THE ROLE OF KNOWLEDGE MANAGEMENT IN MOVING TO A CUSTOMER-FOCUSED ORGANISATION

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ABSTRACT

Organisations are becoming increasingly more reliant on leveraging their information and knowledge to gain competitive advantage. The creation, storage and dissemination of information and knowledge about customers, and products and services, is particularly important. Effective knowledge management also involves organisational changes including shifts in power, values and processes. In this paper we present a case study of an organisation moving from having a traditional product orientation to a customer orientation. We focus strongly on the business value created from the use of customer and product and service information. The case study highlights the importance of the quality of the customer information infrastructure, the need to view customer information as a critical asset, and the need to focus strongly the training of front-of-house staff and the quality of front-of-house activities.

1.   INTRODUCTION

Managing and improving relationships with customers is critical to the success of organisations. Previously, many organisations have been structured around their products and services. This is reflected in the legacy systems that exist to this day and also in the structure and culture of these organisations. In recent years, many of these organisations have transformed themselves and adopted a more customer-focused orientation. This transformation involves the creation of technological and informational infrastructures that allow organisations to better understand their customer base. The creation, storage and dissemination of information and knowledge about customers, and related products and services, is essential to improving relationships with customers. However, the establishment of these infrastructures is insufficient for the transformation to a customer-focused organisation. It should be accompanied by corresponding changes to organisational structures, processes and culture. The combination of the technological and informational infrastructure and the accompanying organisational and cultural changes together comprise the means of managing knowledge about customers.

This paper reports a case study of the role of knowledge management in the transformation of a large Australian organisation from a product focus to a customer focus. It is concerned with several key issues including how information about customers was managed and used, how the quality of customer information impacted the business, and what organisational and cultural changes were introduced to facilitate the transformation. These issues are analysed through the lenses of customer information management and knowledge management.

In order to better understand the many issues involved in the transformation of an organisation to a more customer-focused orientation, the next section of this paper reviews some of the relevant literature in customer information, customer relationship management and knowledge management. Together, these provide the conceptual lens through which we present and analyse our case study. The following section describes the research approach used. The case study is then described and in the next section a number of key issues concerning the role of knowledge management in moving the organisation from a product to a customer focus are discussed. Finally, a number of important implications for practitioners and researchers are then identified.

2. MOVING TO A CUSTOMER-FOCUSED ORGANISATION: A REVIEW OF RELEVANT LITERATURE

Three important areas of the literature that are relevant to moving to a customer-focused organisation are customer information, customer relationship management and knowledge management. Each of these areas is briefly discussed in the following three sections.

2.1. Customer Information

Technological developments and decreasing costs of technology have enabled organisations to store, collect and manage information about their customers. It is critical to use customer information in order to meet the challenges of increased competition and to compete in markets that were once driven by product offerings but are now dictated by customer needs and preferences. For these reasons, customer information should be viewed as a corporate asset that can be used to deliver competitive advantage and support business initiatives to focus on the customer.

Historically, customer information has been gathered by separate business units within organisations to carry out basic operational and transactional tasks and to fulfil government regulations. Customer information typically included such basis demographic and geographic data as the customer's name, address, postcode and telephone number. However, the shift in focus from product to customer has led businesses to collect additional behavioural, psychographic, and interaction information. Increased technological capabilities have also enabled the collection of vast quantities of this information. The information is a necessary tool in organisations moving to a customer-driven focus and to support the establishment of long-term relationships with customers and hence maximise business opportunities (Khalil and Harcar 1999).

An important issue in the use of customer information for business value is its quality. We define quality as "fitness for use" and use the semiotic framework of Shanks and Darke (1998) as a basis for defining customer information quality. This framework defines three levels of information quality: syntactic, semantic and pragmatic.

Syntactic information quality is concerned with the structure of information and is focused on form rather than content. The goal of syntactic information quality is consistency of representation in one or more databases. For customer information, this includes consistent representation of such things as names, addresses and telephone numbers as well as consistent representation of codes that are used to categorise customers. Customer information that is inconsistent can lead to serious difficulties in consolidating customer information from various legacy systems into a data warehouse for customer relationship management purposes (see section 2.2 for a discussion of customer relationship management).

