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# Managing Technological Change in a Call Centre Context - A Question of Learning?

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## Managing Technological Change in a Call Centre Context - A Question of Learning?

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### Abstract

*A change of information system, in a call centre - which has developed its self-image around working with technology - puts pressure on both employees and management to learn new ways of working. And while some argue that call centres conduct work that is knowledge-intensive, others argue that call centre staff is becoming more controlled, more dependent upon technology and routines, and so less autonomous. With reference to a longitudinal case study of a Swedish customer service centre this article explores organizational consequences of technological change. In so doing we look deeper into the challenges of learning that emerges as companies try simultaneously to achieve a high degree of internalization and externalization.*

### Keywords

Technological change, call centre work, organizational learning

### Introduction

When going through a technological change process, prevailing organizational norms and values change the ways in which managers acknowledge emotionally charged behaviours and features such as stress and burnout among employees (McGrath, 2006). Furthermore, the character of knowledge required differs. Whereas certain environments require knowledge sets more specialized and tacit in nature, other environments require a more generalist and explicit set of skills. For call centres of today, the challenge appears primarily to be to increase efficiency through generalist, flexible and explicit knowledge sets that are easy to transfer, whereas the advantages of tacit knowledge are rapidly eroded. There are many prospective explanations to why and how learning occurs. Cognitive matters (Andreu & Ciborra, 1996), norms and culture, social factors and institutional forces are all in play. And although that is probably true for many types of organizations, in a bureaucratic organization – as opposed to one governed by ideology (Alvesson, 2000) – such as a call centre, other kinds of factors may surface as well. The degree of management control, enabled by technological scripts, leaves little room for interaction, imagination and development among employees (Houlihan, 2000). Learning and skills, in this context, tend to circle around script performance and system competence. This reduced need for employee skills brings concern about the long term wellbeing of call centre agents creating an environment “... characterized by constant change and constant insecurity, [where] each person is as vulnerable as his or her last statistic” (Houlihan, 2000:236). Against this background, the purpose of this paper is to capture organizational consequences of technological change from a learning perspective.

### Technological Change

The potential of information technology to change organizations has been a persistent theme in the IS literature since the 1950s (Robey and Boudreau, 1999). Closely aligned with management studies, IS research traditionally has had a focus on how information systems and new technology promote organizational effectiveness and reduce costs. Over the years the rather complex relationship between new IS and organizations has brought advanced new concepts and a more elaborate analysis of organizational change (see DeSanctis and Poole 1994; Markus and Robey 1988; Orlikowski and Robey 1991; Edmondson et al 2001; Sahay and Robey, 1996; Schultze and Stabell 2004; Walsham 1993). Generally, these studies, that have influenced the whole IS field, consider the IT implementation process as a dynamic and complex process addressing cognitive aspects of behaviour as embedded in a social context. A system implementation in a call centre, which has developed its self-image around working with technology, puts pressure on both employees and management to learn new ways of working.

Within management research, a well known goal is creating an environment where employees are motivated by a strong identification with company norms and values – an environment where employees act in the best

interest of the organization (Willmott, 1993). User resistance, consequently, does not respond to the utopian model of management (McGrath, 2006). As managers expect their employees to act in the best interest of the organization, employees expect their employer to fulfil specific obligations in return (Andersson, 1996). "Practices of resistance, such as misbehaviour or playing the system, reflect a channelling of stress...in the main, agents seek to do their job well and to work in both the customer and employer interests. When this breaks down, it is often due to the constraints of the system that has been put in place" (Houlihan, 2000: 231).

