Chapter 2.21
A Re-Distributed Knowledge Management Framework in Help Desk

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INTRODUCTION

In the past two decades, the widespread application of Information Technology (IT) has resulted in majority of organizational activities being automated and computerized. In order to solve business problems, gain competitive advantage and sustain organizational improvement, organizations have been investing heavily in IT and business information systems development. Consequently, the complexity of business systems has created an infinite number of technical and functional problems. This complexity also means that users are not able to work at optimal productivity when they encounter technical problems related to the system. Organization may face potential loss in income, whether direct or indirect, immediate or in the future. Help Desks (HD) were established to provide technical support to users when they encounter technical problems related to hardware, software, application programs and network connections.

HD, also known as computer call centre, contact centre, assist centre or support centre, is an access point to provide IT-related advice, information and troubleshooting-actions for users. It also acts as a facilitator to collect and analyse data that can transform itself to a more proactive role (Marcella & Middleton 1996). Van Bon et al. (2007) stresses that the responsibilities of HD include first line incident support in case of IT failure, day-to-day communication between the IT department and users, business systems support and service quality report generating. Workman and Bommer (2004) cite the importance of HD as a way to provide technical assistance to users in case of computer-related hardware or software

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failure. In short, it is a first contact place for users relating to all IT support issues.

In most cases, HDs are divided into front line (first level), second and third levels support (Czegel, 2003). Enquiries come into the front line (first level) from various sources. At this level, the first level operator will attempt to provide answers to simple questions. Users can choose to access HD through various channels which include telephone, web forms, email, fax or walk in. If the first level operator cannot resolve the problem, it will be escalated to the second or third level. Second level analysts, who possess more in-depth IT knowledge, will conduct a series of research and testing to solve the problem. If it involves on-site support, such as hardware installation, second level engineer usually takes over the job. If second level analyst still cannot handle the problem, then the case will be passed to the third level specialist such as database administrators, website developers or a vendor to solve the problem.

BACKGROUND: DEVELOPMENT OF KNOWLEDGE MANAGEMENT TECHNIQUES IN HELP DESK

The emphasis and popularity of business information systems in organizations have increased the complexity of the IT infrastructure as well as the coverage of HD on software, hardware, network and other IT related areas. It is not unusual for a single HD to cover hundreds of thousands of IT related products. In addition, downsizing and business process reengineering has led to the shrinkage of the size of HD due to overall budget has been reduced. This has not only reduced a significant number of experienced HD staffs, but has also led to the loss of priceless knowledge which is considered crucial for daily operation within the HD boundary (Leung & Lau 2005). When HD is expected to provide more service with less staff, the outcome is quite obvious: on the one hand, users have to wait comparatively longer before the first level operator is available to pick up the call. On the other hand, HD staff is no longer available for high level and proactive support activity or training. The above situation has been confirmed by several researches. For example, Broome and Streitwiieser (2002) and Leung and Lau (2007) report that the average call volume of HD industry has been increasing constantly. Van Velsen et al. (2007) points out that waiting time is one of the major factors that determines the service quality in HDs. Hence, the development of a mechanism that can control the overwhelming enquires from user is necessary.

Although HD is composed of HD support staffs and technical equipments, the actual axis of the overall support process is knowledge. When users require technical support, this means that they lack sufficient IT related knowledge to carry on their duty. These HD staffs are responsible to help solve the problem by using knowledge that resides in some sort of repository, such as human's brain, database or technical manual. Since the amount of knowledge required is enormous, it is essential to develop and standardize a formal KM process to manage technical knowledge within the HD environment.

KM attempts to manage and capitalize on knowledge that accumulates in the workplace (Clarke, 2004). This is achieved by organizing formal and direct process to create, store, retain, evaluate, enhance and increase knowledge for the future benefit of the organization (du Plessis, 2007). There are slight variations among researchers in describing the process of KM. For example, Wiig (1997) divides the process into knowledge building, transforming, organizing, deploying and using whereas Chait (1999) depicts that the KM process is based on capturing, evaluating, cleansing, storing, providing and using of knowledge. Here, we summarize KM by dividing the entire process into five stages: create, store, make available, use and evaluate knowledge. To manage technical knowledge effectively in HD, a con-