Semantic information quality is concerned with the meaning of customer information as assigned by users of the information. The goals of semantic information quality are completeness and accuracy. For customer information, completeness means that information is recorded for each customer of the organisation. Information can be incomplete if there is either no information at all about a customer or parts of the information about a particular customer is missing. Accuracy of customer information means that information recorded about a specific customer is correct and matches the customer in the business world at a particular point in time. Customer information that is incomplete or inaccurate can lead to many problems including extra costs, lost business opportunities, offended customers and frustrated employees.

Pragmatic information quality is concerned with the use of customer information, and varies with the person involved, the task at hand and the organisational context. The goals of pragmatic information quality are usefulness and usability. For customer information, usefulness is concerned with the degree to which the information supports a person in accomplishing a task. Usability refers to the degree to which the customer information may be accessed and used effectively. For customer information to be useful and usable, it should be easy to access, timely, easily understood, and concise.

2.2. Customer Relationship Management

Customer relationship management (CRM) is concerned with the business processes and enabling technologies that focus on managing and improving relationships with customers in the areas of sales, marketing and customer support and service. Successful implementation of CRM requires that employees have access to rich customer and product and service information, and knowledge of how to ascertain present and future needs of customers. The choice, delivery and communication about products and services should be tailored in order to effectively develop long-term relationships with current and potential customers (Child et al. 1995).

The CRM process begins with an analysis of customer characteristics and behaviour to develop knowledge about customers and their preferences, habits and requirements. This knowledge is then used in the design of marketing plans and for supporting customer interactions in front-of-house activities. A fundamental premise of CRM is that decisions are based on valid, well-organised and well-understood information. Hence, a cornerstone of CRM is high quality customer and product and service information (Khalil and Harcar 1999).

2.3. Knowledge Management

Knowledge is a high value form of information that can be used to make decisions and take action (Davenport et al, 1998). A key difference between knowledge and information or data is that it is intellectually intensive rather than IT-intensive: knowledge is produced as the result of human interpretation and analysis rather than data processing. Knowledge can be classified as either:

- tacit: knowledge that is subconsciously understood and applied;
- explicit: knowledge which has been written down or codified.

Explicit knowledge is the more familiar form of knowledge, and is found in databases, manuals, policies and reports. Tacit knowledge is a much higher value form of knowledge, because we always know more than we can say (Sveiby, 1997). To be able to apply explicit knowledge to make decisions or take action, it must be made tacit. For example, you must read and understand a set of guidelines about how to market new products and services to customers in order to be able to apply the knowledge it contains. Knowledge may be declarative (descriptions of "what" things are), procedural (descriptions of "how" things are done) and causal (explanations of "why" things occur) (Zack, 1999).

Over the last decade, there has been a major shift in the world economy from the production of goods to the provision of services—this has been hailed as a transition from an industrial economy to a knowledge economy (Sveiby, 1997). Managing knowledge has therefore become a major concern in many organisations, and is increasingly being seen as a source of sustainable competitive advantage (Hansen et al,

1999; Nonaka and Takeuchi, 1995; Broadbent, 1997). While there are many different approaches to knowledge management, their objectives are the same: to make more effective use of "know-how" and expertise in an organisation. This involves management of knowledge assets themselves as well as improving processes for creating, organising, sharing, and using knowledge.

Sveiby (1997) defines a knowledge organisation as one which:

- provides specialist services rather than or in addition to products. Such firms sell their knowledge and expertise to solve complex problems for their customers;

- consists of employees who are highly qualified and well trained professionals (knowledge workers);

- intangible assets are much more important than tangible assets.

Hansen et al. (1999) identified two broad types of strategy for implementing knowledge management:

- Codification Strategy: Codification is about turning tacit knowledge into *explicit knowledge*. Knowledge is elicited from people and stored in repositories, easily accessible by anyone in the organisation.

- Personalisation Strategy: Personalisation focuses on *tacit knowledge* and encourages the sharing of knowledge directly between people. Knowledge is closely tied to the person who developed it, and is shared not only face to face but also over the telephone, by email and by videoconference.

Hansen et al found that all companies use elements of each strategy, but effective firms focus on one of the strategies and use the other in a supporting role. They also found that codification is most appropriate in organisations that provide standardised products or services. Personalisation is most appropriate in organisations that provide unique and highly customised products or services. A subsequent study by Moody and Shanks (2000) found that a combination of codification and personalisation strategies can be successfully implemented in organizations.