## The Call Centre Condition

During recent years call centres have interested a number of researchers. Hence, as indicated the perspectives presented within academic research have shown rather different sides of call centre organizations and work. Optimistic on the one hand, portraying call centre work as teamwork emphasizing the growth of a new organization and management, darker on the other hand, asserting call centres as an organizational form of ultimate control and supervisor power. In any case, considering the two perspectives, it is arguable that the call centre context, due to its character, is a very complex phenomenon, and that contrasts "...exist in the complexity of agent-customer interaction, the degree of routinization or customization, the 'hardness' of quantitative targets, the length of call-handling times and the extent of employee discretion. In short, differences in volume and value reflect managerial prioritization of quantity or quality." (Taylor and Bain, 2003:1492). More so, the rather split sides of call centre research have sparked renewed interest in the nature and the meanings that employees attach to their work (Russel, 2002). Call centres may provide several business advantages such as increased efficiency and flexibility as well as reduced dependence on employee skill and cost savings (Houlihan, 2000: 229) In the aim of increasing efficiency call centres are often and typically under the pressure of minimizing the costs of those interactions (Rose, 2002).

When roles and rules are restricted and routinized, and management is rooted in technological control mechanisms, there should be little left for ambiguity, imagination and development (Houlihan, 2000). Then how does the call centre environment respond to organizational learning implications? According to Houlihan (2000) learning, in the call centre context, is to a large degree limited to narratives and "communities of practice". This could be explained by turning towards Contu and Willmott (2003:284) "Within communities of practice, it is not the acquisition of skill or knowledge with a universal currency (e.g. textbook knowledge) that identifies the 'competent' member. Rather, it is a demonstrated ability to 'read' the local context and act in ways that are recognized and valued by other members of the immediate community of practice that is all-important". Yet although call centre work may be more holistic and complex than the manufacturing assembly line, much research still considers possibilities the possibilities for learning and training as minimalist rather than non-existent (Russel, 2002:487). Themes such as stress, job dissatisfaction, resistance and deskilling imply that employee agency is minimal and that call centre work induces "...environmental and psychological stress" (Houlihan, 2000:228) The stressful environment could typically be illustrated by the tension between quality high pressures of efficiency as well as that between generalist or specialist competence among call centre agents.

## Learning Processes

Whether or not the image of call centre work is the one of panopticon or not may be a question of perspectives. Either way, this paper sets out to focus the contradictions and consequences of technological change – mindful of the complexity of the call centre context. In so doing and by arguing that implementing customer relationship systems (CRM) and organizing to utilize its potential, is an organizational learning process (Zahay and Griffin, 2004), this study are particularly concerned with the character of knowledge (Reed & DeFillippi, 1990; Nonaka & Takeuchi, 1995) and the management of externalisation and internalisation of knowledge (Nonaka, 1994) the combination of exploration and exploitation (March, 1991; Weick & Westely, 1996) and organisation of knowledge, i.e. specialisation versus generalisation of unit co-workers (Brown & Duguid, 1991; Grant, 1996; Boisot et al, 1997; Sanchez, 1997).

In his 1994 paper, Nonaka describes the processes organisations go through as they create tacit and explicit knowledge. Nonaka is particularly concerned with social interaction, and in so doing relates back to the models of Daft and Weick (1984) and Brown and Duguid (1991). Regarding obstacles and factors, the primary concern is commitment (to create knowledge) on behalf of the individual. Commitment in turn is contingent on three factors: intention, meaning an idea about the purpose of knowledge; autonomy, meaning the possibility for individuals and groups to interact freely; and fluctuation, referring to the importance of variance, including "breakdowns", which can challenge individuals' mindsets and interrupt their being in the comfort zone. The basic question is the conversion and dissemination of different types, i.e. tacit and explicit, knowledge, and often writers, like Nonaka, find that the key managerial and organisational challenge is to manage social interaction. The so-called knowledge-based view of the firm (referred to by both Conner & Prahalad, 1996, and Spender, 1996) has come to focus strongly on the character of knowledge and its place in organisations. In terms of

