workers were deployed in teams, to interact with different business units, to understand the business need and processes worldwide, according to Steve Wright. Some mutual understanding may have been present in the interactions. However, an implicit component of the psychological contract was absent, thus resulting in lack of clarity and illusion of consensus for both parties involved (Anderson and Schalk, 1998; Gee, 1993). This inhibited knowledge transfer and resulted in data misfit.

The explicit elements of the psychological contracts between the senior management and the end-users included a sense of obligation to work, and job security. On the other hand, implicit elements remained hidden (Makin et al., 1996). Differing stakeholder motives also inhibited interactions at depth (Thibaut and Kelly, 1959). The above resulted in insufficient information regarding both the data on the legacy systems and the training needs of the end-users.
Knowledge Transfer Issues in the CRM Implementation

Knowledge silos were found both at vertical and horizontal axes. At the vertical level of hierarchy there is a management system called Signature Sales Leadership, which facilitates some knowledge transfer as it is used to gather data. A corrective action is taken during the weekly review whenever an out-of-bounds condition is identified. If there are pervasive issues consistently occurring across all the geographies, or all the brands, those are brought up to a sales operations review at a world wide level and they review the process/design, or the tool capability and function, and at a global level. However, there is no system that captures, retains and exploits the tacit knowledge owned by the end-users:

“Within Siebel are some data points and reference capabilities and analytical functionality etc but quite honestly there is no vehicle within Siebel or CRM itself to capture tacit knowledge and then share that across other sales organizations.” (Steve Wright)

According to Lisa Nichols, (CRM Process Manager for IBM.COM-our local example), at a lower level of hierarchy CRM smart website is used. From this website the end-users and their managers can take part in the latest development of the CRM tool. This allows the end-users to take advantage of the prescriptive knowledge available in order to improve their work (Vincenti, 1993). But the adoption phase was rushed through. End-users had insufficient time to get to know the system well and were still locked in an older mindset with a familiar looking green screen (Jane Walsh, Donna McGeady). This led to the window of opportunity for system adoption starting to close, and the system being adapted by the end-users (Orlikowski and Tyre 1994). This was accompanied by negative talk informally. One of many examples was people complaining about inability to log on to the system inhibiting their performance. Annoyance became expressed openly as well, e.g. “Siebel’s down, I can’t log on, I’ve got three customers screaming at me, you’ve got to sort it out.” (Donna McGeady)

According to (Kunda, 1991b), some free transfer of knowledge takes place in informal settings. However, in this case transfer of knowledge was in the form of a negative spiral not motivating system adoption.

Some people however, were faster than others in picking up the system. They were more IT literate and had a ‘can do’ attitude. The tricks of the trade, the short cuts, were (and are) getting developed in the heads of the end-users. However, due to the competitive nature of the job those work-arounds or short cuts may rarely get transferred (Vincenti, 1984):

“So it could be - but in an ideal world it shouldn’t be like that - we’re all fighting them, the competitors. We’re trying to win customers - we shouldn’t be fighting each other - it happens though.” (Andrew Nunes)

Elites possessing the knowledge may find it hard to let it go and to share it openly with their colleagues (Davenport et al., 1998). Thus:

“Everyone is protecting their sheep, because they are their opportunities, and they are numbers so they will be counted.” (Andrew Nunes)

This exposed a subculture gap, where elites were on one side and shared the knowledge only among themselves. We observed knowledge silos developing, containing knowledge in the form of work-arounds and tricks of the trade that remained embedded in certain groups or sub-cultures (Vincenti, 1984; Orlikowski and Tyre 1994). As Donna McGeady put it:

“The gurus will always pass (work-arounds/tricks of the trade) to the gurus”

This increased the dependence of non-elites on the ‘gurus’. Thus, following (Salancik & Pfeffer, 1977), ‘gurus’ not only created job security for themselves but also increased the dependence of others on them. However, as per Krogh et al., (2000), some tacit knowledge did get transformed to an explicit form through the reciprocity of relationships by way of informal interaction:

“Once a month we have a call and we talk mainly about the process side of things. But if one person is having something happen, then we’ll always check to see if it’s applicable in other countries. And I think it’s something that’s automatically happening - it’s just something that you’re not really aware of.” (Lisa Nichols)
However this was done in a formal setting which may inhibit a free transfer of knowledge across the subcultures (Kunda, 1991b). Furthermore, at local level at Portsmouth UK for example, CRM Siebel was implemented in five PDTs at Portsmouth-UK (our local example), but not concurrently. Consequently systems did not interlock with each other over a period of time. PDT5 (Database Marketing) came on board at a later stage. PDT1 in our local example had the new system up and running, whereas the PDT5 was still using the old system and this continued for about eighteen months. All the PDTs have their own set up and do not interact with each other on a regular basis. They do, however, have a vertical reporting system and a help desk shared with other PDTs. The latter is linked further with a business unit called the Service Management. That in turn is linked with the Project Team EMEA (Europe, Middle East and Africa) and World Wide Factory. There is no horizontal interaction structure that would facilitate the transfer of any ‘prescriptive knowledge’ (Vincenti, 1993) across the PDTs. However, the vertical reporting system may enable some knowledge transfer. Knowledge, in particular tacit knowledge, mainly still lies in vertical silos within the PDTs. Knowledge in such silos had become ‘sticky’ that is, residing in one area or silo and not easily moved to the other parts of the organization (Bartlett and Ghoshal, 1998).

