A Call for Change in the Call Center

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ABSTRACT

Knowledge management is concerned with assisting the decision and problem solving process. In domains such as the call center, effective trouble shooting requires the (re)use of knowledge about problem classes, the range of solutions and the link between certain problems and solutions. Despite the existence of many knowledge management tools, knowledge is scattered across disparate sources and often requires implicit “know-how” to be utilized effectively. Acquiring, accessing, maintaining, sharing, reconciling, and reusing knowledge in its various forms are particular challenges in the call center domain where the knowledge needed is complex and constantly changing, which is made worse by short-term knowledge workers. The approach suggested allows knowledge, in the form of rules, to be incrementally acquired as the problem arises, in the form of cases, as part of the daily routine. Using the approach, knowledge workers are able to collaboratively and incrementally capture and maintain the heuristics they use daily for troubleshooting.

Keywords: content ratings; empirical study of user behavior; KMSs and decision-making; knowledge management systems (KMSs); KMSs user interfaces; usage of knowledge in KMSs

INTRODUCING THE CALL CENTER

In the period 2003-2006, we have been working with the Sydney-based call center in a large multinational Information and Communication Technology (ICT) organization, which will be referred to as ORG X. Trouble-shooting failures or reduced system performance on the client’s equipment was difficult and time consuming due to the complex environments involving multiple vendors, machines, software products, and topologies, in an infinite number of combinations. It was no longer possible to expect a single expert to quickly find and resolve such issues. A better approach was needed to allow both the accumulation of knowledge with guided trouble shooting techniques along with interfaces to all other relevant knowledge bases and data sources. The call center of ORG X received around 5,000 customer problem tickets per day globally, 1,000 were e-mailed automatically from faulty equipment to the support center’s case tracking software and another 4,000 per day came from customers, taking on average 2 hours to solve. According to their 2004 Annual Report, ORG X’s cost of services as a whole were in the order of $1 billion per annum. Better (re)use of trouble-shooting knowledge could save time and result in improvements to the bottom line.

Timely retrieval of the pertinent knowledge is an issue for all call centers involved in problem-solving. Additionally, while not necessarily true of ORG X, opportunities for career
advancement in call centers are typically limited and motivation tends to be low with levels of “churn” (the percentage of staff that need replacing) for call centers averaging around 31%, and as high as 51% among outsourced centers (Batt, Doellgast, & Kwon, 2005). A knowledge management system which would allow call center workers to handle the routine problems more quickly and solve more of the interesting problems that were commonly passed to higher, usually more technical levels of customer support, could provide greater employee satisfaction and stability as well improve the company’s reputation and customer satisfaction.

A number of research instruments and techniques were used during this project. We began with an exploratory approach in the form of an in depth case study at our host organization, together with review of vendor offerings and the related literature. The case study involved interviews, observation, and surveys but moved into action research (as defined by Gummesson, 2000) as we participated in the life of the organization and sought to improve the current knowledge management solution through the design, development, and testing of a prototype.

Next let us consider the call center further by looking at the systems currently in use and the issues related to knowledge management.

**CALL CENTER KNOWLEDGE MANAGEMENT AND SUPPORTING SYSTEMS**

Traditional call center knowledge management software has supported case tracking of information such as customer details and the problem description including the product affected, operating system, version number, relevant error codes, and who has been assigned to solve the case. These systems can be seen as an extension to Customer Relationship Management (CRM) systems. Integrating concepts related to CRM and KM recognizes the value of customers, the value of knowledge relating to products and services and the value of managing knowledge for, about and from customers (Gebert, Geib, Kolbe, & Brenner, 2003). Traditionally clients call front-line personnel but facilities for clients to directly enter and sometime solve their problems are becoming more common and in our domain the problem cases/tickets may be machine generated and electronically forwarded.

The Internet has also made it possible to provide “customer coaching” or “one to one marketing” via technologies such as voice over IP (VOIP), conferencing and joint Web browsing (Hampe, 1999). The result was a need to redesign workflows and user interfaces and to upskill the call center staff. For example, Grundel and Schneider-Hufschmidt (1999) offered a custom built user interface for the call center environment in which calls and problems are passed from person to person and perhaps from a range of different device types, ranging from PCs to small handheld personal digital assistants (PDAs) using direct manipulation interfaces. XML to mark-up (Web-based) documents is another key to supporting *Service Centers of the Future* (ScotF) (Schmidt & Wegner, 2000).

In a case study conducted in 3M’s Call Center (Mukund, 2002), it was found that large organizations offering a diverse range of products require sophisticated technologies to provide efficient and effective customer support. Similarly, in the customer care call center for Panafon, Greece’s leading mobile phone operator in 2001, it was found that much of the knowledge that was needed was heuristic knowledge residing both in individual’s minds and in the stories shared in their communities of practice which could be better managed for organizational reuse in a propositional knowledge based system (KBS) (Tsoukas & Vladimirou, 2001). Other artificially intelligent (AI) techniques have been suggested for the call center such as machine learning (or data mining), neural networks, genetic algorithms, and case based reasoning (CBR). However, most of these techniques rely on the availability of classified cases structured into attribute-value pairs. While CBR approaches such as those of Chan, Chen and Geng (2000) do not require structured cases, there are a number of open
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