factors, texts within the knowledge-based view centre its discussion upon how firms can convert and manage knowledge to be sticky and hence difficult to imitate for competitors while still being transferable internally. Grant (1996) characterizes the firm as an institution for integrating knowledge. Grant claims that, contrary to other theories of knowledge, the primary role of the organization is to apply rather than explore knowledge. The main organizational issue, according to a knowledge-based view and given the role of knowledge, is to balance the trade off between specialized and generalized knowledge, and the role of common language. Firms need to be endowed with broad ranges of heterogeneous yet specialized knowledge. Creating such heterogeneity results in communication difficulties: specialized knowledge requires specialized language, and hence managers have to choose between excessive costs of coordination (an effect of heterogeneous, specialized knowledge), and the costs of being inflexible – and less competent (an effect of commonality). In Grant's view, the benefits are larger with heterogeneous, specialized knowledge. Others, like Boisot et al (1997), indicate that increased generalising and knowledge transfer runs the risk of losing its finer aspects (not every component of knowledge can be distributed) and also of leaking to competitors. Externalising, transferring and explicating knowledge may be important in a strategy of flexibility, homogeneity and productivity, but not one for situations requiring ad hoc abilities to resolve advanced problems. What we are looking at here, in the case of call centres, is exactly this challenge: how to improve costs through generalization without jeopardizing the quality that follows with specialism.

## Method

The findings reported are taken from a case study (Yin, 2003) of two call centres in Vattenfall AB, a Swedish utility supplier ranked top four in Europe in terms of sales turnover. The two offices, Umeå and Nyköping has about 400 employees and are located north (Umeå) and south (Nyköping) of the main office in Stockholm. In following a process of change where Vattenfall decided to implement a large SAP (Systems Applications and Products) system in its customer service functions, this research focuses the learning processes following from that change. We apply a relatively open approach to data, and use the theories listed above as means to absorb and interpret findings from 38 interviews, observations, and statistical enquiries across staff, the overarching objective being to capture the learning processes they go through as they change the organisation and the technology (new computer system for customer interaction). The method applied is part inductive part deductive. This was followed by the creation of a research guide and initial interviews with management and call center workers to assess conceptual validation. Over the course of three years, the survey was distributed at the two sites on three occasions. At the end of each phase the surveys were followed up by interviews and observations. The objectives with the survey were to understand the pre and post implementation situations at the different sites as well as to explore factors that might affect learning. Findings are matched with theory to provide a framework for learning challenges to call centres.

Table 1: Sources of data

Sources of Evidence	Umeå	Nyköping	Stockholm
Number of interviews	23	10	5
Average length of interview	20-60 minuets	30-80 miuets	45-90 minuets
Meetings attended as observer	7	2	5
Site visits, participation	22 days		7*
Survey measures	3 occations	3 occations	
Access to company data	Full access	Full access	Full access
Access to project documentation	Full access	Full access	Full access
*Introduction course to SAP system in Stockolm			

## The Implementation Process

“In Umeå there is this old culture cultivating that it is in Stockholm that every decision is made. We have worked actively with reducing this gap. We move away from that perception as Nyköping is growing; there you won't find that culture at all. We grew too fast in Umeå and there is a strong culture with a lot of history in the walls. Our group leaders have tried to change that but old co-workers are affecting the organization and remember old events. There is an enormous amount of gossiping in the Umeå organization.” (Manager, Stockholm)

It has been suggested that large technology implementations should be guided by allowing for learning and that the capability to absorb new technology is enhanced by a member's prior experience (Sahay and Robey, 1996). In the Vattenfall case it was the following; The CRM implementation was triggered by five main objectives; (a) increase efficiency (b) increase flexibility (c) cost saving, (d) to realize business benefits and (e) to improve organizational learning. The epitome of these visions was to streamline processes and thereby gain a proactive, effective and flexible customer service for internal and external clients. In addition, by improving their customer processes, Vattenfall were expecting to gain economies of scale. And of importance, given an underlying wish to automate work processes, Vattenfall expected to decrease the need for tacit knowledge amongst staff. The CRM system was supposed to help change the organization, and externalize knowledge, making it explicit so that staff turnover would not affect the organization so negatively.