3.   RESEARCH METHOD

This research study explores how information and knowledge management have contributed to the transformation of a large Australian organization from a product to a customer focus. The case study research approach is used as it is appropriate for the study of phenomena within their real-world context (Yin 1984) and for the development of deep understanding of these phenomena (Cavaye 1996). Case study research is also well suited to understanding the interactions of information technology related innovations (such as information and knowledge management initiatives) and organisational contexts (Cavaye 1995).

The unit of analysis was the use of customer information by a residential sales team. Case study participants included people involved in managing customer information, management of sales and marketing for residential customers, and front-of-house sales activities. Data was collected by the two authors using eight interviews of approximately one hour duration between June and September 2000. Interview questions related to the organization itself, customer information management, customer information quality and knowledge management initiatives. Other sources of data include internal magazines and other organisational bulletins and circulars, which offer insight into the culture within the organisation and issues that are currently of interest to senior management and staff (Darke, Shanks and Broadbent 1998).

Data analysis was conducted using qualitative data analysis techniques including coding to assign data to categories and identifying patterns in the data (Miles and Huberman 1994). Results of the data analysis are reported as the five themes discussed in section five of this paper.

4.   THE CASE STUDY

In this section, data from the case study is presented. A general introduction to the organisation involved in the case study is provided first, followed by a discussion of customer information management and quality

within the organization. Finally, a discussion of the knowledge management initiatives that facilitated the move to a customer-focused organization is presented.

4.1.   The Organisation

The organisation in the case study is Telco, a leading multinational telecommunications and information services provider. Telco's corporate vision is to enhance their position in Australia as a leading telecommunications and information services provider and expand their international presence. Activities that the organisation is involved with include telephone lines to homes and business, telephone calls, mobile telecommunication services, provision of data and internet carriage services, telephone directories and pay television services.

The Australian telecommunications market has been substantially deregulated in recent years. Since 1st July 1997, when the limit on the number of carriers that may enter the market was removed, Telco's share of the Australian telecommunications market revenues has declined however this has been more than offset by strong growth in the overall telecommunications market. In this period the operating efficiency of Telco has been improved and a strategy to change the corporate culture to be more customer focused has been introduced. The strategy included changes to information systems, improved work processes, retraining employees and systematic reviews of ways to deliver service to customers. The sales, marketing and customer service sections for business, government and residential customers were amalgamated in 1999 into a single business unit to maximise their ability to offer targeted product and service packages to their customer segments in a cost effective manner and therefore optimise returns from products and services in Australia.

Telco believes that their future competitive advantage will come from providing customers with products and service packages that meet their total communication requirements. Customer segmentation will allow the development of tailored product and service packages. For example, the residential customer segment is further segmented in to four life-stage segments to allow telecommunication requirements to be matched with changes in life-style and life-stage. For each customer segment, customised advertising and promotions, customer contact and sales, product design and support and product and service packages are created and maintained. In order to assist sales consultants, segment information is incorporated into sales systems to tailor their marketing to meet customer needs. A new sales channel organization structure is currently being implemented that is aimed at providing more direct channels to customers for sales and services. These new channels handle specific groups of customers and transactions that require different types of customer service and sales emphasis.

4.2.   Customer Information Management

A customer is defined as a person or organization that is engaged in legal contract with the organization. The entire customer base includes residential consumers, small businesses, corporations, wholesalers and resellers and competitors. Previously, a customer was defined as an "account payer" but this view of customers changed to include past, current and prospective customers. There are two main categories of customer information: fundamental and behavioural. Fundamental information consists of identifiers, demographic and geographic information including name, address, telephone, location of telephone, data of birth, and the products and services held by the customer. Behavioural information is "information that the customer would like us to know" and depends on the market segment and usage of the information. Most customer information is sourced from legacy databases (there are over 360 databases that hold customer information in Telco) and front-of-house sales and service activities including call centre interaction and retails outlets. Many front-of-house activities are independent and organised around products and services.

An important objective of customer information management is to achieve a "whole of customer view". This involves being able to consolidate customer information from the numerous legacy databases within Telco and making the consolidated customer information available to front-of-house staff and other decision-

makers. The "whole of customer view" includes full details about each customer together with related information about products and services they currently use or have used in the past. Consolidating this customer information is a very difficult task mainly due to problems with the quality of the information.