IBM.COM, also known as PDT1 in our local example, has further six subsections which went live at the same time. They are: GSMB (Global Small and Medium Businesses), Sectors, Software specialist, Business Partners, Tele sales (based in Dublin) and Web team. Problems within these subunits are reported via the help desk to the Service Management. Service Management then works with the query and tries to resolve it. However end-users from IBM.COM from Portsmouth when talking to someone at helpdesk may end up explaining a local issue to an IT technician in a far away country. Alternatively, they can contact the Operation Team or Focal Point, based locally, to facilitate a face to face interaction in which case the local support will still have to contact the help desk (Bennett and Gabriel, 1999). So there is no way of by-passing a vertical reporting system. While end-users can seek help from the super-users via their team leaders (Alison Ogden, Mike Cope, IBM.COM at Portsmouth UK) there is no guarantee that they will get help because ‘gurus’ may be reluctant to pass on their ‘tricks of the trade’.

**Conclusion**

This paper set out to investigate the CRM implementation at IBM from a knowledge management perspective. Special focus was given to IBM.COM in UK at Portsmouth. Implementation began in 2000 and is at April 2004 on-going.

This research found senior management underestimating post-implementation training required by end-users of CRM Siebel. Training was short and gave insufficient time for users to understand and feel comfortable with the system. Through haste, perceived benefits of CRM Siebel did not penetrate the super-users sufficiently to enable effective transfer to the end-users. Management, having overlooked data misfit issues, had to deal with these belatedly during the implementation period. Moreover frequent upgrades did not allow the users to settle down.

Due to a strong vertical reporting structure, which resulted in power based relationships at IBM.COM in our local example, knowledge hoarding occurred in vertical silos. In addition to this, knowledge was not being transferred freely along horizontal axes due to the competitive nature of the job and what we will call the ‘guru’ culture.

The research found psychological contracts playing an important role in knowledge transfer. Explicit elements of psychological contracts between senior management and end-users included a sense of obligation to work, and job security. Importantly implicit elements of psychological contracts remained hidden (Makin et al, 1996) producing illusions of consensus, which influenced and inhibited adoption and acceptance of the CRM system. Where psychological contracts were imposed, power-based relationships were reinforced, with noticeable inhibitions on and patterns in knowledge transfer. This exploratory research also identified but did not report in detail micro mechanisms underlying the development of ‘mutual perspective’, ‘shared mental space’, ‘T-shaped skills’ and ‘knowing of what others know’. These findings corroborate earlier findings of studies into IT-based business projects, but also point to the important role knowledge issues play in implementation processes. Moreover we found such issues a surprisingly neglected area of focus amongst those responsible for design and implementation, despite CRM representing a large and key knowledge intervention into the organization.

Outcomes
- Senior management did not prepare for the amount of post-implementation training for the end-users of the system.
- The learning-on-the-job method did not seem to work particularly well.
- Training duration was very short and did not give enough time for users to understand and feel comfortable with the system.
- Perceived benefits of the system did not get enough time to be transferred across from the super-users to the rest of the end-users.
- Difficulties in achieving a shared context and goal (lack of mutual psychological contracts).
- Frequent upgrades did not allow the users to settle down.
- End-users have their own culture and understanding of that culture is vital to the stakeholders at a higher level of hierarchy.
- Data misfit issues were discovered during the implementation and not prior to it.
- The explicit elements of the psychological contracts between the senior management and the end-users may have included a sense of obligation to work, and job security. On the other hand other implicit elements of the psychological contracts may have remained hidden (Makin et al, 1996).
- Knowledge creation, retention and exploitation in a PDT sub-unit need further investigation in order to enhance the understanding of “The gurus will always pass to the gurus”.

Context (External)
- Market was getting more competitive and turbulent.
- Newness and changing of technologies with more customer focussed approach.
- IBM ranked number one on Fortune Magazine’s 2002 “Ten Most Admired Companies” list (IT category).
- Microsoft as one of the main competitors launched windows 2000.
- CRM technologies in the market had arrived.
- Starting a working relationship with Siebel could have been considered as a good strategic move.

Content
- ‘Broad but not deep’ approach was used.
- High complexity project, as the roll out considered a ‘broad but not deep approach’.
- The legacy data was in poor state. However, this was not discovered until the data migration began.
- The Initial rollout was to 26 IBM.COM call centres.
- System went live a year after the contract was signed.

History
- IBM had separate solutions for separate business divisions.
- Hundreds of tools that were independently created with different data sets, different management systems, different support staff and different operational environments.” (Steve Wright, Vice Chairman, CRM World Deployment)
- Previous initiatives were unable to provide a customer overview globally.
- The need for an integrative approach was recognised.
- IBM wanted the business to have a consolidated view each time it interacts with its customers.

IT-Related Change
- Executive leadership were involved in this project full-time starting at a Vice Presidential level.
- End-user involvement came at a later stage
- No external user involvement was considered at any stage
- The legacy data was in poor state. However, this was not discovered until the data migration began.
- Super-users were used as trainers after giving them a brief training.
- Differential interests and motives at different levels of hierarchy may not have helped in establishing mutual psychological contracts (Makin et al, 1996).

Context (Internal)
- Subcultures at three levels of hierarchy were observed. They are at senior management level, PDT (Pre-Deployment Team) level and within the PDTs.
- Large number of business divisions
- Top down approach; Decision to take on board CRM was made at the senior management level by three executives.
- Vertical reporting system; all the PDTs’ report vertically.

Process
- Executive leadership were involved in this project full-time starting at a Vice Presidential level.
- End-user involvement came at a later stage
- No external user involvement was considered at any stage
- The legacy data was in poor state. However, this was not discovered until the data migration began.
- Super-users were used as trainers after giving them a brief training.
- Differential interests and motives at different levels of hierarchy may not have helped in establishing mutual psychological contracts (Makin et al, 1996).

Previous initiatives were unable to provide a customer overview globally.
- The need for an integrative approach was recognised.
- IBM wanted the business to have a consolidated view each time it interacts with its customers.
References