Let us enumerate more precisely the ways in which the SAP initiative was initiated, a process that started already in late September 2003. The initial step was taken when Vattenfall, in cooperation with consultancy firms, conducted a bottom-up analysis to explore possible benefits from mySAP Utilities. In June of 2004 the first areas for cost savings were identified and almost all of them concerned the customer service functions. A first decision was set for the implementation to "go live" in late May 2005. Yet, due to several unexpected circumstances, that date was soon to be postponed. The first and most important one was that the SAP application was lacking in several core functions such as supplier- and customer changes. Secondly, and also of great importance, was that the training program for the call centre employees had been delayed due to the incompleteness of the system. Not too dramatically then, Vattenfall decided to postpone the "go live" date until the 24th of November. However, still in November Vattenfall found themselves with several configuration problems and decided to postpone the implementation yet another three months, hoping to "go live" in February 2006. At this critical stage, the postponed implementation process was costing Vattenfall a substantial amount of money each day. In February 2006, the system was yet not complete and several core functions were still missing or to be implemented. At that time the head office in Stockholm was starting to get worried, and the initial project leader, who by now had left the project, already considered the SAP initiative as a potential failure. Finally Vattenfall were able to "go live" with their SAP solution on the 24th of April 2006, almost a year too late. It is in the effects of these delays in the implementation process rather than the causes that the following empirical part takes its stand.

### **Preparing for change**

"My feeling is that we will not be able to go through with a system change. We have too little competence and that we are too few co-workers. Too many are just generalists. If one would provide staff with a decent salary I guess that we would be able to hold on to some competence. Right now more or less the whole office is looking for new jobs." (Group leader, Umeå)

At the Umeå office, the preparations for the CRM system implementation were initiated very early in the process. The project started out almost immediately with holding introduction meetings with the group leaders concerning the impact of the new system. At the beginning things looked quite dazzling and most of the personnel were enthusiastic about the technological changes. The personnel were tired of the old system that badly responded to the users needs. By that time, the personnel were also informed about the structural changes that were to follow with the new system; amongst management was the reorganization considered a step towards the new "flexible" co-worker. The initiative was justified with three main arguments, the first being that of the flexible organization. Secondly, with the new system, one had hopes of to a higher degree solving the customer's problem at the first contact and thirdly, as a consequence then, to be able to decrease the costly back office functions. It brought on the personnel new demands on work and especially new and smaller working groups with more group leaders. This structural change was not in harmony with the norms and values of the staff, creating a situation of unclearness and psychological stress. Additionally, the gap between management and those working on "the floor" seemed to increase. An employee at the customer service in Umeå expressed the following: "I'm worried that the managers in Stockholm don't understand or see the limited possibilities for Vattenfalls customer service to reduce costs. I'm sure that Vattenfall as such will be able to save some money, in the long run. Yet, I believe that the costs at the customer service centre will increase instead of being reduced due to new working processes."

In the call centre context the degree of flexibility was dependent on the small groups to which the staff were divided. And a growing conviction became that the "flexible co-worker" was an impossible task, and that the so-called "Curry huggers" (the name of the ones holding on to the old system) later became the result of this impossibility. In sum, the organizational structures – whether enabled by pre-existing relationships or not – appeared to be a critical dimension in the process of changing the organization in response to the new system.

By that time the average age of the employees in both Umeå and Nyköping was 29 years. In the Umeå office the socio-demographic data revealed that 35% of the employees had worked within Vattenfall for less than a year.

The reason for this could partly be found in the fact that the Umeå staff was not reducing in numbers as hoped for, rather they were increasing in preparing for the future technological changes. Further, the socio-demographic data revealed that over 46% of the Umeå employees had academic degrees, as opposed to Nyköping that had about 15%. When analysing the results of the survey it would turn out that the independent variable of academic background in combination with affiliation (front or back office), became the most significant in terms of how the employees experienced their work and their expectations of the change process. At the Umeå office most of the staff with academic skills was to be found in front office (65%) functions. This was a bit surprising since it had been communicated that the back office function had the most difficult and complicated errands. When asked why the highly educated to such a low extent were found in group leader or back office functions one of the line manager answered "they usually leave so soon anyway". This sort of prediction was typical for an increasing simplification of the social structure in the customer service centre. For years they had been struggling with a high degree of staff turnover, and had recognized that the highly educated were those that left most frequently. On the other hand, and of importance, was that the highly educated agents were performing at higher levels and did to a higher degree feel well prepared for the SAP implementation than their less educated co-workers.