A number of factors are related to problems with customer information quality. The root cause of most information quality problems can be traced to its source at the front-of-house. For example, staff working in call centre environments focus very strongly on providing excellent customer service and often neglect the quality of the information they enter into customer databases. There is often high turnover amongst these staff, a corresponding lack of detailed training and pressure responding to a large number of calls within tight time constraints. In many areas of Telco, customer information quality problems are only noticed when "things go wrong". The need to recognise and reward attempts to improve customer information quality at front-of-house was widely felt amongst staff.

Another key issue with customer information quality is the rate of change in business requirements. Customer information requirements for new sales and marketing initiatives have increased and frequently this information is not available from legacy databases. This results in an incomplete representation of the "whole of customer view", in particular interactions concerning enquiries, complaints, and service calls.

Although there are signs that customer information is beginning to be regarded as an important corporate asset, there still remains a lack of understanding amongst some senior management of the value of high quality customer information. One key indicator of this problem is the unresolved information ownership problem. It is at best unclear whether the information technology group or business staff are responsible for the quality of customer information. This situation is not unusual and is in fact widespread in most enterprises (Levitin and Redman 1998).

4.3.   Customer Information Quality

The quality of customer information has been recognised as an important issue within Telco for some time. A national manager for information management has been appointed and a number of projects aimed at cleansing legacy databases, understanding the business impact of customer information quality problems, and establishing a "whole of customer view" have been initiated. A number of customer information quality problems have been identified at the syntactic, semantic and pragmatic levels.

At the syntactic level, differences in identifiers and coding schemes have led to difficulties in matching customer information from different sources and inhibited the creation of the whole of customer view. For example, a particular product code has been used to categorise products in many existing systems but has also been used to segment customers in newer systems. A standard set of definitions for customer information has been defined for Telco as a means of controlling how coding schemes are used. Extensive documentation and training has been undertaken to disseminate knowledge about these standards.

At the semantic level, incomplete and inaccurate information about customers has impacted the organisation in a number of ways. Incorrect address information for customers leads to returned mail costs of approximately $40 million annually and also to significant lost opportunities. Service operators sent to incorrect addresses also represent a substantial cost and are a major cause of customer dissatisfaction. Market segmentation analysis and decision making is also adversely affected by incomplete and inaccurate customer information. For example, forecasting and performance assessment of marketing campaigns and response and installation times and are unreliable with incomplete and inaccurate customer information. Improving this aspect of customer information quality is a high priority within the organisation but is difficult to achieve given the large volume of legacy information and the volatile nature of customer information. An important task is the identification of where to focus efforts to fix these problems that are cost effective.

At the pragmatic level, accessibility and reliability of customer information are key issues. Much of the information required by decision makers needs to be manually extracted from legacy databases by intermediary groups of data management experts. This increases both the cost and the time taken to provide the information. Decision makers consider that the customer information is unreliable as they are far

removed from its source and lack intuitive understanding of its nuances (Tayi and Ballou, 1998). Front-of-house staff expressed high confidence in information that was captured in their area of work but lower confidence in information provided to them from other sources.

4.4. Knowledge Management Initiatives

Several knowledge management initiatives were evident in the case study. The development of a "whole of customer view" of customer information may be seen as a codified knowledge management strategy (Hansen et al. 1998). This information infrastructure contains not only integrated core customer information from legacy systems, but also additional behavioural and interaction information that help facilitate high quality customer service. A prototype customer relationship management database system is currently under development for use by front-of-house staff in enhancing relationships with customers.

In order to establish a truly customer focused organisation, Telco implemented structural changes to cluster staff around customer segments. This not only facilitates targeted sales and marketing activities but also may be seen as part of a personalisation knowledge management strategy. Sharing of knowledge and experiences about customers, their behaviour and related product and service information is vital for future marketing plans and innovations.

Extensive training programs have been implemented to assist staff move toward a customer service culture, and to enable staff to keep up to date with new product and service packages and marketing and sales initiatives. Front-of-house and retail outlet staff in particular benefit most from these training programs. The provision of high quality customer service is highly dependent on having current knowledge of customers and related products and services. Ongoing training programs are vital to the continued movement to a customer-focused organisation.

5. DISCUSSION

A number of key issues concerning the role of knowledge management in moving Telco from a product to a customer focus emerge from the case study. These are discussed below.