### **Managing change**

Even though head office staff emphasized the call centre as the organization's most important unit, call centre staff often expressed being overrun by the head office. The front and back office divided the organization in two that lacked in interaction and learning. More or less all interviewees agreed that the company has a problem sharing knowledge both horizontally and vertically. Similarly, the call centre staff found it very difficult to share knowledge between themselves due to the degree of control and routinization of work tasks. Due to the high degree of academically skilled staff at the Umeå office, there were no problems with the knowledge base, rather with its fragmentation and a lack of motivation. The staff felt over-qualified for their work and as if their competence was not effectively used. The informal structures were shown to be the hardest to change, and replacing the old system was in some cases considered as a tool for breaking up such informal structures – being a threat to the informal organization. The organization was considered as being hierarchic and there was a strong mistrust from the highly educated that Vattenfall did not take care of the knowledge of their employees nor supporting knowledge development. At the most fundamental level, the staff had to realize that the new system would bring new ways of working, i.e. their working environment was being challenged by the new technology.

In the meantime, Nyköping staff surfaced as perceiving the organisation as more well-functioning and being more pleased with work. Yet, expressing more concerns about SAP. So, the technological change was perceived differently among the employees and between the two offices. "I enjoy my job and think that things work quite fine. I'm a bit nervous concerning SAP but I'm sure that everything will turn out just fine. I guess that we will have some problems in the start, and it would have felt good with some more education, but it will turn out just fine, you'll see."/Nyköping

It was indicated by management that if one would not commit to the new routines and structures, indirect threats of dismissal was to expect from the line managers. Hence it is important to point out that such threats were also put from the employee's side towards the managers. Statements such as; "practically all of us are looking for new jobs" were common and created an unstable work environment. More so, in waiting for the SAP implementation the staff had to keep working and educate new staff within the Curry system. The harsh situation also led to severe consequences and about 20 employees actually resigned during the following summer.

### **Post implementation situation**

Vattenfall were able to go live with the SAP system in May 2006, nearly a year too late. Yet the system was not configured correctly and that the employees were forced to use another new system called "webb-grunkan" until SAP was completed. This required new ad hoc learning. And even worse, all of the consultants that had been hired in stood without work since they only had skills in the SAP system. So, more than 50 persons stood without work while the queues on the telephones where rising. Learning how to cope in such a context was not trivial. This type of implications was not addressed by the company up front, but had to be dealt with ad hoc by communication, by explaining the rationale and by allowing for socialization by means of e.g. group meetings and individual conversations. The line managers were busy in what was called the "customer service emergency meetings" twice a day, constantly receiving new information about what functions in SAP that were ready to be used. At the most fundamental level, users had to realize that their view on their working environment was being challenged. But then again, the reasons for why the implementation actually took place when the SAP system was not completed had not been communicated from the head office. Not even the line managers were aware of how premature the system was, revealing the lack of corporate communications. And while the customer holding

lines where getting longer and longer the new consultants could only do a bit of administrative work at the maximum.

By fall 2006, some enhancements had been made to SAP; however the performance of the staff was dropping against the existing standards. The combination of dropping numbers, the poorly developed functionality of the system and, the increasing number of personnel was not only affecting staff but also middle management and group leaders – creating new tensions. When asked about the power relationships at the office, one group leader at the Umeå office responded, quite typically: “We know that this is a management failure, from the CEO and down. There is a vision that we will create a well functioning customer service yet nobody tells us how. You have to guide people otherwise everyone will do just as they want. It’s such a horrible hierarchic thinking here. You have to be careful so you don’t step one somebody’s toes.”

The critique from staff, as illustrated, made the Vattenfall head office to work much more intensively with issues such as group leader involvement. One such action was bringing in consultants from McKinsey to help the group leaders out in structuring the work processes. The people from McKinsey started to implement new structures and routines. But these changes were superficial and not universally accepted. One employee at the Umeå office expressed the following: “Along came McKinsey with ‘the right way’ of doing things. And if you questioned them they got really frustrated. We took courses where you were to gain the right flow though the organization. Sure, we got to fold papers in the shape of airplanes, it was so idiotic and such a simple way of illustrating our organization. But in the end, I got paid for sitting there and doing it.”

So, whilst there was a strong body of support when it came to helping middle managers out from the head office, the emphasis was misdirected generating less favourable responses. More so, the continued concerns about the implementation revealed new cynical discourses that circulated amongst the front office workers, as well as amongst the group leaders – in the absence of information to the contrary. The SAP system was improving with time and was slowly starting to support the call centre agents in their work processes. And it seemed as if the reorganizations in combination with improving SAP, was working as a catalyst in creating a more open and positive organizational culture. Specialization and established work tasks were suddenly questioned in favour of effectiveness, accountability and openness – virtues not entirely clear at the outset, again despite corporate communications. This assertion, albeit good in theory, turned out to be less effective in reality due to unexpected consequences at the “go live”. In this situation it would be wrong to think that Vattenfall did not have enough resources, however, it would turn out that they had the wrong ones.

## Discussion

Many organizations are well aware of the possibilities new IS may provide in restructuring internal processes and establish improved relationships to their customers. Yet, what is often considered a top-down structured implementation process often ends up in improvisation and bricolage (Ciborra, 2004). In other words, the restructuring phase of the organizational structure after implementation is often the result of ad hoc decisions in coping with changing circumstances. The above empirical observations from Vattenfall, concur with this argument. The CRM system was pre-planned not only to modify work tasks and processes, but also to increase flexibility and strengthen organizational structures. Yet the implementation process, as described, was characterized by ad hoc learning and improvisation. In other words, the restructuring process was temporal, based on situated action and adaptability. The Vattenfall organization was characterized by fragmented and isolated *communities of practices* (see Lave and Wenger, 1991), such as back and front office functions but also the small teams and groups in which they were divided. Additionally they had different understandings of the organization, shared different norms and values and, maybe most importantly, had different understandings of the reasons and effects of the reorganizations and technological changes. This could be exemplified by the back office function in Umeå where staff was more homogenous and to a larger degree identified themselves with the organization. This *community* – that shared many of the concerns of the organization – turned out to have the hardest time accepting the cultural and technological changes. Why so? Initially it is important to emphasize that the back office function in Umeå was not characterized by normative control but rather by an anti-culture (see Parker, 2000) or a *community of practice* (see Lave and Wenger 1991), existing to serve those individuals who choose to be a part of it. As indicated by Pfeffer and Salancik (1978), they were a group with their own expertise and problems, sharing norms and values that influenced their behavior and work situation. Additionally they were building myths of the complexity of work, in order to get their way, even if it was against standard procedures. So, it was difficult to prevent them from continuing their way of work and to make them accept the changes, since their work was, by themselves, considered as being based on tacit knowledge and experiences, making them hard to replace. More so, and as indicated in the empirical analysis, the back office function was associated more strongly with status than was the front office. They were harder to control, and “enjoyed” less pressure to improve productivity and instead had more slack time for interaction.

Although not central in theory, the discourse of flexibility and generalist knowledge was persistent – especially amongst management – as processes where structures and routines should be made explicit and work tasks more atomized. The driving force was the will to standardize and make flexible, in turn driven by technology functionality, cost cutting, and the management of labour turnover. This, in turn, forced exploitation, externalization and homogenization. So, we found, in accordance with Goodhue et al. (2002) that while the CRM system implementation increased exploitative learning, it also worked against specialization. In accordance the structure of the call centre went from a relatively specialised into a very generalist one, where everyone could do a bit of everything. As time passed, the highly educated left the organization, routines became more uniform, and the new computer system barred and controlled how routines were designed. Inherent in this decision was of course the perception that knowledge required to conduct call centre work tasks is common goods: the effect was low knowledge differentiation yet high commonality and efficient communication – all in line with the overriding ambition to automate, make flexible, and control costs. Furthermore, the de facto merging of two intertwined communities of practice into one limited exploration due to lower differentiation of knowledge.