5.1. A High-Quality Information Infrastructure is Crucial

Although databases of customer information are sometimes regarded as a commodity, the information infrastructure they provide is crucial. High quality customer information is very difficult to provide but has a direct impact on cost reduction, revenue generation and competitive advantage (English 1999, Huang et al. 1999). Organisations need to understand the quality of their customer information and have quality improvements programs in place. Improvements to customer information quality should be planned at the syntactic, semantic and pragmatic levels (Shanks and Darke 1998). The case study illustrated the importance of defining standards for customer information and the difficulties encountered in providing a whole of customer view. The customer information infrastructure should include not only core customer information but also related product and service information and customer behaviour details (English 1999). This rich and integrated set of information enables useful customer segmentation for sales and marketing activities.

5.2. Organisational Structures should be Aligned with the Customer Focus

It is crucial to make changes to existing organisational structures when moving to a customer focus. Traditionally, organisations are structured around their products and services and consequently legacy systems and work processes are organised similarly. Telco created several new organisational units including a merged sales, marketing and customer service function, and reorganised front-of-house activities to improve customer service. These new organisational units are designed to maximise Telco's ability to offer targeted product and service packages to customer segments. In the future, Telco intends to have

organisational structures for customer segments to support customised advertising, sales, product design and support and targeted product and service packages. These new structures facilitate the sharing of knowledge about customers and products and services within customer segments by clustering expertise (Sveiby 1997).

5.3. Information and Knowledge Must Be Recognised as Important Assets

Both information about customers and knowledge about how to best use that information needs to be regarded as important assets in the customer focused organisation. These intangible assets are perceived to be more important assets in knowledge-intensive organisations (Sveiby, 1997). Clearly, Telco is moving in this direction with the establishment of a national information management business unit and the focus on the creation of a whole of customer view. However, better ways to measure the value of information need to be defined and responsibility for the quality of information needs to be assigned to relevant business units rather than the information technology group (English 1999). Improved understanding of the business impact of poor quality customer information would help highlight its importance and provide management with evidence to support information quality improvement initiatives.

5.4. Front-of-House Staff are Key Stakeholders

Front-of-House staff in call centres and other retail outlets are the first point of call for many customers. They are clearly critical to the creation of relationships with customers, and if they are to function effectively they need comprehensive training in how to use customer information and in available products and services. This training needs to be periodically undertaken due to the continuous innovation in product and service offerings. In the case study, front-of-house staff were mainly part-time or casual and in many cases university students, with a high turnover rate. This contradiction in the type of staff employed to do front-of-house work with the expertise required is potentially a major problem. It is crucial that front-of-house staff are recognised as key stakeholders in the move to a customer focused organisation. Reward structures need to be established for both the quality of the customer service provided and the quality of information that results from the interaction to ensure that customer information quality is not compromised (English 1999).

5.5 Both Codification and Personalisation Knowledge Management Strategies Should Be Used

It is evident from the case study that codified knowledge about customers alone is insufficient for the move to a customer focused organisation. Although the customer information infrastructure is crucial, other organisational structure and culture changes must be implemented. Extensive and regular training is critical for staff to make best use of customer information and to know how to best use related product and service information to provide high quality customer service. Reward mechanisms need to be established to encourage required behaviours. Information about customers and knowledge about how it can be best used must be seen as a valuable corporate asset. Reorganising the organisation to establish clusters of staff working on particular customer segments will facilitate knowledge sharing. Further use of personalisation knowledge management strategies will enhance the move to a customer focused organisation (Moody and Shanks 2000).

6. CONCLUSION

Using concepts from information management and quality, customer relationship management and knowledge management, this study has explored the issues involved in moving an organisation from a product focus to a customer focus. The picture that emerges from the study is that although a high-quality customer information infrastructure is crucial, it must be accompanied by other organsisational structure and culture changes. From the knowledge management perspective, both codification and personalisation strategies should be used (Hansen et al. 1999), Moody and Shanks, 2000). Front-of-house staff become key stakeholders and should be rewarded correspondingly and highly trained. The findings in this paper should

be of interest to organisations moving to a customer orientation and to organisations initiating other knowledge management projects.

6.1.   Limitations of the Study and Further Research

The findings of this study are not strongly generalisable as only one case study is reported in a large and complex organization undergoing considerable change. Care was taken in collecting case study data to improve internal validity by using multiple sources of data and triangulation of important data where possible. Further case studies in different size organisations in different industry sectors should be undertaken to confirm and strengthen the results. Longitudinal studies should be undertaken to look more closely at the outcomes of the initiatives reported.

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