When looking into the notion of flexibility, the thought was to increase the basic skills of the staff, yet at the same time increase formalization. So, the way we see it, management produced new ways to conceptualize structures and routines of doing work, into that of being flexible. Indeed, performance had to change with the new system, but only in such sense that they were made uniform and standardized. So, in the discursive practices of management, flexibility had little to do with incremental or continuous learning. Rather the route to flexibility was considered as coming from standardized formal structures of how to conduct work. Interpreted like this, the discourse of flexibility was conceptual rather than actual. It turned out that the more standardized way of communicating with customers meant that a lot of idiosyncratic, individual solutions based on experiential and tacit knowledge had to be abandoned.

The more homogeneous organisation also found it more difficult to absorb new knowledge from the outside. Not because there was a problem with the heterogeneity of the interface as such, but because there was no differentiation of knowledge across organisational members, and because the interpretive flexibility was limited by technology and routines. Another important observation was that respondents felt that the one off fundamental change towards the flexible and explicit meant there was no going back: they seemed to imply that the turn from specialisation to generalisation is much more difficult to reverse than vice versa. This observation is important since it puts focus on the actual asymmetry of the choice between generalizing and specializing – and in its extension the pros and cons of flexibility. The theoretic explanation to this is probably that tacit and specialised knowledge is more difficult to establish or re-establish than generalised knowledge – it lies in its very nature.

The key findings are all connected, starting with challenges to the character of knowledge, in turn impacting learning strategies, the organisation of knowledge, the community of practice, and the interface to the environment. One such observation was that the company came to pursue externalisation rather than internalisation of knowledge. At the Vattenfall call centre, work has traditionally been structured into front- and back-office functions, where the former typically involves a full working day of answering the calls of customers upset by power interruptions or a difficult-to-comprehend electricity invoice, and the latter includes making analyses and managing files for new or existing customers. Although the objectives of the organisational and technological change included improving the deeper understanding of customer behaviour, such objectives gave way for clearer ones such as increasing the flexibility of co-workers, and cost savings. In its extension, the ambition to automate the back-office function also meant there were less fluctuation and variation, and a more homogeneous and standardised way to interact with customers.

## Conclusions

Modern day call centres face significant challenges. Cognitive matters, norms and values, social factors and institutional forces are all in play. Here, it is argued that change achievements in such environments may not be the result of “heroic” factors such as commitment, motivation or shared beliefs, but rather the result of structured organizational activities and interlocked behaviors. The reason is that certain organizations, such as call centers, are structured and controlled in ways not very effective for knowledge-intensive work. In cases such as this one, other factors come into play, primarily means and the character of means, structure and control mechanisms. In the light of reflection, there was little need for specialized knowledge in the everyday work of the staff in the customer service centre. However, the illusion of being competent and the deception of the need of specialist knowledge were, we believe, crucial in staff emotionally caring for the organization. As management, almost imperceptibly – but nonetheless dramatically – reduced the need of the back office function, staff also lost some of its subjective sense of being knowledgeable. At the customer service centre the attempt to flatten hierarchies brought new structural and cultural practices. The new team-based structured organization was inferred with a

new set of corporate values and beliefs, a way to help in creating the preferable customer service centre employee. So, the customer service centre staff had not only problems with accepting and adopting the poorly functioning IS, they were also starting to realize that they were in a process of “fitting the self into the new normative conditions of the designed culture” (Casey, 1999 pp. 164). Making obsolete certain routines and competences may create strong resistance to IS change. We argue that under limited resources, organisations that have to choose between investing time and money on exploitative and exploratory learning are more prone to aim at the former. The driving force is the will to standardise and make flexible, in turn driven by technology functionality, cost cutting, and the management of labour turnover. This, in turn, drives exploitation, externalisation and homogenisation. Call centres making such choices will become generalist organisations, and over time their ability to explore, internalise and become specialised will decrease. Companies may choose to decline the ability to function as sources of new interpretations of customer behaviour, but the extension of such behaviour might be the first step to outsourcing the function to a third party service. Reversing a strategy of generalisation and flexibility and explication is more difficult than reversing one specialisation and tacitness, and ought to have a stronger position on the decision-making agenda of call centre management.

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